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*Assoc. Prof. Dr. Zulkipli Ghazali  
Head, Management & Humanities Department  
Universiti Teknologi PETRONAS  
Malaysia*

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# The Influence of the Service Quality and Outcome Quality on the Member Overall Satisfaction

A Proposed Model for Health and Fitness Users

**Chen Big Kim\***

*Graduate School of Business, Universiti Sains Malaysia, 11800 Pulau Pinang, Malaysia*  
Email:kim\_chen87@hotmail.com

**Tan Cheng Ling**

*Graduate School of Business, Universiti Sains Malaysia, 11800 Pulau Pinang, Malaysia*

*\*Corresponding author*

## **Abstract**

**Purpose:** The main purpose of this paper is to propose a model to further understand the determinant of service quality which affects the satisfaction level and also to understand the importance of outcome quality attained by members which affects the relationship of service quality and their satisfaction in the health and fitness industry in Malaysia.

**Methodology:** An extensive literature review was conducted and the approach to the topic was conceptualized into a proposed research framework for future study.

**Findings:** There is a potential in further identifying the determinant of service quality dimension as proposed by Lam, Zhang and Jensen (2005) as independent variable affecting the customer satisfaction level in health and fitness industry and also a potential further study in identifying the effect of outcome quality dimension as a mediator for service quality and satisfaction relationship of the members.

**Practical Implications:** The aim of this proposed study is to identify the dimension of service quality which affects the satisfaction level of the members. The result of the propose study will enable the managers of health and fitness club to make a sound decision in strategizing their overall strategy for member retention. This will further support the importance of overall determinant of service quality of a service based business entity. Managers would not only focus on the service itself but also the whole experience of the members during their membership tenure with the club.

**Originality/value:** This paper is to propose an original research framework using Lam, Zhang and Jensen (2005) Service Quality Assessment Scale in the Malaysian health and fitness industry, and the outcome quality from Ko and Pastore (2007) as a mediator in the Malaysian health and fitness industry.

**Keywords:** Health and Fitness, Malaysia, Service Quality, Outcome Quality, Member Satisfaction.

## **Introduction**

Based on the current trend, health and fitness clubs concept have garnered attention and are

receiving increased popularity among the young, old as well as health conscious people all over the world. The primary objective of health and fitness clubs are to provide numerous type of equipment and program as well as space for their members to achieve their personal goal be it to lose weight or to gain physical strength. Over the past few years, this lucrative industry has garnered more than 75 billion US dollar worldwide, of which more than 24 billion of the global market share were contributed by the US market alone (IHRSA, 2011). In Asia-Pacific, the total industry revenue is approximately 13 billion US dollars with a total of 21, 658 clubs available. That represents 14.14% of the global market share. Malaysia alone has contributed to the industry revenue with approximately 101 million US dollar in 2011.

With a total of more than 10,000 clubs and industry supplier as members, the International Health, Racquet and Sportsclub Association (IHRSA) is an association dedicated to providing health and fitness market trend annually. Having more than 30 years of experience being a non-profit organization in the world, they are able to generate reports to track and reveal trends in health clubs across the industry. Based on their 2014 report, it is known that the total number of fitness clubs increased by 4.7% in 2014 compared to 2013.

Be it in Malaysia or globally; there is a current change of people lifestyle which is subject to leading a healthy way of living. From the health related disease that is caused by sedentary lifestyle, health and fitness industry has found its way to set as another valuable space in the health-conscious member, the third space beside, office and home.

In Malaysia, there is an increased awareness of the importance of staying fit and healthy and thus, contributing towards the growth of fitness industry in Malaysia. In Malaysia alone, there are 300 fitness clubs available in Malaysia alone with an average of 933 members per club, (Mcneil *et al.*, 2006). With the fast growing pace of life, Malaysians may find it hard to incorporate exercise to balance their daily activities and to stay healthy. However, if one has firm determination, joining a health and fitness club is one of the best way to incorporate a regular exercise regime in their lifestyle (Teik, 2014). Through health and fitness clubs, members would not only be joining just for the exercises or class, but they may also even meet with same minded people. Even though the wave of having a fit and healthy lifestyle has been making a big introduction in Malaysia in comparison to other countries, the market in Malaysia is still in its infantile stage. However, there are already significant competition among the companies that provide fitness and wellness center in the whole of Malaysia. These has led to the emergence and subsequent closedown of many gyms as well as fitness centers. A recent market potential analysis by the IHRSA Asia-Pacific market report reflected that the estimated additional membership potential for Malaysia is approximately 1,687,200 calculated based on the (penetration growth potential) x (total population of the countries). This shows that the growing area for this industry is very high (Mcneil *et al.*, 2006).

However, although the industry has plenty of growing opportunities, the numbers of members exiting are high as well. According to a report of fitness member survey in Malaysia by Ezypay and Iconnect360, besides the members' personal reason for quitting membership which is uncontrollable by the health and fitness business owner, almost half of the other leaving reasons are mostly affected by the service quality provided by the gym owner, which is within the gym owners' control (Ezypay and Iconnect360, 2015). Another part of the reasons are related to the experience encountered by the members and also relating to their personal cognitive motivation.

Despite extensive research investigating the service quality in recreation and fitness settings, in-depth investigation of the potential influence of the element in service quality experience are less explored. According to Smith (2015), the element of service experience in term of outcome quality

are particularly important in health and fitness centers due to the complex interactive quality in such environments.

Services have been recognized as an important factor in increased customer satisfaction and further translates into loyalty by the customers. It has also been understood that there has been a long history of research showing that service quality will bring in profitability to the organization's long term goal. Service quality is commonly conceptualized as comprising Staff, Program and Physical Facilities (Brady and Cronin, 2001) resulting in how the customers feel about the whole service experiences in the health and fitness setting (Alexandris, Zahariadis, Tsorbatzoudis, and Grouios, 2004).

Zeithaml and Bitner (2000) had defined service quality as a service global judgment or attitude related to the superiority of a service (Kouthouris and Alexandris, 2005). As a result of growing competition and increased member expectations, service quality has been identified as a critical factor in building a competitive advantage in the service industry. Members who are satisfied with the services received from the health and fitness club are more likely to continue buying the services, engaged in positive word-of-mouth publicity as well as an increase in the volume of purchases (Afthinos, Theodorakis and Nassis, 2005). According to Zeithaml, *et al.* (1996), an issue of higher priority for practitioners is the impact of service quality on retaining members (Alexandris *et al.*, 2001). Moreover, the lifestyle of the consumer have changed due to mass propaganda on newer and better lifestyles. In other words, it is the change of a sedentary lifestyle to a healthy and fit lifestyle by the public consumers. As a society advanced economically and mature culturally, with the increment of knowledge bases, the society would demand a higher quality of service (Ko and Pastore, 2004; Ko and Pastore, 2007). The increase in demand for service quality has prompted much research on this topic, and many researchers have summarized that the key outcome of the increased level of service quality as improved profitability about competition, member loyalty, and so on (Ko and Pastore, 2004).

Given this, the study of the connections between the members' overall satisfaction due to perceived service quality and the outcome quality are important for the players of the industry to grasp the factor which directly affects the retention of its members. However, in past years, a number of studies examining the influence of service quality and the mediating effect of outcome quality of the members of health and fitness center in Malaysia had been very limited. Therefore, the aim of this study is to contribute to the extant literature by examining the following two questions:

1. To what extent service quality and outcome quality influence the overall satisfaction of the members?
2. Does the outcome quality of the members mediate the relationship between service quality and the members' overall satisfaction?

## **Literature Review**

### ***Overall Satisfaction***

As discussed in the background of the study, satisfaction of the members are crucial in order to sustain the health and fitness club. There have been studies carried out such as by Zeithaml, Berry and Parasurama (1996) and Zeithaml, Bitner and Gremler (2003) suggesting that high quality service is important towards the profitability of the business because of it increases customer satisfaction. Satisfied customer will lead to retention of the customer and further affect the revenue generation for the business (Yu *et al.*, 2014)

Satisfaction is an emotional state of mind reflecting the benefits (Cole and Illum, 2006) or outcome of an experience (Baker and Crompton, 2000), along with other influences such as service process quality. Many research papers have concluded that satisfaction is more being looked at as the external experiences triggering the customers' emotional reflection, by having arousing their psychological state and positive feeling due to positive experiences (Oliver 1997; Zeithaml *et al.* 2006). However, this is not only applicable to positive experiences but also to negative ones, such as the negative experience of dealing with other people directly causing unpleasant personal experience which in turn, lead to a drop in the satisfaction level. Likewise, the cycle is the same for positive experiences, such as a positive, happy moment of the day which would direct ones' satisfaction towards a positive direction.

Choi and Chu (2001) stressed that overall satisfaction was considered as a cumulative emotional experience of the customer service received by the individual. These aggregated series of satisfaction results in the overall satisfaction which translates as a major determinant of loyalty (Howat, Oliver 1997). As such, overall satisfaction based on the cumulative experience with the same service provider is expected to have a strong relationship with the outcome variables such as the future repurchase behavior, spread positive word of mouth than one single consumption experience (Anderson *et al.*, 1997; Homburge *et al.*, 2005).

However Parasuraman *et al.* (1994) reminded that there is also caution between the overall satisfaction variable and the behavioral intention of the customers. The relationship between this two variable is not as simple as a linear relationship whereby a researcher can explain the causal effect of both variables. False loyalty may be possible if the customers do not have other possible alternatives as their intention to leave may be placed on hold due to high switching costs or the uncertainty of dealing with new people or attending a new place. According to Ko and Pastore (2007), the satisfaction of a customer is a judgment of overall attributes of services based on their expectation and experience. This result has been proven by several studies such as carried out by Oliver (1997) and Parasuraman, Zeithaml and Berry (1990).

### ***Perceived Service Quality in Health and Fitness Industry***

There have been many attempts to study service quality in the health and fitness industry. As discussed by Yu *et al.* (2014), service quality is an important element for health and fitness managers, for them to make sound decision to increase and sustain their customer base and to gain a competitive advantage. In order to study the satisfaction of the members, Taylor and Baker (1994) quoted that satisfaction is superordinate to quality and that quality is one of the many potential service dimensions factored into customer satisfaction constructs (Baker and Crompton, 2000).

In the study of service quality, Robinson (1998) stated that increasing demands from consumers due to higher expectation have forced managers to focus on providing top notch customer service for their customers (Afthinos *et al.*, 2005). It is also known that superior service quality has lead to improved levels of customer loyalty and increase satisfaction of the customer with the services provided (Smith, Murray and Howat, 2014).

One of the pioneer researchers in the service quality industry, Parasuraman, Zeithaml and Berry (1988) had defined service quality as the global judgment or attitude related to the superiority of a service (Tsitskari, Antoniadis and Costa, 2014). According to Parasuraman *et al.* 1985, delivery of excellent service is a must for the survival and success of a service provider business entity. Service quality had been conceptualized as an evaluation of the members' perceived performance of service compared to the expectation that they held for the particular service. Thus, according to

Parasuraman, Zeithaml and Berry (1985) and Zeithaml *et al.* (1996), a higher level of service quality would lead to higher member satisfaction (Smith, JamesMurray, Duncan Howat, 2014). Majority researches on service quality from SERVQUAL (Parasuraman *et al.*, 1988) which is based on the gap model. However, even though there are extensive use of SERVQUAL model in many researches project across industry and evidenceof universal use of SERVQUAL, the outcome for the use of SERVQUAL does not explicitly justify the condition in health and fitness industry. It was mentioned that the service quality model proposed by Parasuraman *et al.* (1988) was too general, and there is an issue of generalizing the model (Lam Zhang and Jensen, 2005). There are also discussions by new researchers that Parasuraman model as well as the Zeithaml and Bitner (1996) models should not be applied to all services sector as they do not include the role of the customer in the service delivery(Lam, Zhang, and Jensen, 2005). According to Kim and Kim (1995), and Chelladurai and Chang (2000), customer role in service delivery is an important aspect of studying the service quality industry.This is due to the high interaction between the clients and service employees during the production and consumption of services (Tsitskari *et al.*, 2014)

For the past decades, many researchers have discussed and debated the type of conceptualization for service quality perception (Brady and Cronin, 2001). There are many research papers out there which supported the notion that conceptualization and measurement of service quality should be based on the type of services, and the dimension of the service quality are dependent on the service industry investigation (Clemes, Gan, and Ren, 2011).

Researchers have also contributed to the literature of service quality by proposing some other models based on different services background. A study by Gronroos (1982) had noted that quality of service perceived by the customer have two dimensions; outcome and process dimension (Powpaka, 1996). Gronroos (1984) had further proposed a process dimension which is also known as functional quality to better answer the question of how the customer gets the service and outcome dimension as technical quality to respond to the question of what the customer actually received.

Focusing on the health and fitness sector, there are studies that adopt and study on the service quality such as the tri-component of service quality model by Rust and Oliver (1994), three factor model of service quality by Brady and Cronin (2001) and four factor service quality expectations scale by Papadimitriou and Karteroliotis (2000) (Lam *et al.*, 2005). In 2004, Alexandris, Zahariadis, Tsorbatzoudis and Grouis (2004) also conceptualized their study based on the Brady and Cronin (2001) service quality model. The context of the service quality in the study comprised of three distinct dimensions: (1) the interaction quality which looks at the interpersonal interaction between patrons and staff; (2) the physical environment quality which focuses on the workout equipment and facility design; and (3) the outcome quality which study the customers and their evaluation of the results using the service (Alexandris *et al.*, 2004).

The measurement of service quality in sports service industry or more specifically in health and fitness industry is still a controversial issue, and research from Tsitkari (2006) has shown that sport-related literature of service is still in its formative stage (Tsitskari, Tsiotras and Tsiotras, 2006).

A brief background of the development of the fitness environment service measurement was formed based on the Parasuraman *et al.* (1985, 1988) SERVQUAL model which due to the lack of a particular culture and value plays in the evaluation, it has limited applicability to different industries (Alexandris *et al.*, 2004). Howat, Absher, Crilley, and Milne (1996) had then formulated the Center for Environment and Recreation Management-Customer Service Quality scale model with a total of 15 attributes to measure customers' expectation based on their perception at the macro level (Lam *et al.*, 2005). This instrument was proposed specifically for leisure centers. In 2004,

Alexandris and his fellow researchers conducted a study using the SERVQUAL measurement and concluded that the SERVQUAL model should not be used in the study of fitness industries as the structure does not have the extension of outcome quality. Their findings concluded that quality services may not be enough for the health club to retain their customers and due to lack of emphasis on the outcome quality, it could be one of the reasons for low retention rate (Alexandris et al., 2004). Alexandris had later tested the model proposed by Brady and Cronin (2001) which included outcome quality construct as this dimension was missing from the previous studies in the sports service quality literature (Alexandris *et al.*, 2004)

As there are very limited number of scales developed in the health and fitness setting, Lam *et al.* (2005) constructed six dimensions which were based on the review of limited literature in health and fitness industry. They proposed a service quality model that fits the three primary constructs model (Personnel, Program, and Facility) that had been derived from previous researches such as Rust and Oliver (1994), Brady and Cronin (2001), Parasuraman *et al.* (1988), Howat et al. (1999), Papadimitriou and Kateroliotis (2000) and Lam *et al.* (2005). In the six dimension constructs of service quality measurement for health and fitness industry which was developed based on the discussed models, novelty from Lam, Zhang and Jensen (2005) study was to include the program factor in the scale. According to Lam *et al.*, (2005), many generic service quality models, such as SERVQUAL, Brady and Cronin (2001) model, and Rust and Oliver (1994) model, all these models, do not have the program factor as these generic models were not designed specifically for the sports or health industry. Based on the study conducted by Lam *et al.* (2005), program factor is the major factor which affects customer reaction. Kim and Kim (1995) as well as Papadimitriou and Karteroliotis (2000) both proposed the program dimension in their study. The study by Howat *et al.* (1999) also proposed the program dimension which is known as peripheral, this dimension in Howat *et al.* (1999) study covers all the services and program provided by the sport and leisure centres (Lam *et al.*, 2005).

### ***Outcome Quality in Health and Fitness Industry***

Outcome quality was characterized by Gronroos (1984) as one of the two types of service interactions which are the technical quality and the functional quality. The Technical quality dimension is defined as the technical outcome of the process as a result of what the customer will receive from his interaction with the service provider. Conversely, the Functional quality is about the accessibility, the whole process of getting the service from the service provider such as the time spent waiting to receive the service, the impact of the atmosphere of the customer and service provider interaction, and more. According to Gronroos (1984), technical quality is a very subjective dimension which could not be evaluated as objectively as the functional.

In their attempt to further investigate the service outcome quality, Brady and Cronin (2001) found that the models proposed by Gronroos (1984) and Rust and Oliver (1994) models have only stated the outcome quality is what the customer left with when the service rendered. Also, they had further indicated that there are three sub-constructs for the outcome quality namely tangibles, waiting time, and the additional valance which captures the attributes that control the customer perception of the service to be bad or good (Brady and Cronin, 2001).

In the year 1996, Samart Powpaka had identified one quality construct based on the extented literature, a construct which is known as outcome quality. Samart Powpaka found that this outcome quality is a construct which is left out from the SERVQUAL service quality assessment. The result of Powpaka's (1996) study had proven that outcome quality is indeed a major determinant of the

overall service quality (Powpaka, 1996).

In later years, Alexandris *et al.* (2004) further validated Samart Powpaka's study and further tested the applicability of the simplified version of the model proposed by Brady and Cronin (2001). The result of their study proved that the last dimension (outcome quality) in Brady and Cronin (2001) service quality model to be an important aspect in the context of sports service, and it should be included in service quality evaluation studies.

To further understand the outcome dimension based on the Brady and Cronin (2001) study, there is a dimension which looks into the after effect for the members when the use of the particular service is finished. Consistent with Gronroos (1984) and Rust and Oliver (1994) models, in the case of health and fitness related studies, the outcome dimension, which is also known as a technical quality is related to the members' perception of the outcome of their exercise participation. According to Alexandris *et al.* (2004), this outcome is evaluated based on the presume expected benefit that the members will get to joining the health and fitness center such as improve health, reduce stress, improve physique appearance.

In another study of service quality measurement for a sports organization, Ko and Pastore (2007) conceptualized the outcome dimension of the service as what the participant received through experiences gained from the services. These gains include the physical and social benefits, and overall attitude toward the gains through the services. In their later study, Ko and Pastore proposed a four-dimension model which includes the program quality, interaction quality, outcome quality and physical environment to be the primary dimension to measure the service quality scale in recreation sports industry (Ko and Pastore, 2004; Ko and Pastore, 2007). In the discussion of the issue in service quality research, Ko and Pastore (2004) proposed a model of service quality incorporating the outcome quality that is defined by several dimensions namely, 1) physical change; 2) sociability; and 3) valence. In general, studies noted that most people who use sports services are seeking to improve their physical fitness and enjoyment (Chelladurai, 1998). To support this dimension, Ko and Pastore (2004) proposed that the consumers' experience of physical changes such as increased fitness level, the performance or skill level, should be considered as an experience of tangible benefit as proposed by Brady and Cronin (2001) model. Sociability is defined as the positive social experience resulting from the gratification feeling of the consumer mingling with other people who enjoy the same activities. In the recreation sports level, Ko and Pastore noted that this inter-client interaction is meaningful for the participants and significant enough to be considered as an outcome of their sports participation. Lastly, the valence refers to the consumer post consumption overall feedback of the services as an evaluation of whether the service provided a positive perception or negative overall perception of the aspect of the service experience (Brady and Cronin, 2001). Ko and Pastore (2004) conceptualized that this may be the sports consumer's post intangible evidence such as the psychological benefit that was also discussed in Alexandris *et al.* (2004) as the confidence, self-esteem and stress reduction.

At health and fitness centers, the enhancement of appearance and physique are typically the most significant outcome or goals for the members (Smith, JamesMurray, Duncan, Howat, 2014). The interaction between members, the staff and the fitness instructor are necessary to influence the experience encouraging members of the center to achieve their goal. Through the discussion of Smith *et al.* (2014), the service quality within a health and fitness centers is a complex consumption behavior compare to other services.

Appearance outcome was seen to be a significant value for the members of the health and fitness center to acquire. It is believed that the customers' presence and particularly their physique

appearance play an essential role in attaining key benefit and satisfaction (Smith *et al.*, 2014). According to Smith *et al.*, (2014), in the health and fitness industry, it was identified in the studies by Kilpatrick, Herbert and Bartholomew (2004) that most people who participate in exercise were attempting to achieve the appearance and weight loss goal. This was suggested that with the upward social comparison, more members of the society are influenced into comparing and work hard by any means to look the same as their role model. It was also argued in Smith *et al.*, (2014) that customers do look up to the staff and trainers of the health and fitness center achievement as their goal, which somehow these affection affects their perception that they will have fewer benefits and less satisfied if they are perceived by the staff or the trainers that they have ideal physiques in another way round. Thus, the Smith *et al.* (2014) study conceptualized physical comfort and adapted Alexandris *et al.* (2004) outcome mood in their study. The result has stated that although outcome quality is proven to be a mediator variable which mediates the staff interaction relationship with the members' satisfaction, however, the customer perception of their outcome does not mediate the relationship between physical environment quality and satisfaction.

### ***Perceived Service Quality and Overall Satisfaction***

In past research, there had been a lot of debate on satisfaction being the antecedent to the service quality or vice versa (Kouthouris and Alexandris, 2005; Murray and Howat, 2002; Smith *et al.*, 2014; Theodorakis, Howat, Ko, and Avourdiadou, 2014; Tsitskari *et al.*, 2014; White, 2010; Yu *et al.*, 2014). Even though there is conflicting evidence, the substantial literature tends to support satisfaction being the outcome of service quality (Kouthouris and Alexandris, 2005; Murray and Howat, 2002).

Satisfaction, as defined by Zeithaml, is a judgment on how the product or service feature creates the fulfillment consumption pleasure within the consumer. Alexandris *et al.*, (2004) further illustrated that the outcome of the interaction between service qualities creates a positive perception of the member's interaction with the process quality. However, as much as these variables being researched in a different industry setting, there are still limited attempts to investigate this relationship in the sports service industry (Alexandris *et al.*, 2004), let alone an investigation conducted in an Asia-Pacific country.

### ***Perceived Service Quality, Outcome Quality, and Overall Satisfaction***

Although past studies done in relation to the service quality in health and fitness industry vary in term of the service quality model used, it is evident that the service quality affects the satisfaction level of the customers (Alexandris *et al.*, 2004; Macintosh and Doherty, 2007; Smith *et al.*, 2014; Yu *et al.*, 2014).

In the study of Ganesh, Arnold and Reynolds (2000), it was stated that the justification to assess the service experience elements was beyond the usual traditional service quality measures. Looking at the complexity of the interaction between the customer and the staff, and the level of importance of the possible outcome of the members wish to achieve, the interaction of all these points are complex within the assessment of the members. As most of the members of the health and fitness center are probably motivated to join due to their wish to achieve a better and leaner body which would probably lead to the perception of having a healthy body, many members are putting the emphasis on the importance of the physical outcome. This physical outcome for the health and fitness members are attainable and affected by the service environment through interaction with the staff and the program activities available. With this perception of the physical change, the social

perception pressure further influence the ‘outcome’ that the members wish to attain from the process service itself, and ultimately the feeling of achievement from the outcome quality would affect their satisfaction and ongoing loyalty towards the center (Smith *et al.*, 2014).

Furthermore, according to Jayanti (1996), to attain the typical physical appearance goal among the members, staff and the physical environment plays a significant role in the attainment process. Looking at both the functional quality, the staff are directly involved in the members experience especially the trainers at the process level. Although physical attainment may be one of the important outcomes, there are also additional psychological outcomes from the participation in the physical activities. The study result is consistent with the findings of Alexandris *et al.* (2004). The psychological outcome is mostly link to improved self-esteem, a lightened mood, the feeling of empowerment, autonomy and reduced depression (Paluska and Schwenk, 2000; Frederick and Ryan, 1983; Alexandris *et al.*, 2004).

### Findings

#### *Conceptualization of this proposed study*

Based on the Lam, Zhang and Jensen (2005) measurement scale for health and fitness club, it is discussed that the measurement scale by Lam *et al.* (2005) is conceptualized based n the models proposed and tested in the different service industry as a whole. These models are consist of Brady and Cronin (201); Parasuraman *et al.* (1988); Rust and Oliver (1994); and also models for the sports and recreation industry (Chelladurai *et al.* 1987; Howat *et al.*, 1999; Kim and Kim 1995; Papadimitrious and Karteroliotis, 2000). Overall, the six constructs could be group under three major constructs based on the Rust and Oliver (1994) tri-component model, the three-factor model of service quality (Brady and Cronin, 2001), and SERVQUAL by Parasuraman *et al.* (1988).

Table 1: Summary of Service Quality Dimensions from different authors

Category	Gronroos (1984)	Dimension (Parasuraman <i>et al.</i> (1988)	Rust and Oliver (1994)	Howat <i>et al.</i> (1995)	Lam <i>et al.</i> (2005)	Ko and Pastore (2007)
<b>Personnel</b>	Functional	Reliability, Responsiveness, Assurance, Empathy	Customer-employee interaction	Staff knowledge and responsiveness	Staff	Interaction
<b>Program</b>				Activities ranges	Program	Program
				Child minding	Child Care	
<b>Facilities</b>			Service Environment	General Facility: Parking	Physical Facility,	Physical Environment
					Workout Facility,	
					Locker room	
<b>Outcome</b>	Technical		Technical quality			Outcome Quality

Based on Table 1, each of the service quality model dimension had been categorized into four dimension namely, Personnel, Program, Facilities and Outcome. In this study, the target aim of the research is to be conducted in the health and fitness industry. From the literature review, the model for this study would incorporate the construct of the independent variable adapted from Lam et al. (2005) service quality model. Each of the construct for the program and facility is spread into a smaller construct such as program, child care and physical facility, workout facility, and locker room. By having specific constructs, Lam *et al.* (2005) proposed that the managers of the health and fitness club would be able to use the mean of these constructs to identify the particular area of improvement (Lam *et al.*, 2005). The size factor model would enable the study to be conducted specifically to understand which variable construct affect the relationship towards the members satisfaction directly or indirectly and to which extend that outcome variable as mediator will affect the relationships.

However, based on the literature review and also the construct dimension as summarized in Table 1, the proposed service quality model for this study will include outcome quality as proven in Alexandris *et al.* (2004) and Ko and Pastore (2007) studies that outcome quality, known as what is left to the customer when the use of the service is finished. This technical quality is missing out from the measurement scale by Lam *et al.* (2005) as these are not considered as process quality determinants of the perceived service quality in health and fitness industry. Likewise, for outcome quality, the outcome quality construct as suggested by Ko and Pastore (2004), the physical change, sociability and valence are mostly discussed as the aftermath gains from the delivered service quality. However, as the setting for this proposed study is about health and fitness center which focus more on self work-out with the help of equipment or classes, the conceptual framework for this proposed study will focus on studying the effect of physical change, and valence constructs from Ko and Pastore (2004) study.

Based on the Donabedian (1992, 1997, 2005) model, the study supports the fact that outcome quality is a construct which comes from the interaction of the process service quality, with the satisfaction of attaining the goal as the result of interaction between the process quality (Smith *et al.*, 2014). In an attempt to reciprocate Alexandris *et al.* (2004) statement that service quality within health and fitness centres is more complex in terms of behavior consumption, thus this study proposed to look at the multidisciplinary perspective that will integrate the evidence of the variables within health and fitness centers and the health care quality model, where the process quality influence the outcome and, therefore, affects the overall satisfaction of the members.

### **Research Proposition**

Based on the literature review and finding discussion above, this study propose the next conceptual framework to further identify the relationship among the three variables, namely Perceived Service Quality, Outcome Quality, and Overall Satisfaction.

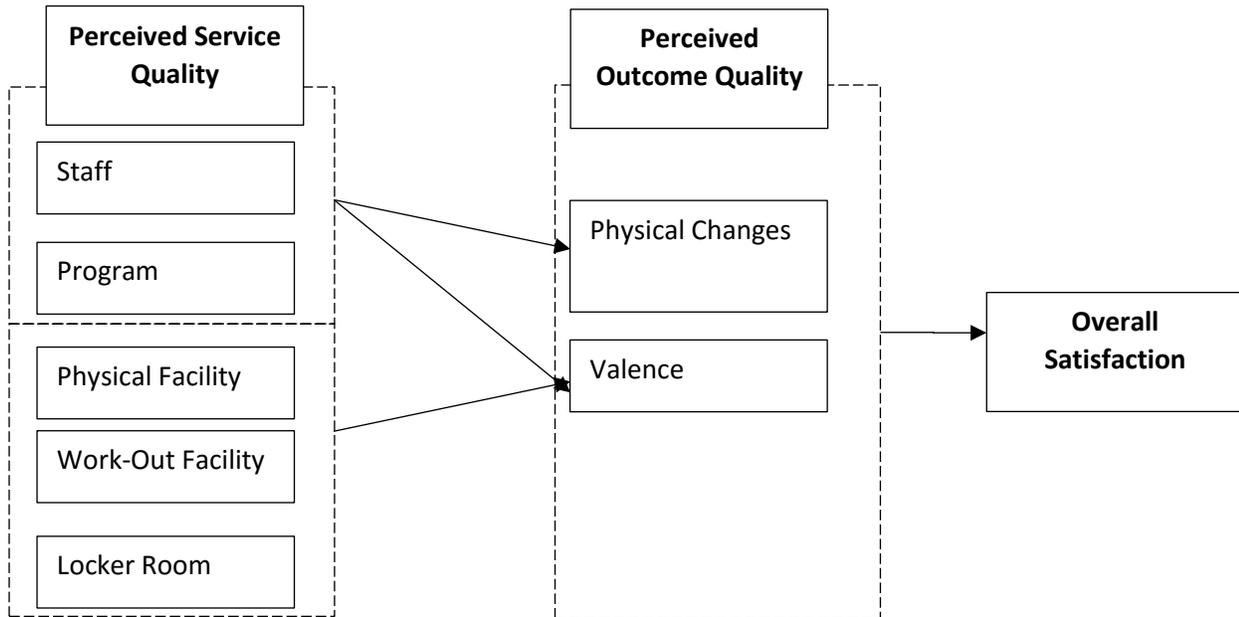


Figure 1: Proposed conceptual framework

According to Smith *et al.* (2014), the study found that in the process quality, only the staff has a positive relationship with the outcome quality of the members of the gym. Based on his study, the result has shown that environment does not affect the outcome quality. However, based on the Donabedian's model (1992), which shows the interaction of process quality leading to the attainment of outcome quality (Smith *et al.*, 2014), this paper advocates that physical facility, work-out facility and locker room being tangible product might not directly affect the physical outcome. However the accumulation of the experience to use would cause valence evaluation among the members. As such, the following proposition is proposed to this study.

*Proposition 1: Service quality will positively relate to outcome quality*

*Proposition 1.1a: Staff and Program will positively relate to physical change outcome*

*Proposition 1.1b: Staff and Program will positively relate to valence outcome*

*Proposition 1.2: Physical facility, Work-out facility, and Locker room will positively relate to valence outcome*

Irregardless of the result of previous researchs, many researchers have proven that service quality affects the satisfaction level of the consumer such as Kouthouris and Alexandris (2005) and Murray and Howat (2002). In a recent study of service quality and customer satisfaction among fitness center members aged 60 years and above, findings revealed that service quality had a direct effect on customer satisfaction (Yu *et al.*, 2014). In a study by (Macintosh and Doherty, 2007), findings revealed that part of the process quality, the members perception of the locker room, programs and equipment and workout facility are meaningful to their satisfaction with the club. Thus, the following proposition is proposed for the study:

*Proposition 2: Service quality will positively relate to overall satisfaction*

Currently, there is a lack of research conducted to further study the effect of outcome quality as a mediator variable. In a study by Smith *et al.* (2014), on the attainment of physical comfort and outcome quality in terms of physical contentment, his study found that the result support the notion of outcome quality of the customers mediate the relationship between process quality (staff and environment) and the satisfaction variable. Thus, this study offers the following proposition.

*Proposition 3: Outcome quality (Physical change and Valence) will positively relate to overall satisfaction*

*Proposition 4: Outcome quality (Physical change and Valence) will mediate service quality and overall satisfaction*

### **Research Design**

This study proposed a quantitative research design for data collection. The sample of health and fitness members are selected based on stratified random sampling. The questionnaire of this study will be distributed to most of the major health and fitness club having a primary business offering fitness classes, workout area, and equipment for fitness activities. The method of distribution is combination between online method and offline method which is to say email and traditional postal service. The unit analysis is by individual level, and it is further proposed that the survey for this study would be conducted as a self-administered survey.

## Conclusion

Given that the health and fitness industry in Malaysia is an emerging market as claimed by IHRSA (2013), the retention rate of the members of the industry is volatile and unstable. This paper aim to discuss the factors which affect the member's perception of service quality and their overall satisfaction.

From the review of literature in previous section, a discussion of the literature findings are provided followed by the development of future research framework. The proposed research framework is suggested to further identify the effect of service quality determinants towards the member satisfaction. The aim of this proposed research framework is also to study the relationship between the service quality and satisfaction mediates by outcome quality.

Based on the past research in health and fitness industry, currently, the research model of the service quality in health and fitness industry are not standardized. Thus, this paper aim to propose a research framework which would assist the players in the health and fitness industry to identify the exact factor and solve the issue of member's retention for future study.

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# Does Corporate Governance Mechanism Improve Shareholder Value? A Panel Analysis of Malaysian Listed Companies

**Mohd Yussoff Ibrahim\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*  
Email: myussoff.ibrahim@petronas.com.my

**Ayoib Che Ahmad**

*Universiti Utara Malaysia, Malaysia*

**Muhammad Anees Khan**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*\*Corresponding author*

## **Abstract**

**Purpose:** This empirical study focuses on investigating the influence of Corporate Governance (CG) mechanism on shareholder value. The construct of CG mechanism is formed by separate leadership, proportion of independent director, independent chairman and independence of nomination committee based on renowned agency theory.

**Design/methodology/approach:** The sample for this empirical study consists of 100 firms listed on Bursa Malaysia over the period 2010-14. The data regarding CG mechanism (separate leadership, proportion of independent director, independent chairman and independence of nomination committee) collected from the annual reports of the companies. While, we used earning per share as a proxy for shareholder value that is extracted from DataStream for the corresponding period (2010-2014).

**Findings:** The models analyzed by ordinary least squares (OLS), found significant positive relation between chairman independence and shareholder value measured by earning per share. The results further revealed that independence of nomination committee has a significant negative relationship with shareholder value while, firm total assets have a significant and positive impact on shareholder value (earning per share). However, separate leadership and proportion of independent director has no impact on shareholder value. However, separate leadership and proportion of independent director showed no significant relationship with shareholder value.

**Originality/value:** The results of the study has value for Malaysian government, policy makers, corporate boards, stock exchange, and shareholders by highlighting the distinct impact of corporate governance mechanism on shareholder value. The empirical result will also contribute to help in recommendation and improvement of Malaysian code of corporate governance (MCCG-2012) based on the extant and latest literature.

**Keywords:** Shareholder Value, Corporate Governance Mechanism, Ordinary Least Square

## **Introduction**

The beginning of the first decade of the 21st century was marked by several scandals, fraud and manipulating all kinds of information by big firms like Enron (2001) and WorldCom (2002) in the United States, HIH and OneTel in Australia, and Perwaja Steel, Technology Resources Industries (TRI), Transmile, Megan, Malaysian Airlines System (MAS), Port Klang Free Zone (PKFZ) in Malaysia (Norwani *et al.*, 2011, DeFond *et al.*, 2007, González and García-Meca, 2014).

These, scandals are established in the presence of misdeeds committed by director belonging to the large companies and normally supposed to be trustworthy person. These poor practices by directors and failure of big firms are considered an evidence of the failure of corporate governance.

The issues of firm shareholder value, increasing rapidly during the last two decades throughout the world and especially in developed countries like UK, USA and Australia etc. Similarly, with the opening up of free trade concept and liberalization, the concern for shareholder value also spread to the developing and emerging countries like Malaysia. Malaysia as an emerging market issued its own code on corporate governance in (2000, 2007, 2012), for the betterment of the firm overall performance and individual shareholder wealth. Nonetheless, Malaysian-listed companies have been subject to criticism concerning their role in improving shareholder value and firm performance in the Malaysian economy (PanAsian *et al.*, 2003, Wahab *et al.*, 2007). Moreover, the corporate governance mechanisms have been argued to affect the overall corporate performance (Chuanrommanee and Swierczek, 2007) and contribute to the improvement of shareholder value (Petra, 2007). The linkages between shareholder value and corporate governance mechanism is important because investors and creditors may wish to invest in firms with good corporate governance practices to reduce their costs of capital and to maximize their wealth (Ali Shah *et al.*, 2009).

It is suggested that for gaining higher shareholder value and maximizing the owner wealth, the importance of corporate governance cannot be ignored. Most studies in developed countries investigated the impact of corporate governance mechanisms on firm financial performance and found a very effective role of corporate governance attributes for improving firm financial health (Beekes and Brown, 2006). Keeping in view the problem of firm financial performance, corporate governance mechanism plays a vital role in maximizing firm financial performance (Balsam *et al.*, 2003).

The objective of this empirical paper is to analyze whether internal corporate governance mechanisms such as separate leadership, proportion of independent director, independent chairman and independence of nomination committee affect firm shareholder value. The underpinning theory for this study is agency theory because it can be used and applied in the area of value maximization and corporate governance mechanism (San Martin-Reyna and Duran-Encalada, 2012). Therefore, in this study, the monitoring role of separate leadership, proportion of independent director, independent chairman and independence of nomination committee are argued to reduce and constrain overall problems and maximize shareholder value and firm financial performance.

## **Literature Review**

### ***Shareholder Value***

Shareholder value is the value delivered to shareholders due to successful business operation and management's ability to grow earnings, dividends and share price (Stout, 2013). Shareholder primacy theory state that corporations were owned by their shareholders; that directors and executives should do what the company's owners/shareholders wanted them to do; and that what

shareholders generally wanted managers to do was to maximize “shareholder value,” measured by earning per share (Hillman and Keim, 2001).

Improving the shareholder value is of prime importance for the management of a company. The management must have the interests of shareholders in mind while making decisions. The higher the shareholder value, the better it is for the company and management. For this to happen, corporate governance mechanism is considered the most important devices for monitoring the firm financial performance and increasing the shareholder value (Shen and Chih, 2007).

Therefore, this study have focused on the impact of corporate governance mechanism (separate leadership, proportion of independent director, independent chairman, independence of nomination committee), as part of corporate governance mechanism, and relate them to corporate performance and shareholder value. Study conducted on the relationship of corporate governance mechanism yield mixed result for instance, empirical results indicate that separate leadership is positively related to the shareholder value but this finding is incongruent with most empirical studies in developing economies (Pfeffer, 1973). Similarly, proportion of independent directors is also positively related to shareholder value which support the finding and arguments of (Saleh *et al.*, 2005), that large proportion of independent directors have a positive relationship with firm performance while opposing the finding of (Benkel *et al.*, 2006). Empirical results shows that independent chairman plays a very positive role in shareholder value maximization and firm financial performance.

Finally, many studies suggest that nomination committee can affect the shareholder value negatively (Lang and Stulz, 1993). Hence shareholder value seen as a major concern by the investor, shareholders and stakeholder.

### ***Corporate Governance Mechanism***

Fama and Jensen (1983) and Jensen and Meckling, (1976) theorize that corporate governance mechanisms that are well practiced could benefit shareholders financially by exercising more control on the company’s management. Corporate governance (CG) broadly refers to the mechanisms, processes and relations by which corporations are controlled and directed. James Wolfensohn, President of the World Bank in his speech, “The governance of companies is more important for world economic growth than the government of countries”. Hence, corporate governance mechanism is the combination of internal directors of board, internal audit committee, structure of Aamir, and the external auditor. Corporate governance mechanism is very effective as a monitoring system (Gul *et al.*, 2003).

It is suggested that for gaining higher financial performance and shareholder value, the importance of corporate governance cannot be ignored. Studies in developed countries investigated the impact of corporate governance mechanisms on shareholder value and found a very effective role of corporate governance mechanism on shareholder value (Hillman and Keim, 2001). The overall condition and environment of corporate governance mechanism varies from firm to firm and from country to country (Farber, 2005). Due to different environment and condition of corporate governance standards, most of the countries, including Malaysia have laid down their own MCCG (2000, 2007 and 2012) corporate governance mechanism to look for suitable opportunities in order to maximize their shareholder value.

Empirically, it is widely accepted that governance practices increase a manager’s ability to work for maximization of shareholder wealth (Peasnell *et al.*, 2005; Jaggi *et al.*; 2009, Lo *et al.*, 2010). In order to restore the investor trust and confidence on stock market tight corporate governance

practices is utmost important for gaining the investor confidence and improving the firm financial performance.

After reviewing the literature I found a scarcity of research on EM in the Malaysia. A few studies exist based on previous old data of Malaysian listed companies with methodological and theoretical limitation such as neglecting the effect of mediation and moderation.

### ***Gap Identification***

I found a gap on the basis of methodology, data, sample size, recent business cases in Malaysia, type two agency theory and improvements which strengthens my motivation to conduct the study for fulfilling the research gap.

### ***Question/Objective***

The main question / objective of this study is to examine that “Is there any impact of corporate governance mechanism (separate leadership, proportion of independent director, independent chairman and independence of nomination committee) on shareholder value?”

### **Hypothesis Development**

#### ***Separate leadership and shareholder value***

Agency theory postulates that separation of decision and control functions of the board is an effective monitoring device of managers for better performance of firms (Fama and Jensen, 1983). Hence, agency theory is applicable to board leadership structure in relation to shareholder value (Daily and Dalton, 1997). By separation of leadership we mean, that chairman cannot perform dual role as a chairman as well as a chief executive officer (Shakir, 2009). Based on Malaysian Codes on Corporate Governance (MCCG, 2012), recommendation “The positions of chairman and CEO should be held by different individuals and the chairman must be a non- executive member of the board.”

Empirical findings showed mixed and inconclusive relationship between leadership structure and shareholder value (Dulewicz and Herbert, 2004; Weir and Laing, 2000; Weir *et al.*, 2002). For instance, Rechner and Dalton (1991) found that firms with the separate board leadership structure increase value and performance. Similarly in line with previous, separate leadership has a positive and significant relationship with shareholder value (Marn and Romuald, 2012, Bhagat and Bolton, 2008). But on the other hand, firms with separate leadership yield lower shareholder value (Dey *et al.*, 2011), and thus there is negative relationship between separate leadership and shareholder value (Ponnu, 2008). Furthermore, dual role of chairman has a negative impact on maximizing shareholder value and overall firm performance (Jackling and Johl, 2009; Yusoff and Alhaji, 2012). Whilst, in contrast to previous lines duality has no negative impact on shareholder value (Shukeri *et al.*, 2012)

Hence, upon reviewing the literature, it can be concluded that there is inconclusive, mix, and unclear empirical findings regarding the relationship between separate leadership and shareholder value which necessitate its further investigation. Therefore, based on agency theory, the author proposes and support further empirical investigation of the relationship between separate leadership and shareholder value through following hypotheses:

H1: Separate leadership has positive impact on shareholder value.

***Proportion of Independent director and shareholder value***

Agency theory advocate that, an independent board of director is more likely to be vigilant for agency problems and is dedicated to monitor management performance and behavior for maximizing the shareholder value (Fama and Jensen, 1983). Similarly, the Malaysian Codes on Corporate Governance (MCCG, 2000, 2007 and 2012) recommends “ensuring the value and effectiveness of independent director on the board of the company”. Research conducted on the relationship between proportion of independent director and shareholder value yield mixed and inconclusive results. For example, (PanAsian *et al.*, 2003), stated that if proportion of independent director on board increased then it will be more beneficial for firm agent principal problem and shareholder value. Thus, independent director is positively correlated with shareholder value of the firm (Rosenstein and Wyatt, 1990). Similarly, studies conducted in US, Australia, Europe and Pakistan also suggested the same positive correlation between independent director on the board and shareholder value (Ritchie, 2007). Furthermore, other empirical studies also support that for increasing overall firm value the director independence is utmost important and cannot be ignored (Peasnell *et al.*, 2005; Agrawal and Knoeber, 1996; Baysinger and Butler, 1985). Therefore, recent research shows a positive relation between independent director on the board and shareholder value (Coombes and Wong, 2004; González and García-Meca, 2014).

But on the other hand, (García Lara *et al.*, 2007), supported that independent director on the board have a negative impact on shareholder wealth. it is also argued that in many cases independent director on the board tend to be related to fraud which in turn reduce the shareholder value (Beasley, 1996). Similarly, another study also found a negative relation between board independence and shareholder’s wealth (Bhagat and Black, 2000; Linck *et al.*, 2008). While (Van Ees *et al.*, 2003), found no relation in between independent director on the board and shareholder value. At the end it can be argued that studies concerning the effect of independent directors on shareholders’ value come to no end. Hence based on agency theory and above inconclusive literature the author support and develop the following hypothesis:

H2: Independent director has a positive impact on shareholder value.

***Independent Chairman of the board and shareholder value***

The standard principal-agent model suppose that chairman independence is important for minimizing the agency problem which effect the overall performance and shareholder value of the firm (Fama, 1980). Similarly, based on the recommendation of Malaysian Codes on Corporate Governance (MCCG, 2012), “The positions of chairman and CEO should be held by different individuals and the chairman must be a non-executive member of the board”. There is always a positive response from stakeholders if a firm announce independent chairman of the boards (Balsam *et al.*, 2011b, Coles and Hesterly, 2000), because firms can be effectively monitor through an independent chairman of the board (Alkdai and Hanefah, 2012). Upon reviewing the literature some evidence support the hypothesis that independent chairman on board is improving shareholder value; some got the result that an independent board had a reversely impact on management performance and shareholder value, other evidence suggest there is no significant relation.

Thus, previous empirical finding about the relationship of independent chairman and shareholder value provide inconclusive and mixed result. For example, according to (Coles and Hesterly, 2000), agency problem will be a big issue in the absence of independent chairman of the board (Balsam *et al.*, 2011b). While, on the other hand, separate chairman of the board has less value in firm financial

performance and shareholder value (Jackling and Johl, 2009). Further added that outside independent chairman of the board is costly than that of its value creation (Balsam *et al.*, 2011a). Therefore, based on agency theory and inconclusive mix result we shall further try to explore the relation between independent chairman and shareholder value to see if our conclusion is consistent with any of the above results. Thus, based on the above discussion the author develops and support the following hypothesis:

H3: Independent chairman has a positive impact on shareholder value.

#### ***Independence of Nomination committee and Shareholder Value***

Overall, the customer citizenship behavior is an important source of gaining competitive advantage for the Agency theory suggests that the major function of a board is to monitor firm management. Nomination committees can play a vital role in enhancing board members independence and reducing the influence of management (Westphal and Zajac, 1995; Cotter and Silvester, 2003). Thus, nomination committee independence is more likely to be watchful for agent and principal conflict which in turn will increase the overall firm value. The Malaysian Codes on Corporate Governance (MCCG, 2000, 2007 and 2012) also highlight the importance, value and effectiveness of the nomination committee independence. Research conducted on the relation between nomination committee independence and shareholder value provided mixed and inconclusive results. For Example, there is a positive relationship between independence of nomination committee and shareholder value (Golden and Zajac, 2001; Shivdasani and Yermack, 1999). Similarly, independence of nomination committee will improve firm financial performance and shareholder value (Cotter and Silvester, 2003; Chhaochharia and Grinstein, 2009). But on the other hand there is a negative effect of nominating committee independence on shareholder value (Vafeas, 1999). Furthermore, (Beasley, 1996), also find the same negative correlation in between independence of nomination committee and shareholder value.

Hence upon reviewing the literature, we found different result some evidence support that nomination committee have an positive impact on shareholder value; some study postulating that independence of nomination committee have no significant impact on shareholder value while other got the result that an independent nomination committee on board had a reversely impact on the overall performance of the firm. Thus, the relation between nomination committee independence and shareholder value has been examined in numerous studies but provide a mixed result.

Accordingly, in keeping with our prior literature, we expect that if an independent director is a member of the nomination committee, this will have a positive impact on the shareholder value. Therefore, based on agency theory and previous mix empirical findings discussed above the author develop and support the following null hypothesis:

H4: Independence of nomination committee has a positive impact on shareholder value.

#### **Model Specification and tests**

$$EPS_{it} = \alpha + \beta_1 SEPLEDRSHIP_{it} + \beta_2 BODIND_{it} + \beta_3 CHAIRIND_{it} + \beta_4 NOMCOMMIND_{it} + \beta_5 FSIZ_{it} + \epsilon_{it}$$

Where:

EPS= Earnings per share,

SEPLEDRSHIP = Separate Leadership

BODIND= Board of director independence

CHAIRIND= Chairman Independence

NOMCOMMIND= Nomination Committee Independence  
 FSIZE= Firm Size

### Research Design and Data Analysis

#### *Data and sample*

This study uses quantitative methods to investigate the impact of internal corporate governance mechanism (separate leadership, proportion of independent director, independent chairman and independence of nomination committee) on shareholder value. The data for this study is extracted from the annual reports of one hundred (100) companies which is available on company's websites or through BURSA Malaysia website. The accounting data for shareholder value (Earning per share) is downloaded from DataStream as a proxy of earning per share. The data collected is for a 5-year period from year 2010 to the year ended 2014, with five hundred observations from four different sectors i.e. consumer, construction, technology and plantation. Financial institutions and insurance firms are excluded, as is common in this type of studies because of their particular accounting practices (González and García-Meca, 2014). The data will be analyzed through descriptive statistics, correlation and multiple regression for relationship and results interpretation.

#### *Empirical Results*

Table 1: Descriptive Statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Shareholder Value (EPS)	500	0.179	0.369	0	4.58
Separate Leadership	500	0.806	0.396	0	1
Board of director independence	500	46.186	13.049	0	100
Chairman independence	500	0.406	0.4916	0	1
Nomination committee independence	500	85.788	18.809	0	100
Size	500	1013682	2283966	0	1.86

Table 1, gives descriptive statistics for the dependent and explanatory variable. The mean value for dependent variable (earning per share) is 0.1785. The average of separate leadership in year is 0.806 time which is near the minimum requirement in Malaysia (Haniffa and Cooke, 2000; Coles *et al.*, 2001). About 46.136 percent of board of director are independent in the sample while on other hand the calculation shows chairman independence as 40.60. Similarly, on average the independence of nomination committee is calculated 85.788 percent of the sample.

Table 2: Correlation Results

Correlations						
	Earnings per share	Sep Leadrship	BOD Ind	Chairman Ind	NCI	Size
Earnings per share	1					
Separate leadership	.046	1				
Board of director independence	.143**	-.025	1			
Chairman independence	.125**	.358**	.007	1		

Nomination committee independence	-.013	.100*	.277**	.183**	1	
Size (Log of Assets)	.328**	.053	-.025	.329**	.050	1
** Correlation is significant at the 0.01 level (2-tailed).						
* Correlation is significant at the 0.05 level (2-tailed).						

The correlation coefficients are presented in Table 2, which indicate that there is no serious multicollinearity problem because none of the coefficient among the explanatory variable is more than 0.7. However, for observing the multicollinearity and heteroscedasticity problem in the data we employed variance inflation (VIF) tolerance levels and group wise heteroscedasticity tests through statistical package STATA 13.0. The results of sample firm data have no multicollinearity problem because the values are below the threshold level (Mean VIF=1.13).

But on the other hand the result indicated that there is heteroscedasticity problem lying in the data through (Breusch-Pagan/Cook-Weisberg test for heteroscedasticity:  $\text{Chi}^2(1) = 45.80$ ; Prob.  $> \text{chi}^2 = 0.000$  which was corrected with random effect robust model). This study is based on panel data for hypothesis testing, and ordinary least squares (OLS) regression method is used for results and interpretation. Thus, for the hypotheses testing H1-H4 we run the OLS model to reflect our earlier discussions regarding hypotheses developed.

Table 3: Ordinary Least Squares (OLS) Results

<b>Dependent Variable: Shareholder value (Earning per share)</b>	
Separate Leadership	-.023 (0.024)
Board Independence	0.003 (0.002)
Chairman Independence	0.067*** (0.036)
Nomination Committee Independence	-0.009*** (0.0005)
Firm Size	5.64*** (8.26)
Constant	.039*** (.101)
R-Square	0.1626
F	17.34
Prob.	0.000
Sample	100
Observations	500

Standard errors in parentheses \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Table 3, shows the results of ordinary least squares (OLS) regression. The analysis in Model revealed significant positive impact of chairman independence on shareholder value ( $\beta = 0.067$ ,  $p < 0.01$ ) which supports H3. In the Model, we test nomination committee independence with shareholder value and found significant but negative results ( $\beta = -0.009$ ,  $p < 0.01$ ), while firm size also showed a significant and positive result by indicating ( $\beta = 5.64$ ,  $p < 0.01$ ). However, separate leadership and proportion of independent director showed no significant relationship with

shareholder value. These results endorse that corporate governance practices in business increases share price and thus improve overall firm financial performance. These results support the statement of previous researchers (Vafeas, 1999; Hahn and Lasfer, 2007; De Miguel *et al.*, 2004). In hypotheses testing the effect of firm size is controlled and has statistical significant impact in the model which oppose the previous findings that firm's size has no impact on share price (Moeller *et al.*, 2004). However, the results indicate that the bigger size by market capitalization and firm's assets are producing valuable information that can increase firm's overall financial performance.

Table 4: Summary of all Hypotheses

	Significant level	Hypothesis	Results
Separate leadership		H 1	Rejected
Board of director independence		H 2	Rejected
Chairman independence	(***)	H 3	Accepted
Nomination committee independence	(***)	H 4	Accepted

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### Contribution

This paper reports empirical evidence of the effectiveness of corporate governance mechanism (separate leadership, proportion of independent director, independent chairman, and independence of nomination committee) on improving shareholder value in Malaysian listed firms over the period of five years from 2010 to 2014. In general, these findings suggest that firms with effective corporate governance mechanisms improve shareholder value and firm financial performance. Particularly, chairman independence and nomination committee independence are very much effective and significant to shareholder value. Overall, although not all corporate governance variables support the stated hypotheses; but this study has achieved its objective by identifying the attributes that answer the research question. Because, the sample companies reviewed in this study suggest that shareholder value in Malaysian listed companies are improving after following the proper road map of corporate governance structure. This study investigated that how a good corporate governance structure can influence firm financial performance and shareholder. Moreover, this empirical study produced the results of separate leadership, proportion of independent director, independent chairman and independence of nomination committee after regressing with shareholder value (earning per share). After empirical study it is cleared that no doubt corporate governance practices are utmost important for maximizing the share price and firm financial performance.

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# Improving Firm Financial Performance Through Corporate Governance Mechanism in Malaysian Listed Companies: Empirical Study Approach

**Muhammad Anees Khan\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Mohd Yussoff Ibrahim**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*\*Corresponding author*

## **Abstract**

**Purpose:** This paper analyzes the impact of corporate governance mechanism on firm financial performance for a sample of 100 firms listed on Bursa Malaysia over the period 2010-14. We postulate renowned agency theory and firm financial performance in relation to Corporate Governance (CG) mechanism. We estimate firm financial performance through share price.

**Design/methodology/approach:** The data regarding corporate governance attributes collected from the annual reports of the companies included in the sample. Financial data of the paper extracted from DataStream for the corresponding periods (2010-2014).

**Findings:** The models analyzed by ordinary least squares (OLS), found significant negative relation between audit committee independence and firm financial performance measured by share price. The results further revealed that crossholding ownership, and firm total assets have a significant and positive impact of firm financial performance (share price). However, board of director meeting and non-audit fee has no impact on firm financial performance (share price).

**Research limitations/implications:** The present paper has been focusing on non-financial companies with 100 sample size in Malaysian public listed companies.

**Originality/value** The empirical result will contribute to help in recommendation and improvement of Malaysian code of corporate governance (MCCG-2012). Moreover the results of this study will help board of directors, policy makers, Government, Security Commission of Malaysia and BURSA Malaysia for further improvements of the relevant policies and regulations in future. This study provides theoretical contributions to prove the essence of agency theory in Malaysia. This paper contributes to the extant and latest literature of corporate governance practices in emerging economies.

**Keywords:** Firm Financial Performance, Corporate Governance Mechanism, Cross holding ownership, Non-Audit service fee and audit committee independence

**Paper Type:** Empirical research paper

## **Introduction**

After the collapse of Enron (2001), WorldCom (2002) and recent financial and economic crises respectively, investors, stakeholders and shareholder lost their confidence which raised the issue of

firm financial performance and shareholder value. This issues of firm financial performance, increasing rapidly during the last two decades throughout the world and especially in developed countries like UK, US and Australia etc. Similarly, with the opening up of free trade concept and liberalization, the concern for firm financial performance also spread to the developing and emerging countries like Malaysia. Therefore, for increasing firm overall financial performance and share price, corporate governance mechanism should be properly developed and implemented.

Corporate governance mechanism is the combination of internal directors of board, internal audit committee, structure of ownership, and the external auditor. Corporate governance mechanism is very effective as a monitoring system (Gul *et al.*, 2003). Corporate governance mechanism enhance equity, transparency, firm overall performance and value of the stockholders (Dulewicz and Herbert, 2004). Corporate governance mechanism works as a monitor for improving the overall quality and standard of financial matters and thus maximize firm financial performance. Corporate governance mechanism also helps stakeholders in different decision making (Watts and Zimmerman, 1986). Therefore, based on literature corporate governance is an effective monitoring system for improving and sustaining the share price of the firm (Gul *et al.*, 2003).

Corporate governance continues to be an area of importance while firm financial performance is still appears to be a problematic issue. It is suggested that for gaining higher financial performance and maximizing the owner wealth, the importance of corporate governance cannot be ignored. Most studies in developed countries investigated the impact of corporate governance mechanisms on firm financial performance and found a very effective role of corporate governance attributes for improving firm financial health (Beekes and Brown, 2006). Keeping in view the problem of firm financial performance, corporate governance mechanism plays a vital role in maximizing firm financial performance (Balsam *et al.*, 2003).

The linkages between firm financial performance and corporate governance mechanism is important because investors and creditors may wish to invest in firms with good corporate governance practices to reduce their costs of capital and to maximize their wealth (Ali Shah *et al.*, 2009). Thus, corporate governance mechanism (internal and external audit) are effective monitoring devices for improving the overall performance of the firm (Hashim and Devi, 2007). Furthermore, regulators, academicians, and practitioners also consider that corporate governance enhances the economic health of listed corporations (Lo *et al.*, 2010). Hence, it is suggested that strong corporate governance helps in mitigating and reducing the problems, improving overall financial health and thus enhances firm value (Ali *et al.*, 2007).

The overall condition and environment of corporate governance mechanism varies from firm to firm and from country to country (Farber, 2005). Due to different environment and condition of corporate governance standards, most of the countries, including Malaysia have laid down their own MCGG (2000, 2007, and 2012) corporate governance mechanism to look for suitable opportunities in order to maximize their shareholder value.

The objective of this empirical paper is to analyze whether internal corporate governance mechanisms such as board of director meeting, audit committee independence, cross holder ownership and non-audit fee affect firm financial performance or not. The underpinning theory for this study is agency theory because it can be used and applied in the area of value maximization and corporate governance mechanism (San Martin-Reyna and Duran-Encalada, 2012). Therefore, in this study, the monitoring role of board of director meeting, audit committee independence, cross holder ownership and non-audit fee are argued to reduce and constrain overall problems and maximize firm financial performance.

## **Literature Review**

### ***Firm Financial Performance***

Firm financial performance is the output of a successful business operation in the shape of higher return on assets or return on equity. In simple words firm financial performance increase the earning, dividends and overall price of the share (Stout, 2013). According to the concept of shareholder primacy theory, every owner of the firm want to increase the share price which in turn positively affect the shareholder value and overall firm performance (Hillman and Keim, 2001) . The core objective of the management of any firm is to increase the firm financial performance which will increase the goodwill of the firm in the market. Increasing the firm financial performance is of prime importance for the management of a company. Firm management should always give preference to the stakeholder value while making any future decision (Shen and Chih, 2007).

Therefore, this study focus on the impact of corporate governance mechanism (board of director meeting, audit committee independence, cross holder ownership and non-audit fee) in relation to firm financial performance based on agency theory. Studies conducted on the relationship of corporate governance mechanism yield mixed result for instance, empirical results indicate that board of director meeting is positively related to the firm financial performance but this finding is incongruent with most empirical studies in developing economies (Pfeffer, 1973). Empirical result shows that cross holder ownership also plays a very positive role in maximizing firm financial performance. Finally, many studies suggest that audit committee independence can affect the firm financial performance negatively (Lang and Stulz, 1993). Hence, firm financial performance is seen as a major concern by the investor, shareholders and stakeholder.

### ***Corporate Governance Mechanism***

Corporate governance (CG) broadly refers to the mechanisms, processes and relations by which corporations are controlled and directed. James Wolfensohn, President of the World Bank in his speech, “The governance of companies is more important for world economic growth than the government of countries”. CG mechanism is an effective monitoring device for constraining illegal activities and improving firm financial performance (Hashimand Devi, 2007). The linkage between firm financial performance and corporate governance mechanism cannot be ignored due to intensive interest of shareholders, creditors and investor for investment and other future decision (Ali Shah *et al.*, 2009) . Corporate governance mechanism is like a monitoring system (Gul and Leung, 2004), which helps in improving the overall performance of the firm (Murphy and Zimmerman, 1993), and is linked with firm overall financial performance and shareholder value (Fama, 1980; Gul and Leung, 2004). Corporate governance most important function is to ensure the quality of the financial reporting process and thus increase the financial condition of the firm (Bebchuk *et al.*, 2009). Empirically, it is widely accepted that governance practices increase a manager’s ability to work for maximization of shareholder wealth (Peasnell *et al.*, 2005; Jaggi *et al.*, 2009; Lo *et al.*, 2010) . In order to restore the investor trust and confidence on stock market tight corporate governance practices is utmost important for gaining the investor confidence and improving the firm financial performance.

### ***Question/Objective***

The main question/objective of this study is to examine that “What is impact of corporate governance mechanism (board of director meeting, audit committee independence, cross holder ownership and non-audit fee) on firm financial performance?”

### **Hypothesis Development**

#### ***Board of director Meeting and Firm Financial Performance***

Agency theory postulates, board of director meeting leads towards reliable and complete discussion regarding an issue and its solution (Fama, 1980). The role of the board of directors is to monitor and discipline a firm’s management, thereby ensuring that managers pursue the interests of shareholders. Board of director meeting is viewed as important element in board characteristics that may have an effect on firm financial performance. The agency theory perspective also conceives that larger board meeting support effective monitoring and improving shareholder value (Singh and Harianto, 1989). Researcher find that if directors meet very rare than the there is a chance of mismanagement which in turn will affect firm financial performance. (Dâvila and Watkins, 2009). That is why, frequent meeting are more effective way for monitoring and improving firm financial performance (Yermack, 1996). It is argued that based on capability six to nine board of director meeting might be more effective for monitoring the actions and make timely financial and strategic decisions (Zahra and Pearce, 1989). Thus, board meeting has influence on management to increase firm financial performance and process information quickly, accurately and effectively, hence there is a positive association between board of director meetings and firm performance (Zahra *et al.*, 2000). In Hong Kong a study by, (Chen *et al.*, 2006) found a negative relation between board meeting and firm financial performance. In view of the mixed, unclear and insignificant results we therefore state our hypothesis as:

H1: Board meeting has no significant impact on firm financial performance.

#### ***Audit Committee independence and firm financial performance***

The standard principal-agent model suppose that audit committee independence is important for minimizing the agency problem which effect the overall performance and shareholder value of the firm (Fama, 1980). Similarly, based on the recommendation of Malaysian Codes on Corporate Governance (MCCG, 2012), “The positions of audit committee should be held by different independent individuals and the audit committee must be a non-executive member of the board”. There is always a positive response from stakeholders if a firm announce independent audit committee of the boards (Balsam *et al.*, 2003; Coles and Hesterly, 2000) because firms can be effectively and transparently monitor through an independent audit committee of the board (Alkdai and Hanefah, 2012).

Upon reviewing the literature and findings about the relationship of audit committee independence and firm financial performance provide inconclusive and mixed result. For example, according to Coles and Hesterly, (2000), agency problem will be a big issue in the absence of independent audit committee of the board (Linck *et al.*, 2008). Similarly, on the other hand, independent audit committee of the board has greater value in firm financial performance and shareholder value (Jackling and Johl, 2009). Further added that independent audit committee of the board is always making proper decision in order to uplift the overall financial situation of the firm and its value creation (Murphy and Zimmerman, 1993).

Research conducted on the relation between audit committee independence and firm financial performance provided mixed and inconclusive results. For Example, a positive correlation has

been reported between audit committee independence and firm financial performance (Balsam *et al.*, 2003; Golden and Zajac, 2001). Similarly, audit committee independence will improve firm financial performance and shareholder value (Vafeas, 1999; Chhaochharia and Grinstein, 2009). But in contrast it is suggested that independent audit committee has a negative relation with shareholder value (Vafeas, 1999). Furthermore, Beasley (1996), also find the same negative correlation between independence of nomination committee and shareholder value. Therefore, based on agency theory and inconclusive mixed result we shall further try to explore the relation between audit committee independence and firm financial performance to see if our conclusion is consistent with previous results. Thus, based on the above discussion following hypothesis is supported:

H2: Audit committee independent has a negative impact on firm financial performance

### ***Cross Holding ownership and Firm financial performance.***

A number of studies have sought to evaluate the link between crossholding ownership and firm financial performance but provides a mix, unclear and inconclusive results. For example, study find no significant association between cross holding ownership and firm financial performance (Syarikat and Pemilikan, 2010). Craswell *et al.* (1997) also find no significant result but on the other hand (Chen *et al.*, 2006) finds that institution with crossholding ownership have a positive and significant impact on firm financial performance. Furthermore Vein, Clay (2001), Han and Suk (1999) and Namazi and Kermani (2008) also found a positive and significant relation between cross holder ownership and firm financial performance.

Empirical findings showed mixed and inconclusive relationship between cross holder ownership and firm financial performance (Dulewicz and Herbert, 2004; Weir and Laing, 2000; McKnight and Weir, 2009). For instance, Rechner and Dalton (1991), suggested that through different ownership styles the firm overall performance and shareholder value can be increased. Similarly in line with previous, there is a positive correlation between cross holder ownership and firm financial performance (Bhagat and Bolton, 2008).

Hence, upon reviewing the literature, it can be concluded that there is inconclusive, mixed, and unclear empirical findings regarding the relationship between separate leadership and shareholder value which necessitate further investigation. Therefore, based on agency theory, the authors propose and support further empirical investigation of the relationship between separate leadership and shareholder value through the following hypotheses:

H3: Crossholding ownership has a positive association with firm financial performance.

### ***Non- Audit Fee and Firm financial performance***

Agency theory built the relationship between the manager (agent) and principal (owner) on the basis of company interest and wellbeing (Jensen and Meckling, 1979). External auditors are hired by the owner to yield accurate financial information regarding the overall financial and other considerable activities in the organization (Watts and Zimmerman, 1986). Hence, external audit is conducted to find out the flaws in financial statements of the firm, but if the external auditor hired is already a client of all other non-audit services than it can affect the independence of auditor. Similarly, attachment theory also postulates that if an external auditor giving services for audit activates as well as non-audit activates will influence the decisions and thus independence of the

external auditor. Hence, financial reporting can be biased which in turn will affect the firm financial performance. Thus non-audit fee of external auditor can impact the firm financial reporting and financial performance.

A mix type of result has been find by previous empirical studies about the impact of non-audit service fee on firm financial performance. Researcher argue that based on self-interest the external auditor may become more dependent on the client when considering future revenue and thus auditor independence is affected (Becker *et al.*, 1998; Abbott *et al.*, 2003). While on other hand there is no effect of non-audit fee on the firm financial performance (Arruñada, 2000; DeFond *et al.*, 2007). Other prior studies also report that there is no significant relationship between non-audit fees and firm financial performance (Chung *et al.*, 2002). Studies also reported a positive and significant relationship between non-audit fees and firm financial performance (Frankel *et al.*, 2002; Kinney *et al.*, 2004). Thus, based on agency theory, attachment theory and inconsistent empirical results reported in prior studies, the author strongly impose the following null hypothesis:

H4: Non-audit fee has a positive impact on firm financial management.

### Model Specification and tests

$$SP_{it} = \alpha + \beta_1 BODMEET_{it} + \beta_2 AUDTCOMMIND_{it} + \beta_3 CROSHOLDOWN_{it} + \beta_4 NONAUDTFEE_{it} + \beta_5 FSIZE_{it} + e_{it}$$

Where:

*SP*= Share Price,

*BODMEET*= Board of Director Meeting

*AUDTCOMMIND*= Audit Committee Independence

*CROSHOLDOWN*= Cross Holder Ownership

*NONAUDTFEE*= Non Audit Fee

*FSIZE*= Firm Size

### Research Design and Data Analysis

#### Data and sample

The study uses sample size comprises of 100 firms listed on Malaysia stock market (Bursa Malaysia), during the period 2010–2014. The study selects these firms for their relevance in Malaysian economy. Financial institutions and insurance firms are excluded, as is common in this type of studies because of their particular accounting practices (González and García-Meca, 2014). The accounting data on firm financial performance is secondary in nature and obtained from DATASTREAM database, while corporate governance mechanism data extracted directly from company's annual reports, which are available on their websites or through BURSA Malaysia website. The data will be analyzed through descriptive statistics, correlation, and multiple regression for relationship and results interpretation.

#### Empirical Results

Table 1. Descriptive Statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Share price	500	2.38	5.13	0.03	47.3
BOD Meeting	500	5.15	1.59	2	25

Audit Committee Independence	500	90.6	16.9	0	100
Cross holder Ownership	500	33.1	23.5	0	74
Non-Audit fee	500	3.06	2.06	0	6.38
Size	500	5.53	0.673	0	7.27

Table 1, gives descriptive statistics for the dependent and explanatory variable. The mean value for dependent variable (Share price) is 2.38. The average board of director meeting held in year is 5.15 time which is near the minimum requirement for the board of director meeting in Malaysia. About 90 percent of the sample firms audit committee directors are independent. On average cross holder owner hold 33 percent of common equity in sample firms while the non-audit fee average reached to 3 of the sample firms.

The correlation coefficients are presented in Table 2, which indicate that there is no serious multicollinearity problem because none of the coefficient among the explanatory variable is more than 0.7. However, for observing the multicollinearity and heteroscedasticity problem in the data we employed variance inflation (VIF) tolerance levels and group wise heteroscedasticity tests through statistical package STATA 13.0.

Table 2. Correlation Results

	Share price	BOD Meeting	ACIND	NAFee	CrsHold	Size
Share price	1	0.012	-0.016	0.071	0.200***	0.318***
BOD Meeting	0.012	1	-0.098**	-0.015	-0.031	-0.042
Audit Committee Independence	-0.016	-0.098**	1	-0.081*	0.013	0.142***
Cross holder Ownership	0.071	-0.015	-0.081*	1	-0.043	0.178***
Non-Audit fee	0.200***	-0.031	0.013	-0.043	1	0.105**
Size	0.318***	-0.042	0.142***	0.178***	0.105**	1

The results of sample firm data have no multicollinearity problem because the values are below the threshold level (Mean VIF=3.96). But on the other hand the result indicated that there is heteroscedasticity problem lying in the data through (Breusch-Pagan / Cook-Weisberg test for heteroscedasticity: Chi2 (1) = 92.27; Prob. > chi2 = 0.0001 which was corrected with random effect robust model). This study is based on panel data for hypothesis testing, and ordinary least squares (OLS) regression method is used for results and interpretation. Thus, for the hypotheses testing H1-H4 we run the OLS model to reflect our earlier discussions regarding hypotheses developed.

Table 3, shows the results of ordinary least squares (OLS) regression. The analysis in Model revealed non - significant impact of BOD on share price ( $\beta = 0.120$ ,  $p > 0.01$ ) which supports H1. While, there is a negative impact of audit committee independence on share price ( $\beta = -0.017$ ,  $p < 0.01$ ) which supports H2. In Model we test crossholding ownership and non-audit fee with share price and found significant and positive results respectively with figures ( $\beta = 0.0376$ ,  $p < 0.01$ ),  $\beta = 0.0518$ ,  $p < 0.05$ ) which also supported H3 and H4. These results endorse that corporate governance practices in business increases share price and thus improve overall firm financial

performance. These results support the statement of previous researchers (Vafeas, 1999; Hahn and Lasfer, 2007; De Miguel *et al.*, 2004). In hypotheses testing the effect of firm size is controlled and has statistical significant impact in the model. These results oppose the previous findings that firm's size has no impact on share price (Moeller *et al.*, 2004). However, the results indicate that the bigger size by market capitalization and firm's assets are producing valuable information that can increase firm's overall financial performance.

Table 3. Ordinary Least Squares (OLS) Results

<b>Dependent Variable: Firm Financial Performance (Share Price)</b>	
Board meetings	0.0635 (0.1202)
Audit Committee Independence	-0.0172* (0.0102)
Cross Holding Ownership	0.0376*** (0.0078)
Non Audit Fee	0.0518** (0.0932)
Firm Size	2.3282 (0.6823)
Constant	-10.734 (3.8100)
R-Square	0.1347
F	10.95
Prob.	0.000
Sample	100
Observations	500

Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.10

Table 4 shows the tabulation of all hypothesis with their results indicating acceptance or rejection of each hypothesis.

Table 4. Summary of all Hypothesis Results

	Main Model	Hypothesis	Hypothesis Status
Board of director meeting		H 1	Supported
Audit Committee Independence	(*)	H 2	Supported
Cross Holder Ownership	(***)	H 3	Supported
Non-Audit Fee	(**)	H 4	Supported

### Conclusions and Recommendations

The reports of sample companies reviewed in this study suggest that Malaysian listed companies are improving and following the road map of corporate governance structure. This study investigated that how a good corporate governance structure can influence firm financial performance and share price. Moreover, this empirical study produced the results of board meeting, audit committee independence, cross holding ownership, non-audit fee and firm size after regressing with share price (Firm financial performance). After empirical study it is cleared that no doubt corporate governance practices are utmost important for maximizing the share price and

firm financial performance. The significant result clear cut showed a very important role of the corporate governance attributes towards the financial health of the firm.

Similarly, the empirical result will contribute to help in recommendation and improvement of Malaysian code of corporate governance (MCCG-2012). Moreover the results of this study will help board of directors, policy makers, Government, Security Commission of Malaysia and BURSA Malaysia for further improvements of the relevant policies and regulations in future. This study provides theoretical contributions to prove the essence of agency theory in Malaysia, that firms should play its role in management through corporate governance practices. This paper contributes to the extant and latest literature of corporate governance practices in emerging economies.

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# Relationship between Leadership Styles and Affective Commitment among Employees in National Anti-Drugs Agency (NADA)

**Raemah Abdullah Hashim\***

*Open University Malaysia, Business School, Malaysia*

Email: raemah\_abdullahhashim@oum.edu.my

**Bushro Ahmad**

*Open University Malaysia, Business School, Malaysia*

Email: bushro@oum.edu.my

**Azahari Jamaludin**

*Faculty of Business and Finance,*

*Twintech International University College of Technology, Malaysia*

Email: drazahari.fbf@twintech.edu.my

*\*Corresponding author*

## **Abstract**

**Purpose:** The objective of this study is to investigate the relationship between different leadership styles, specifically Islamic, authentic and transformational leadership with affective commitment in National Anti-Drugs Agency (NADA).

**Design/Methodology/approach:** This study used quantitative research approach and a total of 373 completed samples were collected. The respondents were asked to evaluate their supervisors' leadership styles and their affective commitment towards the agency. Descriptive and regression analysis were conducted and the questionnaire was adapted from past studies.

**Findings:** The results revealed that all the leadership styles if analyzed individually have significant relationships with affective commitment. On the other hand, when multiple regression analyses were conducted to investigate the relationship of the overall three different leadership styles on commitment, the results indicated that the  $R^2$  and Beta values denoted a stronger relationship with affective commitment.

**Practical Implication:** This study suggests that if all the leadership styles of transformational, Islamic and authentic leadership were amalgamated the revelation of achieving higher employees' affective commitment will be realized. Thus, managers or leaders who are required to develop effective strategies and competencies should possess all the qualities of the transformational, Islamic and authentic that would benefit the organization in reducing employee turnover and improving customer satisfaction.

**Originality/value:** There is a growing aspiration among researchers to study on what types of leadership style that is most suited to public organization. This research thus, examines the leadership style that would help increase the affective commitment of its employee in order to accomplish the agency vision. There is limited empirical study in this domain.

**Keywords:** Leadership Style; Islamic Leadership; Authentic Leadership; Transformational leadership; Affective Commitment

**Paper Type:** Research Paper

### **Introduction**

The public sector now faces enormous challenges that demand structural changes and a paradigm shift to ensure it remains relevant and respected. Thus, Malaysia's Prime Minister, Datuk Seri Najib Razak, has introduced the Government Transformation Program (GTP) as a catalyst for transformation that demands public servants to change the ways of thinking and working in serving the country. Basically, there are seven key initiatives that have been identified and known as National Key Result Areas (NKRA). One of the NKRA is Reducing Crime under the Ministry of Home Affairs (MOHA). All respected agencies under the MOHA, including the National Anti-Drugs Agency (NADA) are made accountable to achieve the said NKRA (Pemandu, 2011).

Current study was conducted in NADA where 90% of the agency employees are Malays and Muslim with Islam as their official religion. Besides, there are about 78% of drug users and abusers originated from Malays ethnics which are also Muslim (NADA, 2014). National Anti-Drugs Agency (NADA) being a government agency under the Ministry of Home Affairs is headed by the Director General who is under the Administration and Diplomatic Officer scheme. The agency has 103 offices all over in Malaysia with its Headquarter based in Kajang, Selangor with the staff strength of about 6,616 (NADA, 2015).

Past studies have indicated that with strong leadership and commitment from its employee the organization's performance was increased. Therefore, there is a need for better strategic planning to be implemented with excellent leadership and commitment among the employees. Past studies had indicated the need for the excellent leaders to lead the agency. Can this strategic planning be done without excellent leaders and employees commitment? According to Joseph (2011), leadership is an influence relationship among leaders and followers who intend to make real changes and outcomes that reflect their shared purposes. On the other hand, Gaines, Worrall, Southerland, and Angell (2003) define leadership style as "actual leadership behavior and actions toward employees as opposed to innate qualities which a person might possess".

There are various leadership styles that can be exhibited by leaders in the organization, political, business or other arenas such as Islamic, Authentic and Transformational Leadership. Ali (2009) described Islamic leadership as generally base on the primary and secondary resources of *shariah* (Al-Qur'an and *Sunnah*) to ensuring essential elements such as cohesiveness, improved welfare of society, and smooth performance are important aspects of a leader's responsibility. Generally leadership style may refer to leader's style on how he gives direction, implementing plans, inspiring group and motivating people in his organization. Walumbwa (2008) focus his study on authentic leadership of which he describe as leader's process in drawing from both positive psychological capacities and a highly developed organizational context, which will resulted in both greater self-awareness and self-regulated positive behaviors between himself and his associates and thus fostering positive self-development. This kind of approach would definitely emphasize building the leader's acceptability through honest relationships with followers and will value their input that can build a stronger ethical foundation. Generally, authentic leaders are positive people with truthful self-concepts who promote openness. While it is important to define other popular leadership styles, transformational leadership is one leadership style that has been very popular in this century.

Nicolaides et al. (2014) refers it as a leadership approach that causes change in individuals and social systems. In its ideal form, it creates valuable and positive change in the followers with the end goal of developing followers into leaders.

Research has found that organizational commitment is important for the success of the organization. It is being defined as an employee's strong trust in and recognition of an organization's objective and beliefs, effort on behalf of the group to reach these areas objectives and strong desire to maintain membership in the organization (Hunt and Morgan, 1994). However, among the many commitments that an employee is obligated to is affective commitment. It is one type of organizational commitment that will create a positive interaction between the individual and the organization since both have similar values (Shore and Tetrick, 1991).

### **Problem Statement**

The National Anti-Drugs Agency (NADA) transformation program is formulated in accordance with the expectations of our stakeholders, in particular the Malaysian Government Transformation Program (GTP). The transformation program was discussed in detail among multiple government agencies, and in the case of National Anti-Drugs Agency (NADA) it will be the issue of leadership and commitment among the agency employees.

In Malaysia, the abuse of drugs is still the number one enemy of the country. It is a complex matter and has been a serious problem in this country. Illegal substance use and drug relapse is an issue that continues to plague societies worldwide. The number of registered drug users is about 300,000 in 2014 report, and is expected to reach half a million by 2025. There is also a worrying trend of high relapse rate of 50%, which has been consistently seen in the past decades. In addition, substance abuse is also one of the leading and most complicated health and social problems faced by this country. Unfortunately, after three decades of managing these problems, the outcomes are still far from reaching the set target. This could be due to several reasons. Firstly, treatment policy has been confined to a single treatment modality, which is the regimental rehabilitation programme. Secondly, the medical therapeutic approach has been totally ignored by this policy, despite strong evidence that addiction to drugs is a medical condition. Thirdly, it is the stigma of the illness and rehabilitation treatment itself, which has resulted in patients being hesitant of seeking early treatment.

Leadership is imperative to any organization. How to become an excellent leader? Are leaders born or nurture? Is National Anti-Drugs Agency (NADA) have committed and loyal employees to support the agency strategic planning? Therefore, NADA needs committed leaders that can lead and manage the organization excellently. According to Allen and Meyer (1990), commitment refers to the attitude of the leaders to their organization. Normally, the employees will commit if they are really satisfied with their present job and their leaders or managers. The satisfaction normally depends on what the employees can get or receive from the job. Furthermore, there is a growing demand for Islamic leadership style to be applied in organizations, especially in government organization like National Anti-Drugs Agency (NADA) but there is limited empirical study in this domain. The Islamic leadership model is belief to be able to offer a room of better than just excellence towards employee commitment.

Therefore, all the above issues demand for better strategic planning which will require excellent leadership styles such as Islamic Leadership, Authentic Leadership and Transformational Leadership to lead the organization. Now, the burning question is, can the strategic planning being developed and implemented without excellent leadership style and employee's commitment?

### Literature Reviews and Hypothesis

Based on literature reviews the proposed model is depicted in the following:

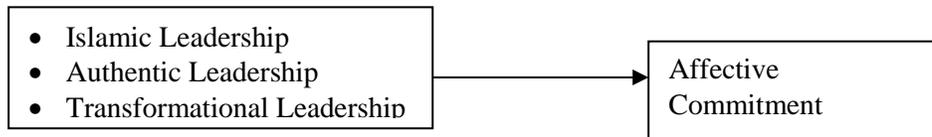


Figure 1: Leadership Styles and Affective Commitment

According to Arsenault (2004) and Mowday *et al.*, (1982) as cited by Swiggard (2011) defined employee commitment as the attachment of an individual's psychological and physiological being to the organization. There are three types of employee commitment; affective commitment, normative commitment, and continuance commitment (Meyer, Allen and Smith, 1993). Affective commitment is a situation in which individual is emotionally attached to the organization and enjoys working in the organization. Meanwhile continuance commitment refers to a trend in which employee engages in constant lines of action on the basis of the individual's awareness of the costs related with leaving the organization. Normative commitment refers to an ethical belief and responsibility to remain with the organization. Affective commitment was used because researchers wanted to measure how emotionally attached the employees with the organization when their leader practices the three Islamic leadership principles. According to Moten (2011) trustworthy is important to be developed by the leader in organization since when the employees have a high level of trust, their level of confidence that their leader will successfully guide the organization is high. Thus, it drives the leader to perform their duties well (Ali, 2009). For instance, the leader actively encouraging their employees to get involved in the decision making process in the organization (Balfour and Wechsler, 1960).

Affectively committed employees are seen to have a sense of belonging and identification that increases their involvement in the organization's goals, and their desire to remain with the organization (Meyer and Allen, 1991; Mowday *et al.*, 1982). Concerning qualifications of affective commitment Meyer and Allen (1997) noted that work experiences such as organizational rewards and supervisors' support have confirmed stronger associations with affective commitment than have structural features of the organization or personal characteristics of employees. Excellent leadership and affective commitment has positive relationship in working environment. Mohamad and Aminudin (2004) argued that managers who aspire to develop employees with characteristics of affective commitment, would, obviously, have to engage in a more serious approach in establishing a higher degree of Islamic leadership among their employees. It is also supported by Lok, Peter and Crawford (2004) that leadership styles is important organizational backgrounds of affective commitment. In addition, relationship between leadership practices and organizational commitment especially affective commitment in the fire services has been examined by William (2000) as well. The leader affects the employees through authorization rather than control strategies. Gradually employees develop and function as autonomous persons (Khurana *et al.*, 2004).

Leadership has been defined in various ways. Collating some of the predominant definitions, leadership was defined as having the capacity, will, or ability to get results from people by persuasion or influence for achieving a common purpose. Over the years, leadership paradigm is

continuously evolving, with concepts of the past being reanalyzed and new perspectives being introduced. Islamic leaders were known to have future orientations and are more likely to see the possibilities and will approach them with smart planning and a sense of accountability (Dent and Krefft, 2004). Unus (2005) on the other hand mentioned that an Islamic way of life revolves around preparation for the life in the hereafter. The al-Qur'ān tells us that those who ask for what is good in this world as well as in the hereafter will receive what is due to them in both worlds. Thus, from an Islamic viewpoint, leadership is seen from the perspective of the worldly mission that a Muslim has to fulfill. In other words, Islamic leaders are to work for the collective well-being of society through the propagation of all that is good (*Amr Bil Maroof*) and defeating all that is evil (*Nahi-Al-Munkar*). Authentic leaders on the other hand had gained a global consideration recently due to the challenges faced by conflicting stream of social pressure, which the outcome is more a self-entrapped in moral dilemmas (Novicevic *et al.*, 2006). Generally, authenticity is defined in leadership literatures as absence of self-deception, recognition of any short-comings, striving for the fulfilments of individual potentials, having self-awareness of purpose, taking full responsibilities for one's error, and being one's true self (Shamir and Eilam, 2005; Sparrowe, 2005; Avolio and Gardner, 2005; Ilies, Morgeson and Nahrgang 2005). The four constructs of authentic leadership, as identified by Walumbwa *et al.* (2008) research, are namely: self-awareness, relational transparency, internalized moral perspective and having balanced processing of information. Enacted in its authentic form, transformational leadership enhances the motivation, morale and performance of followers through various mechanisms. Transformational leadership defined as a leadership approach that causes change in individuals and social systems. In its ideal form, it creates valuable and positive change in the followers with the end goal of developing followers into leaders. These include connecting the follower's sense of identity and self to the mission and the collective identity of the organization; being a role model for followers that inspires them; challenging followers to take greater ownership for their work, and understanding the strengths and weaknesses of followers, so the leader can align followers with tasks that optimize their performance.

Norman (2006) stated that a trusting relationship between leaders and followers is one of the characteristic which differentiate mediocre organizations from the leading ones. Schoorman, Mayer, and Davis (2007) defined trust as a - willingness to be vulnerable to another party. Trust has been studied in different disciplines (organizational science, sociology, and psychology) and at different levels (individual, group, firm, and institutional) (Rousseau *et al.*, 1998). Across all these disciplines, the definition of trust includes the willingness to be vulnerable (Rousseau *et al.*). Avolio and Gardner (2005), Walumbwa *et al.* (2008), Avolio *et al.* (2004), and Eagly (2005) have all discussed relational authenticity or relational transparency, which reflects the fact that authentic leadership is opposite to impression management. (Avolio, 2005). While these two constructs are similar, Avolio and Gardner (2005) posit that relational transparency is more descriptive as it points to the transparent interaction between leaders and followers. Thus, relational authenticity or transparency is the construct that involves both leaders and followers as active agents of authentic relationships (Eagly, 2005; Avolio and Gardner, 2005). Under transformational leadership, there is generally a sense of purpose and family; leaders and followers share mutual interests and a sense of shared fates and interdependence (Bass and Avolio, 1994). Further, empirical results have verified the impact of transformational leaders' behaviors on followers' work attitudes such as organizational commitment (Dumdum *et al.*, 2002; Podsakoff *et al.*, 1990). It has been claimed that the instrument involved in generating the initial attitude of affective commitment includes

participation, shared values and identification (Meyer, Herscovitch and Topolnytsky, 2002). Meaning that, affective commitment develops when individuals become complicated in, recognize the value significance of or derive their identity according to an association with the entity or pursuit of a course of action (Meyer *et al.*, 2002). As such, transformational leaders are able to influence their followers' affective commitment by promoting higher levels of intrinsic value associated with goal accomplishment, emphasizing the linkages between their followers' efforts and goal achievement, as well as by creating a higher level of personal affective commitment on the part of the leader and followers to their common vision, mission, and organizational goal (Avolio *et al.*, 2004).

### **Hypotheses**

Based on the literatures, the following hypotheses have been suggested:

- H1: There is significant relationship between the Islamic, authentic and transformational leadership styles (overall leadership styles) and affective commitment among employees in National Anti-Drugs Agency (NADA);
- H2: There is a significant relationship between Islamic leadership and affective commitment among employees in National Anti-Drugs Agency (NADA);
- H3: There is a significant relationship between authentic leadership and affective commitment among employees in National Anti-Drugs Agency (NADA);
- H4: There is a significant relationship between transformational leadership and affective commitment among employees in National Anti-Drugs Agency (NADA);

### **Methodology and Research Design**

This section describes the overall technique and procedure used to collect data for this research. The researcher uses quantitative research for this study to investigate the relationship between the different types of leadership styles and affective commitment. The relevant units of analysis in this study focused on the employees of NADA in the Klang Valley offices. Their perception of their immediate supervisor of the agency were closely studied to identify their affective commitment. A quantitative cross sectional survey research was employed in this study. Approximately 400 questionnaires were distributed with a total of 373 responses. Overall the response rate is 93.25%. The response rate was excellent though 100% response rate is desirable. In this study, data were collected using a structured questionnaire which consisted of 62 items.

The survey instrument was comprised of five (5) sections. The first section measured demographics, second section measured self-reported Islamic leadership behaviours, third section measured Authentic Leadership behaviour, and fourth section indicated the transformational leadership behaviour and the fifth section required identifying affective commitment. The respondents were given one day to answer and return the questionnaire to the researcher by hand at the designated location. On average, it took 15 minutes to answer the questionnaire. Islamic Leadership was measured by using 12 items adapted from Khaliq (2013). 16 item scales for Authentic Leadership Assessment Questionnaire was adapted from Walumbwa (2008). Transformational leadership was measured using 21 items adapted from MLQ instrument by Bass and Avolio (1997). For affective commitment, Allen and Meyer (1997) instrument was adapted. The items from the scales were measured on a 5-Point Likert-type scale, anchored by 1, "strongly disagree" through to 5, "strongly agree."

The data collected indicated an excellent reliability as depicted in Table 1 below. The value Cronbach's alpha were higher than 0.8 was considered "acceptable" in most social science application. The value of 0.7 was considered generally as a minimum of Cronbach's alpha by researchers, although lower coefficients may be acceptable depending on research objectives (Hair, Babin, Money and Samouel, 2003).

Table 1: Overall Internal Reliability

Items	No of Items	Reliability (Cronbach's Alpha)
Islamic Leadership	12	0.852
Authentic Leadership	16	0.717
Transformational Leadership	21	0.864
Affective Commitment	8	0.816

To check on the content validity of the questionnaire, and to ensure accurate data to be collected two experts specialized in business management, human resource, and cultural issues research were invited to review and advise in the pre-test stage. Some revisions were made after getting the feedbacks in terms of questions clarity.

### Findings

This section presented the results of current study on the relationship between leadership style (Islamic, authentic and transformational leadership) and affective commitment among employees at NADA. The results are divided into two (2) sub-sections. The first sub-section displayed the demographic characteristics of respondents and the last sub-section explained the hypothesis testing.

### Respondents' Profile

A total of 373 respondents completed the questionnaires. Table 2 depicted the items of demographics involved such as genders, age, grade of services and working place. The sample indicates that male respondents represented a slightly higher percentage of total samples (57%) when compared to the female respondents (43%). The majority of the respondents were in Grade 17-38 (85 %) while 11 percent are in Grade 41- 54. A majority of the respondents were middle age between 41 to 50 years of age (48 %) followed by those between 31 to 40 years old (35%). About 8 percent of the employees were older than 50. With reference to the location of data collected, 47 percent are from headquarters and the rest were from Kuala Lumpur and Selangor branch (52%).

Table 2: Respondents Profile

Particulars	Variables	Frequency	Percent
Gender	Male	212	56.8
	Female	161	43.2
Age	Below 30	35	9.4
	31 – 40	132	35.4
	41-50	177	47.5
	51-60	29	7.8
Employment Grade	JUSA	3	0.8

	Grade 41 – 54	42	11.3
	Grade 17-38	317	85
	Grade 1- 16	11	2.9
Location	Headquarters	178	47.7
	Kuala Lumpur	93	24.9
	Selangor	102	27.3

### **Correlation Analysis**

To explore the relationship among the variables involved, correlation test was carried out using Pearson’s correlation matrix. The inter-correlations coefficients ( $r$ ) were calculated by the means of Pearson’s Product Moment. According to Cohen (1988),  $r$  ranging from 0.10 to 0.29 may be regarded as indicating a low degree of correlation,  $r=0.30$  to  $0.49$  may be regarded as indicating a moderate degree of correlation and  $r$  ranging from  $0.50$  to  $1.00$  may be regarded as a high degree of correlation. The relationships between Islamic leadership, Authentic Leadership, Transformational Leadership were investigated against affective commitment. Table 3 shows the summary of the results. The result indicates that there were low to moderately high degree of correlations between Islamic leadership, Authentic Leadership, Transformational Leadership and Overall Leadership Styles on affective commitment ranged from  $0.175$  to  $0.718$ .

Table 3: Summary of Pearson’s Correlation Matrix

Items	Islamic L	Authentic L	Transformational	Overall L/ Style
Islamic	1	.175**	.417**	.645**
Authentic		1	.309**	.558**
Transformational			1	.718**
Overall Leadership Style				1

\*\*\*Correlation is significant at the 0.01 level (2-tailed).

### **Hypothesis Testing**

Simple Linear regression (SLR) and Multiple Regression Analysis (MRA) were performed to examine the relationship of independent variables and dependent variables separately. Before the test was carried out, evaluation based on assumptions of normality, linearity and homoscedascity were performed. Visual observation of the box plot indicated no serious outliers’ problem at  $Z$  scores of  $\pm 3.29$  at  $p < 0.001$  probability level range. Given that there were no serious violations of the assumptions a multiple and simple linear regression analysis were appropriate to test the hypotheses.

Table 4 reveals that there are significant relationships between Islamic leadership (t value 3.54 at  $p < 0.001$ ), Authentic Leadership (t value 4.33 at  $p < 0.001$ ), Transformational Leadership (t value 5.40 at  $p < 0.001$ ) and Overall Leadership Style (t value 6.22 at  $p < 0.001$ ) on Affective Commitment. Therefore, based on these results, all the Hypotheses were supported. However, the strength of the relationship measured by the  $r$  value ranged from  $0.07$  to  $0.31$  at  $p$ -value of  $0.001$ , which are within  $r = 0.10$  to  $0.39$  ranges which are considered low (Cohen, 1988, 1992). The coefficient of determination measured by the adjusted R-square is found to be within the range of  $0.03$  to  $0.09$  (ranges from  $F=12.55$  to  $38.72$  at  $P < 0.001$ ). This indicates that all leadership styles help to explain

about 3 percent to 9 percent of the variance in NADA employees’ score on affective commitment. The Adjusted R-square for the overall leadership styles which is the amalgamation of the three leadership styles being the highest at 0.09 which means that the predictors account for 9% of the variation in the affective commitment. The beta values given in the Table 4 also indicates the amalgamated leadership of Islamic leadership, Authentic Leadership and Transformational Leadership (beta= 0.31) as a more important predictor of commitment.

Table 4: Summary of Regression Analysis

Variable	B	Std. Error	Beta	t	R	Adjusted R Square	F	Sig.
Islamic Leadership	0.23	0.06	0.18	3.54	0.18	0.03	12.55	0.00
Transformational L/ship	0.15	0.03	0.27	5.40	0.07	0.07	29.17	0.00
Authentic L/ship	0.29	0.07	0.22	4.33	0.22	0.05	18.75	0.00
Overall L/S	0.12	0.02	0.31	6.22	0.31	0.09	38.72	0.00

*Dependent Variable: Commitment*

### Discussion and Conclusion

It was found that the relationship between overall leadership style and affective commitment is significant. This result is in line with Lo (2009) study who concluded that leadership styles are able to encourage commitment among Malaysian employees in manufacturing industry. His argument was also supported by Walumbwa, Orwa, Wang, and Lawler (2005) study. The likely explanation is that amalgamation of all the leadership styles may be the ideal leadership style that will affect employees’ commitment towards the organization.

Current study also found that the relationship between Islamic leadership and affective commitment was to be significant. The outcome is in line with Kaneshiro (2008) study who verified that when the leader demonstrated organizational justice the outcome will be positive. They will be more loyal upon executing their responsibilities towards organization. Thus, this will probably drive the leaders to execute their duties more effectively (Ali, 2009). Another important item in Islamic leadership is honesty. By being so, moral values and ethics within the organization are stressed. Therefore, they will put more attention on the organization needs rather than their personal agenda (Khaliq Ahmad, 2009).

This study also found that the relationship between authentic leadership and affective commitment to be significant. This finding relates to NADA as a government organization where there is a real need for them to acquire a stable metaphysical and psychological self, for sustainability of the organization. Past researchers and practitioners are in agreement that authentic leaders, have certain qualities of self-awareness, self-regulations, positive modeling, ethical reasoning, relational transparency, and balanced processing capabilities. They lead their people through exhibition of their good principled and inner self, while possessing positive behaviors. This behavioral aspect is important especially when public organization like NADA is faced with ethical issues.

This study also found that the relationship between transformational leadership and affective commitment being significant. In other words, if commitment of employees were not emotionally attached to this organization, employees will not be motivated to make greater contribution to shape the organization’s vision. Generally, transformational leaders can inspire subordinates by modeling a vision that enhances employee’s confidence, motivation and expectations (Epitropaki and Martin, 2005). On the other hand, other related studies found that leader’s behavior have a moderating

influence on the frontline service employee's commitment to service quality (Elmadağ, Ellinger, and Franke, 2008). Committed employees are less likely to quit their job or be absent from work. Their motivation and citizenship behavior will lead to higher job performance. Moreover, committed employees are more likely to have long tenure and consequently gain more knowledge and experience to improve service quality which will result in higher customer satisfaction (Malhotra and Mukherjee, 2004).

This research is not without its limitations. Self-reported data collection methodology was employed to measure leadership style and affective commitment which can cause biases. Thus the outcome from this study cannot be generalized to other industry. It is recommended that future researchers should conduct longitudinal studies to establish causal relationship between study on other variables related to leadership styles and commitment. A nationwide survey is also recommended.

The research findings present valuable information for policy makers in National Anti-Drugs Agency (NADA) with regards to employee's job satisfaction, commitment to organization, and intention to stay in the organization. A significant finding for organizations to be noted is that affective commitment has a rather tenuous correlation to efficiency on the job. This is an important piece of information for researchers and organizations to find out further what are other variables that can assist in increasing employees' commitment. Past study by Judge, Thoresen, Bono, and Patton (2001) found that an only low correlation exists between leadership style and affective commitment. In short, the notion that "a blissful employee is a productive worker" should not be the foundation of any managerial decision-making. Other variable such as employees' personality may even be more important than leadership style with regards to performance (Bowling, 2007).

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# Measurement Development of Customer Patronage of Petrol Station with Convenience Store

**Yuli Kumala Sari\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

Email: yuli.kumala.sari25@gmail.com

**Zullina Hussain Shaari**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

Email: zullina\_shaari@petronas.com.my

**Amzairi Bin Amar**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

Email: amzairi\_amar@petronas.com.my

*\*Corresponding author*

## **Abstract**

**Purpose:** Studies on customers' patronage of petrol service stations and forecourt stores are often investigated separately as petrol retail and convenience retail. A very limited study examined both of them as a hybrid retail that combines a franchise and convenience retail structure. This paper reports a pilot study with aims to design a valid and reliable set of questionnaire based on general theory of customer patronage to study customer patronage of this hybrid retail conducted among 97 respondents.

**Design/methodology/approach:** A self-administered bi-lingual questionnaire consist of 47 items was designed based on previously proposed conceptual framework using an adopt-and-adapt method. The designed questionnaire was verified and tested on 97 randomly picked participants to get their responses. Then, the questionnaire was validated through a statistical analysis conducted in SPSS v22.

**Findings:** The analysis showed that the developed questionnaire is valid and reliable with Cronbach's alpha 0.914. Principal component analysis (PCA) revealed that the ordinal-type items can be reduced from initial 35 to only 24 items constructing the customer patronage of the hybrid retail.

**Research limitations/implications:** The developed and validated questionnaire can be utilized for further study to reveal the construct of customer patronage of the hybrid retail in Malaysia.

**Practical implications:** With increasing competition pressure, the questionnaire can be a tool to better understand customer expectation toward the hybrid retail and to help in decision making on marketing strategy.

**Originality/value:** Studies on customers' patronage of petrol service stations and forecourt stores are often investigated separately as petrol retail and convenience retail. A very limited study examined both of them as a hybrid retail that combines a franchise and convenience retail structure. This paper reports a pilot study with aims to design a valid and reliable set of questionnaire based

on general theory of customer patronage to study customer patronage of this hybrid retail conducted among 97 respondents.

**Keywords:** Questionnaire; reliability; validation; retail patronage; petrol station; convenience store

### **Introduction**

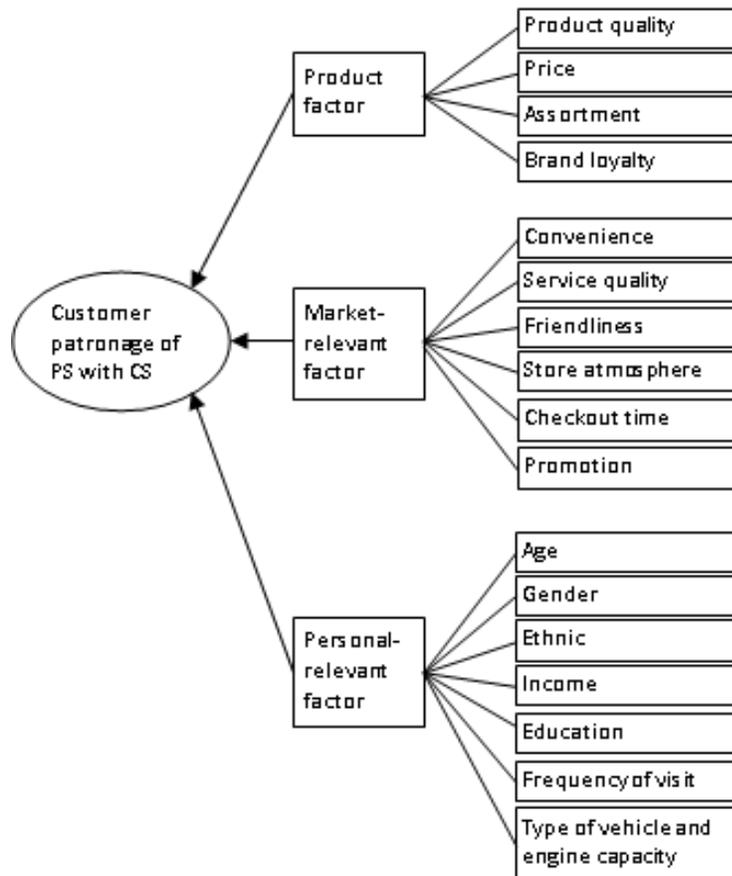
The retailing literature has contributed significantly to the understanding of retail patronage. Theories have been developed to provide better comprehension on how customers patronize certain retail outlets (Pan and Zinkhan, 2006; Sheth, 1983). Up to now, most studies in retailing have captured a number of research contexts such as general retail (Alan and Kabadayı, 2014; Tsiotsou, 2006; Low *et al.*, 2013; Moore and Carpenter, 2006; Gázquez-Abad *et al.*, 2015; Slood *et al.*, 2006; Demirci Orel and Kara, 2014; Kuo *et al.*, 2009; Chen and Hu, 2010; Pornpitakpan and Han, 2013; Saraswat *et al.*, 2010; Bauer *et al.*, 2012; Reimers, 2014; Amorim and Bashashi Saghezchi, 2014; Wu *et al.*, 2011; Newell *et al.*, 2011; Borges *et al.*, 2013; Ballantine *et al.*, 2010; Pan *et al.*, 2008; van Riel *et al.*, 2012; McGuire *et al.*, 2010; Huang *et al.*, 2014; Yoon Kin Tong *et al.*, 2012; Fullerton and Taylor, 2015; Carpenter and Moore, 2008; Luceri and Latusi, 2012; Moon *et al.*, 2008; Swimberghe *et al.*, 2009; Raajpoot *et al.*, 2008), franchise (Vieregge *et al.*, 2007; Oyewole, 2013), convenience store (Zairis and Evangelos, 2014; Heider and Moeller, 2012; Bianchi 2009; Sharma 2014), and petrol retail (Helgesen *et al.*, 2010; Azimont and Araujo, 2010; Denning and Freathy, 1996; Rachmawati, 2013). These contexts have varying business structure; thus, the findings appear to represent how customers patronize a retail outlet relevant to its particular retail structure.

A petrol service station with forecourt store represents a hybrid retail business which combines franchise and convenience store. Studies of franchise patronage mostly focuses on assortment (Caskey, 2006), service quality and demographic variable (Oyewole, 2013) and promotion (Bruce *et al.*, 2005). A review of franchising research states that theoretical underpinning of franchising research mainly focused on franchise structure, consumer exchange (i.e., price and promotion), and strategic intention (Chabowski *et al.*, 2011). Meanwhile, previous research on convenience store patronage emphasized only assortment, convenience, service quality, and demographic variable (Bianchi, 2009; Heider and Moeller, 2012; G. Zairis and Evangelos, 2014).

Though these two retail structure have similar factors that influence customer patronage, a very limited study has validated whether these factors remain similar or different when they are placed adjacent to each other as a hybrid retail structure. In other words, the area of patronage for hybrid retail: franchise and convenience store has not been explored. Thus, a research on customer patronage of petrol service stations with forecourt stores is important to be conducted to provide better understanding factors that influence customer patronage for a hybrid retail.

Based on the theory of retail patronage preference ((Reimers, 2014; Osman, 1993), a hybrid retail (franchise and convenience stores) patronage has been conceptualized and proposed (Kumala Sari *et al.*, 2015) for petrol stations with convenience stores (See Figure 1). A set of questionnaires has been developed and a pilot study has been conducted. The pilot study aims to develop and validate a set of questionnaire to assess retail patronage of petrol station (PS) with convenience store (CS) and reports the method, the results and discussions and the conclusion in the subsequent sections.

Figure 1. Proposed conceptual framework of customer patronage of PS with CS



## Methodology

### Population

Total of 97 participants aged between 18-60 years have taken part in the survey conducted for two months (August to September 2015). The participants were university students and employees who use motor vehicles daily. These participants were selected through a random sampling method. The protocol of the study was fully explained to all participants and they must provided written informed and agreement consent before completing the questionnaire. An exclusion criterion was incomplete responses to questionnaire items. In this case, there were 17 incomplete questionnaires that were excluded from the analysis.

### Design of questionnaire

A self-administered bi-lingual questionnaire was designed based on proposed conceptual framework (see Pan and Zinkhan, 2006; Sheth 1983) using an adopt-and-adapt method (Kumala Sari *et al.*, 2015). It consists of three parts: introduction, consent to participate and questionnaire. The introduction explains the purpose of the study. Consent to participate page is where the participant provides written informed and agreement consent. The questionnaire part consists of 47

items split into four sections. Section 1 is dedicated for participant's behavior towards fuel and non-fuel product purchasing in their most frequently visited petrol station and the convenience store, respectively. This section also asks about conditions of the PS and CS i.e. cleanliness, service functionality, operating hours, crew friendliness, and checkout time.

Items in Section 2 and 3 are focusing on product and market relevant factors towards the petrol station and its convenience store, respectively. The components of product-relevant factors includes product quality, price, and assortment while for market-relevant factors includes convenience, service quality, store image, and store atmosphere. These sections and part of section 1 (cleanliness and service functionality) use five- points of Likert scale from strongly disagree until strongly agree. Section 4 consists of demographic aspect of the participants i.e. age, gender, area of living, monthly income, race, and type of vehicles. Each factor is represented by one or more items in the questionnaire. Each factor score is the total score from the respected questions or statements score. The questionnaire was first tried among five randomly picked participants (undergraduate, postgraduate and employees) to ensure the clarity and minimize the ambiguity of questionnaire items. Based on first trial and discussion with the participants, minor changes were made on consent to participate page and comments box.

### *Statistical analysis*

Only 35 scalable ordinal type items were statistically analyzed from total 47 items. These items are named as item 1, item 2, item 3, item 35. All statistical analysis was performed using SPSS v22. The collected data were tested for the normality by considering the whole model which is represented by the total score of product relevant (PR) and market relevant (MR) factors (TOTALPRMR). The test was performed by both visual and numerical methods. Under visual method, normality test was conducted by observing the skewness, kurtosis, frequency distribution (histogram), boxplot and Q-Q plot (Ghasemi and Zahediasl, 2012). For numerical method, both Kolgomorov-Smirnov (K-S) and Shapiro-Wilk (S-W) tests were performed as additional indicators to justify the normality of the data.

Prior to normality test, two assumptions (monotonic relationship, no significant outliers) were first checked by creating scatter plot between each pair of items and the respective factor. The plot showed that there were monotonic relationship between each pair of items and no significant outliers were found. The normality test results showed that p-value for both K-S and S-W test is higher than 0.05. Visual inspection on the histogram, normal Q-Q plot and box plot also showed that the total score of PR and MR were approximately normally distributed with a skewness of 0.437 (standard error = 0.269) (Cramer and Howitt, 2004). Any outliers identified on the boxplot were removed.

Validity test was then performed via Kendall's tau-b analysis due to the non-interval scaled ordinal items. The test was performed for each factor (product and market relevant factor) constructing customer patronage of PS with CS as explained in (Abdi, 2007) with the respective questionnaire data for that factor. Kendall's tau analysis also provides rank on the strength of the variables constructing the factor which is represented by the correlation coefficient (Pallant, 2007). Friendliness and promotion factors were excluded from validity test as there was only one statement in the questionnaire belong to each of these two factors. Kendall's tau value,  $\tau_b > 0.5$  means that the item is strongly correlated with the factor. Hence, the role of the item as a constructor of the factor is valid. Kendall's tau values also represent the strength of the items constructing the factor (Cramer and Howitt, 2004). In this work, an inter-item correlation coefficient limit of 0.8 was

considered to detect two items that measured similar thing. An alpha of 0.01 was considered, below which the null hypotheses was accepted (significantly correlated).

Following the validity test, the reliability was examined by measuring Cronbach’s alpha value. A value of 0.8 is used as a limit above which the questionnaire is considered reliable (Field, 2003). After the validity and the reliability tests, principal component analysis (PCA) was performed. At this stage, the main aim is to reduce the number of items and to get initial pool of items that construct customer patronage (dependent variable). Rotation method called Promax was used since social science-related research, most of the factors or constructs are somehow related to each other. Forcing an assumption that the components are not correlated to each other as in Varimax rotation method may distort the findings (Matsunaga, 2010). Small kappa value of 2 was used to maximally distinguishable the resultant factors/components (Comrey and Lee, 2013). For an appropriate and good PCA, Bartlett’s test of sphericity should be significant ( $p < 0.05$ ) and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy index should be  $> 0.6$  (Pallant, 2007).

In item screening process, two criteria were used. First, the item is accepted if the factor loading  $> 0.4$ . It is to screen out items with weak relationship. A second criterion is to keep items if the primary and secondary factor loading has discrepancy  $\geq 0.3$ . This criterion is to overcome “cross-load” problem that will give difficulties in the analysis and enhances distinguishing ability between each pool of items (factors). The first criterion is different from the previous work. The changes is to eliminate conflict with the second criterion.

## Results and discussions

### Validity test

Kendall’s tau-b correlation test results were conducted and the result showed that there are medium to strong, positive correlation between all items with their respective factor, which is statistically significant ( $\tau_b > 0.3$ ,  $p < 0.01$ ). Then, it can be concluded that all of the items are a valid contributor to their respective factor.

In product quality factor, there are strong, positive inter-item correlation between item 1 and 2, which is statistically significant ( $\tau_b < 0.7$ ,  $p < 0.01$ ). It means that item 1 and 2 measured things which were quite similar. On the other hand, the correlation between item 3 with either item 1 and 2 showed weaker positive correlation and is statistically significant ( $\tau_b < 0.4$ ,  $p < 0.01$ ). It implied that item 3 measured thing that is quite unique from what is measured by either item 1 and 2. Correlation coefficient of each pair between these items with product quality factor reflects how strong each item affecting the factor. In this case, the rank order of items is item 1, item 2, and item 3.

Table 1. Items retained in each extracted factor  
 Extracted Component Based on Eigenvalues

	1	2	3	4	5	6	7	8	9	10	11
Item 12		.887									
Item 11		.862									
Item 4		.661				.361					
Item 32		.606									
Item 10		.832									
Item 9		.831									
Item 2		.800									
Item 1		.764									

Item 29	.853			
Item 27	.641			
Item 7	.577			
Item 35	.773			
Item 25	.755			
Item 22	.758			
Item 21	.689			
Item 16	.731			
Item 15	.713			
Item 34	.843			
Item 33	.822			
Item 24	.757			
Item 14	.347		.663	
Item 26			.615	
Item 19			.805	
Item 17			.843	

For price factor, the inter-items correlations are below 0.5, hence, these two items are quite unique one to another. For product selection factor, the inter-items correlation between item 7 and 8 are positive and are statistically significant ( $\tau_b > 0.5$ ,  $p < 0.01$ ). It means that these two items representing similar thing. For brand loyalty factor, there are strong, positive correlations between item 9 and 10 ( $\tau_b < 0.7$ ) and between item 11 and 12 ( $\tau_b > 0.7$ ), which were statistically significant ( $p < 0.01$ ). On the other hand, there is weak correlation between item 9 and 10 towards item 11 and 12 ( $\tau_b < 0.28$ ). It implied that brand loyalty factor has 2 components: loyalty toward PS and loyalty toward its CS. The correlation is also not statistically significant ( $p > 0.01$ ). It means that the relationship is due to random chance.

Since Kendall's tau-b ( $\tau_b$ ) coefficient between item 9 and 10 and between item 11 and 12 is  $> 0.7$ , these items were measuring similar thing. The rank order of items for this factor is item 12, 11, 10, 9. In other word, "loyalty towards CS" has greater influence in this factor than "loyalty towards PS".

In convenience factor, there are several pools of inter-item relationship, which are statistically significant ( $p < 0.01$ ). First pool is between item 13 and 14. Though item 13 (about petrol station) and item 14 (about convenience store) can be said measuring different thing, it has similarity that the two items measuring the response towards its operating hours. Second pool of items is the correlation between item 15 and 16. This pool of items can be thought as "easy access" item.

Three pools of inter-item relationship, which are statistically significant ( $p < 0.01$ ) also found in service quality factor. First pool is between item 21 and 22. These items can be thought as "cleanliness" item. Second pool is between item 23 and 24 which can be thought as a measurement of user friendliness and reliability of the petrol station. The last pool is about inter-item relationship from item 27 to 29. This pool is similar to the previous pool but toward the convenience store.

For store atmosphere factor, the two components have strong, positive correlation with the factor and are statistically significant ( $\tau_b > 0.5$ ,  $p = 0.01$ ). For fast checkout factors, the inter-items correlation are positive and are statistically significant ( $\tau_b > 0.5$ ,  $p < 0.01$ ). The result indicates that the two items measuring similar thing. Correlation between these two items toward fast checkout factor is strong and positive.

***Reliability test***

Cronbach's alpha reliability test was performed to check internal stability of the scale used in the questionnaire. The result shows that Cronbach's alpha for 35 items are 0.914, showing high reliability. Any item deletion will not increase the Cronbach's alpha value in this case. It means that item deletion is not required and all items can be retained.

***Principal component analysis (PCA)***

Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy index were calculated. The KMO value was 0.671 and the Bartlett's test was significant ( $p=0.000$ ). It indicated that the data set are appropriate for PCA.

Since PCA is under factor analysis family, PCA also extract latent variables with Eigenvalues  $>1$  which in this case, 11 components are extracted. Nevertheless, the main aim of PCA is for item screening or item reduction. Therefore, the focus is directed to the pattern matrix that provides factor loading of each item on the respective factor and structure matrix that shows the strength of correlation between item and the factor.

In pattern matrix, the item was screened based on two criteria explained previously. Based on these criteria, there are 11 items are deleted and 24 items remained. Prior to deletion, the correlations between these 11 items with the factor were checked using the structure matrix. The purpose of the checking is to try maintaining 3 items in each factor with highest correlation score. It is due to a preference to keep at least 3 items in each factor (Pallant, 2007). If among the 11 items there are items within 3 highest correlation score rank in a factor and if the item does not cause cross-loading problem, the item will be retained. Indeed, all of 11 deleted items were causing cross-loading problems, thus, cannot be retained. Item retained on each of the 11 components is presented in Table 1. In summary, 24 items are retained and all dimensions in product and market relevant factors are maintained except friendliness.

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# Development of Conceptual Key Factors Model for Safety Culture

**Shahid Ali\***

*Centre of Advanced Process Safety (CAPS), Chemical Engineering Department  
Universiti Teknologi PETRONAS, Malaysia  
Email: lacimek@gmail.com*

**Azmi Mohd Shariff**

*Centre of Advanced Process Safety (CAPS), Chemical Engineering Department  
Universiti Teknologi PETRONAS, Malaysia  
Email: azmish@petronas.com.my*

*\*Corresponding Author*

## **Abstract**

**Purpose:** Over the past three decades lots of efforts are focused on discovering what safety culture is and what key factors make up a safety culture. However, with regards to selection of factors, there is still no consensus reached and no definitive set of factors exists. For this purpose a conceptual factors model of safety culture and a multi-criteria decision based matrix are developed for the selection of key factors.

**Design/Methodology/Approach:** A conceptual key factors model and its different aspects are identified using systematic literature review. Analytical Hierarchy Process (AHP) method is used to construct an AHP-based hierarchal model from the factors model. Finally, an AHP-based decision matrix can be used for prioritizing key factors of safety culture.

**Findings:** Findings from this study are a conceptual key factors model of safety culture, and an AHP based decision matrix for prioritizing key factors utilizing SMART criteria.

**Practical implications:** Findings of this study will help to simplify the selection process of the key factors for safety culture. Utilizing the SMART criteria, this model will help organizations to identify the most representative set of factors according to their specific use.

**Originality/Value:** Up-to-date none of studies has been reported on the development of factors model for safety culture and the use of AHP for selection of key factors.

**Keywords:** Safety Culture; Safety Management System, Analytical Hierarchy Process (AHP); Decision matrix

## **Introduction**

Safety culture emerged from the analysis of the 1986 Chernobyl nuclear power plant accident, where the term “safety culture” gained its first official use in an initial report into the Chernobyl accident (IAEA, 1986). The main purpose of the report was to introduce a concept to look beyond the immediate active failures by examining more deeply into the underlying factors of accidents (Yule, 2003).

Safety culture is important because it forms the context within which individual safety attitudes develop and persist and safety behaviors are promoted (Mearns, 2003). Safety culture has been defined in many ways with different hypothetical constructs, research paradigms and represents interpretations of different finding which are most of the times very global and therefore highly implicit. Most definitions of safety culture invoke shared norms or attitudes so that the level of aggregation is considered to be the group. The most explicit definition of safety culture outlining most of the assumed contents is by HSE (2005) as:

*“Organizations with positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety, and by the confidence in the efficacy of preventive measures”*(HSE, 2005).

Safety culture reflects a component of the organizational culture that refers to the individuals or peoples, jobs or processes, and characteristics that affect employees' health and safety. The aim of a positive safety culture is to create an environment in which employee values safety and does efforts to improve it. They are aware of the risks in their workplace, continually control them, and avoid taking any unsafe actions. Thus, safety culture can be considered an important tool helping manage individuals' beliefs, attitudes, and behaviors with regard to safety in an organization.

In order to identify what factors or key dimensions make up a safety culture it involves selection and identification process. The selection and identification process is the most crucial step in a sense that it provides a basic foundation on which the whole proceeding steps of safety culture are dependent, i.e., safety culture assessment, identification of deficiencies and gaps in the process, designing and suggesting improvement strategies, and implementation and monitoring of strategies. In a meta-analytic study done by Flin (2000), conducted an analysis, he analyzed 18 studies and came out with the five most common themes, that are, work pressure, management/supervision, risk, competence and safety system. Similarly, Seo (2004), suggested that there are five main factors of safety culture, co-worker safety support, management commitment to safety, supervisor's safety support, competence level of employees with regard to safety and finally employee participation in safety-related decision making and activities. While in meta-analytic study by Clarke (2006), analyzed 16 studies and performed factor analysis and extracted the dominant themes common across the studies and he ended up with five main categories, i.e. Work task/work environment, Management attitude, Management actions, individual responsibility and involvement, and lastly safety management system.

A literature review of 10 studies conducted by Wiegmann (2004), identified five indicators of safety culture namely, reporting system, management involvement, rewarded system, employee empowerment, and organizational commitment. Farrington (2005), after reviewing 15 studies, identified reporting system, management commitment, immediate supervisors and supervisor subordinate relationships, involvement, competency, training, attitude, behavior rules, procedures and communication were the common factors. A report prepared for the Health and Safety Executive, 2005 (HSE) identified two-way communication, leadership, involvement of staff, existence of learning culture and existence of just culture as five core dimensions. Table.1 provides the names of the factors identified for every review paper.

The above studies shows that the common element identified in all reviews, and therefore in all reviewed papers, was leadership and its different aspects (management attitudes and actions, commitment, involvement, supervisory support and relationship). The second most common element was employee involvement/empowerment. Four out of six review studies identified it as common to most of the research papers they reviewed.

The identification of factors depends highly on the different type of methodological facets, different analysis tools i.e. Confirmatory Factor Analysis (CFA), Principal Component Analysis (PCA) (Guldenmund, 2000), on sample size and composition (Seo *et al.*, 2004), strictly depends on environment i.e., type of industry, country of origin (Clarke, 2006), and the labelling of factors (Guldenmund, 2000). The above stated studies shows that such type of dependencies has resulted in a considerable number of disparities in selection of factors in different studies and are probably the reason different studies fail to confirm factor structures of previous studies and has created a very little consensus on a definitive set of safety factors (Frazier, 2013), (Tomlinson *et al.*, 2012), (Guldenmund, 2000). In addition when it comes to the selection of most representative factors there is no such comprehensive criteria followed to select the most representative factors.

With this drawback, it calls for a simplified process for developing a factor model for safety culture and selection of key factors. The primary goal of the study is to develop a conceptual factors model and demonstrate the application of an AHP-based method for selection of key factors of safety culture using SMART criteria.

### **Conceptual factors model of safety culture**

In order to synthesize a factors model we take into account a systematic multiple indicator approach to reviewing the literature (Denyer, 2009). This process for generating items involved successive stages. First we selected validated studies, review and meta-analytic studies that were published in re-known indexed journals and were related to safety culture and safety climate. This process provided a set of candidate factors. Then, the candidate factors are put together in new way by distributing them/ under relevant dimensions to which they relate. The resultant of this process is a factor model that has four main dimensions of safety culture: Safety Management System, Leadership and Management, System and Structure and Personnel Factors.

The factors within each group have interactive nature and factor in one group can influence a factor in the others. The dimensions and factors of the proposed model are discussed below.

#### ***Safety Management System (SMS)***

SMS is set of integrated mechanisms and involve strategies that managers use to manage safety in the organization designed to control the risks that may affect employees' health and safety (Flin, 2000). SMS can improve the measurement of an overall safety culture if it is well-organized and defined (Cooper, 2004; Bottani, 2009) Research can be found on the contents of the management system (Grote, 2000, McDonald, 2000; Jaime, 2002) and also on its importance (Hale, 1997). The following is the description of the factors for SMS.

*Safety Policy:* Accountability for conducting safety operation by ensuring that controls are both functional and effective at preventing and mitigating the impacts of high consequence, low probability process safety events.

*Process Safety Training:* As one of the fundamental methods for improving safety training provides the knowledge humans need in order to carry out the safety critical tasks and provides the ability to undertake responsibilities and to perform activities to a recognized standard on a regular basis.

*Adequate Operating Procedures.* Written step-by-step instructions and associated information (cautions, notes, warnings) that describe how to safely perform a task.

*Safety Communication.* Communication of safety information to the workforce provides good (clear, concise, relevant) written materials (safety bulletins, posters, guidance) and briefings on current issues day to day and in formal safety meetings; listening and feedback. Often companies

are good at cascading information from management downwards but less effective in establishing two way communication (Gadd, 2002).

*Audits and Inspections.* A systematic, independent review to determine the status and effectiveness of safety management efforts versus goals and also the progress toward those goals. A continuous improvement system is based heavily on safety audits and inspections.

*Preventive Planning and Emergency planning.* Preventive planning identifies the possible hazards in the process environment, analyzes the risk of them occurring, and proposes precautionary measures to prevent accidents and losses. Emergency planning involves organizing the set of human and material resources required to respond rapidly and effectively in the event of any emergency, limiting its potential consequences as far as possible.

*Regulatory Compliance.* Sets of prescribed government regulatory requirements, specific tests and parameters such as, occupational injuries or illnesses or environmental releases, be tracked and reported to regulatory agencies and the public. Task or safety compliance behavior, describes the core safety activities that need to be carried out by individuals to maintain workplace safety (Neal., 2002).

*Rewards and Recognitions.* Employee reward programs such as, compensation or bonuses to reinforce a commitment to safety or process safety performance.

*Employee Engagement.* Staff at different levels in the organization identifies hazards, suggest control measures, provide feedback, and feel they 'own' safety procedures, and while completing job tasks acting to optimize the safety of other employees.

*Safety Meetings/Committee.* Safety issues and concerns are discussed and recent incidents and injuries are reviewed. Committee can help share the responsibilities of implementing and monitoring the Safety Program.

### ***Leadership and Management***

Leaders establish the safety values and develop and implement safety policies and enforce accountability. The research indicated that different levels of management may influence health and safety in different ways, for example managers through communication and supervisors by how fairly they interact with workers. Number of studies has shown Safety leadership has a strong impact on safety culture and safety performance (Conchie et al., 2011; Kapp, 2012; Wu, et al., 2011; Zohar, 2002). The sub-factors of leadership and Management are being described as.

*Management commitment.* Management must set the process safety "tone" at the top of the organization and consistently communicate the importance of safety, consideration of employee safety, and care for employees. Aspects of management include perceptions of management attitudes and behaviors in terms of safety and production, along with other issues such as discipline and selection (Gadd., 2002). On the ground floor managers in the organization must visibly demonstrate their commitment toward safety as well as their support for safety in visible behaviors.

*Adequate Supervision.* Supervision for the monitoring the operating process, the maintenance and reliability systems, process safety performance and craft personnel.

*Safety prioritization.* Management give priority to safety over work pace and work load factors. Excessive workload of managers can also affect safety. Studies on perceptions of the priority of production over safety has concluded that pressure to put production before safety was perceived to come from management rather than peers or safety representatives (Lee, 2000).

*Blame Culture.* People suffer penalties, sanctions or reprisals when they make mistakes regardless of the causes and circumstances. Employees get blamed for any incident by management without

investigating the overall situation.

**System and Structure**

System and structure includes that all the safety systems are well functional, have sufficient resources and consists of quality instructions (Guldenmund, 2000). Top managers must demonstrate their commitment in their allocation of resources, including the time spent on efforts to improve safety. People at the working level have the adequate resources (technical and human) to solve problems without disrupting overall functionality (Cláudio *et al.*, 2014).

*Functioning of Safety System.* All safety-related devices are regularly maintained and there is an adequate alarm system within the enterprise as well as an external alarm for people.

*Human Resources.* Availability of sufficient workforce is ensured in order to ensure that time pressure does not compromise quality in safety-critical tasks

*Material Resources.* Availability of sufficient material resources (tools, instruments) is appropriate and up to date.



Figure 1: Factors model of Safety Culture

**Personnel Factors**

The organizational activities or jobs related activities forms a critical preconditions for safety (Teemu Reiman, 2010). These activities are managed by personnel and is critically influenced by the structural and personnel issues in the organization, and in turn influence personnel. Numerous studies has suggested some of the personnel factors to improve safety culture (Beck, 2004; Frazier *et al.*, 2013), It can be categorized into the following factors.

*Risky Behavior.* Employee engaging in unsafe behavior, performing duties incorrectly and breaking safety rules or sometimes the seniors encourages employees to overlook hazards to get

the job done.

*Incident Reporting and Investigation.* The extent to which there is an open atmosphere concerning reporting of process safety incidents. Consistent reporting, prompt and thorough investigation into incidents leads to a decrease in incidents. The extent to which there is an open atmosphere concerning reporting of safety incidents.

*Risk awareness.* Employee perception of risk at work. The personnel are proactively informed about the overall safety level and current challenges on a regular basis and fully understand the potential hazards of their jobs.

*Personal Responsibility.* Personal responsibility means workers are accountable for their own safety, and management is accountable for reducing their workers' risky behavior, as is part of their job description.

*Safety Suggestions/Concerns.* Employees are encouraged to offer their advice, criticisms, and suggestions that provide a new path to improve process safety program.

### **Development of AHP-based Decision Matrix**

#### ***Identification of Criteria for selection of key factors***

Mentioning the shortcomings of the selection process in the first section some other approach should be considered and deliberated that can help to select the most meaningful and representative factors out of the relatively large number of initially defined factors. The problem can be solved by defining a criteria for evaluation and selection of factors, and applying Multi-criteria decision making (MCDM) method. It is a set being frequently recommended in the literature, (Executive, 2001; McNeeney, 2005; Zwetsloot, 2013), and is denoted by the acronym of SMART, which stands for: Specific, Measurable, Achievable, Relevant, and Time-bound. For example, for selection of key factors of performance measurement system a review by Carlucci (2010), suggests that factors should be characterized by the following features: relevance, reliability, comparability and consistency, understand-ability and representational quality. A similar criteria for selection of factors can be found in Centre of Chemical Process Safety (CCPS) metrics guidelines (Safety, 2009) and American Petroleum Institute (API), recommended practice 754 (Institute, 2010). Yet the basic description of the criteria matches largely with the SMART criteria and has a potential to significantly simplify the selection process and measurement system.

#### ***Constructing AHP-based Hierarchal model***

Here the set of candidate factors from the conceptual factor model are used in constructing an AHP-Based hierarchy. Three groups were defined and constructed the hierarchy including goal, criteria, and factors. In the hierarchy, selection of key factors for different dimensions of conceptual factors model of safety culture is set to be the goal. The next level consists of set of five SMART criteria, while the last level includes all homogeneous set of candidate factors. The AHP based hierarchal model is depicted in Fig.2.

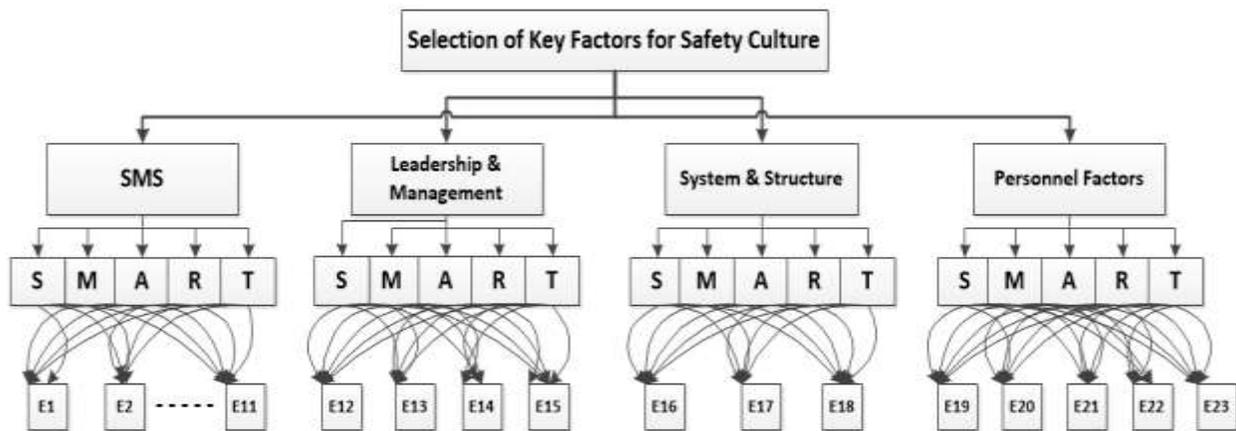


Figure 2: A hierarchical model of decision-making problem concerning prioritization of the factors for safety culture using SMART criteria

**AHP-based decision matrix for prioritizing key factors of safety culture**

For creating the AHP-based decision matrix, the target set of factors are selected to be homogeneous in terms of the criteria of selection of key elements, which means that for the selection of key factors for all components of safety culture, the same weights of SMART criteria can be applied. Furthermore, the SMART criteria provides a smart guidance for selecting the most meaningful and representative factors. The following is the AHP based decision matrix by which key factors can be identified accordingly by their weights as shown in Table 1.

Factors of Safety Culture	Factors Representation	Criteria based weights					Weight
		Specific	Measurable	Achievable	Relevant	Time-bound	
		$c_s$	$c_m$	$c_a$	$c_r$	$c_t$	
<b>Safety Management System related Factors</b>							
Safety Policy	$E_1$	$e_{11}$	$e_{12}$	$e_{13}$	$e_{14}$	$e_{15}$	$W1$
Safety Training	$E_2$	$e_{21}$	$e_{22}$	$e_{23}$	$e_{24}$	$e_{25}$	$W2$
Adequate Operating Procedures	$E_3$	$e_{31}$	$e_{32}$	$e_{33}$	$e_{34}$	$e_{35}$	$W3$
Safety Communication	$E_4$	$e_{41}$	$e_{42}$	$e_{43}$	$e_{44}$	$e_{45}$	$W4$
Audits and Inspections	$E_5$	$e_{51}$	$e_{52}$	$e_{53}$	$e_{54}$	$e_{55}$	$W5$
Preventive Planning	$E_6$	$e_{61}$	$e_{62}$	$e_{63}$	$e_{64}$	$e_{65}$	$W6$
Emergency Planning	$E_7$	$e_{71}$	$e_{72}$	$e_{73}$	$e_{74}$	$e_{75}$	$W7$
Regulatory Compliance	$E_8$	$e_{81}$	$e_{82}$	$e_{83}$	$e_{84}$	$e_{85}$	$W8$
Rewards and Recognitions	$E_9$	$e_{91}$	$e_{92}$	$e_{93}$	$e_{94}$	$e_{95}$	$W9$
Employee Engagement	$E_{10}$	$e_{10.1}$	$e_{10.2}$	$e_{10.3}$	$e_{10.4}$	$e_{10.5}$	$W10$

Safety Meetings/Committee	$E_{11}$	$e_{11\ 1}$	$e_{11\ 2}$	$e_{11\ 3}$	$e_{11\ 4}$	$e_{11\ 5}$	$W_{11}$
<b>Leadership and Management related Factors</b>							
Management Safety commitment	$E_{12}$	$e_{12\ 1}$	$e_{12\ 2}$	$e_{12\ 3}$	$e_{12\ 4}$	$e_{12\ 5}$	$W_{12}$
Adequate Supervision	$E_{13}$	$e_{13\ 1}$	$e_{13\ 2}$	$e_{13\ 3}$	$e_{13\ 4}$	$e_{13\ 5}$	$W_{13}$
Safety prioritization	$E_{14}$	$e_{14\ 1}$	$e_{14\ 2}$	$e_{14\ 3}$	$e_{14\ 4}$	$e_{14\ 5}$	$W_{14}$
Blame Culture	$E_{15}$	$e_{15\ 1}$	$e_{15\ 2}$	$e_{15\ 3}$	$e_{15\ 4}$	$e_{15\ 5}$	$W_{15}$
<b>Safety Systems and Structure related Factors</b>							
Functioning of Safety systems	$E_{16}$	$e_{16\ 1}$	$e_{16\ 2}$	$e_{16\ 3}$	$e_{16\ 4}$	$e_{16\ 5}$	$W_{16}$
Human Resources	$E_{17}$	$e_{17\ 1}$	$e_{17\ 2}$	$e_{17\ 3}$	$e_{17\ 4}$	$e_{17\ 5}$	$W_{17}$
Material Resources	$E_{18}$	$e_{18\ 1}$	$e_{18\ 2}$	$e_{18\ 3}$	$e_{18\ 4}$	$e_{18\ 5}$	$W_{18}$
<b>Personnel Factors</b>							
Risky Behavior	$E_{19}$	$e_{19\ 1}$	$e_{19\ 2}$	$e_{19\ 3}$	$e_{19\ 4}$	$e_{19\ 5}$	$W_{19}$
Incident Reporting and Investigation	$E_{20}$	$e_{20\ 1}$	$e_{20\ 2}$	$e_{20\ 3}$	$e_{20\ 4}$	$e_{20\ 5}$	$W_{20}$
Risk awareness	$E_{21}$	$e_{21\ 1}$	$e_{21\ 2}$	$e_{21\ 3}$	$e_{21\ 4}$	$e_{21\ 5}$	$W_{21}$
Personal Responsibility	$E_{22}$	$e_{22\ 1}$	$e_{22\ 2}$	$e_{22\ 3}$	$e_{22\ 4}$	$e_{22\ 5}$	$W_{22}$
Safety Suggestions/Concerns	$E_{23}$	$e_{23\ 1}$	$e_{23\ 2}$	$e_{23\ 3}$	$e_{23\ 4}$	$e_{23\ 5}$	$W_{23}$

Table 1: Decision matrix for prioritizing key factors of safety culture

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# Relationship between Organizational Communication and Job Satisfaction in Temporary Work Environment: An Empirical Study of Plant Turnaround Workers

**Musah, Adiza. Alhassan\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

Email: deetutty@gmail.com

**Zulkipli, Ghazali**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Ahmad, Nizam Shahrul Isha**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*\*Corresponding author*

## Abstract

**Purpose:** The study explored the relationship between communication and job satisfaction in a temporary work environment of plant turnaround maintenance event.

**Methodology:** Data was gathered from 77 plant turnaround maintenance workers in 21 petrochemical plants in East and West Malaysia. The quantitative data was gathered through self-administered questionnaire using an adapted version of Communication Satisfaction Questionnaire (CSQ) and formulated job satisfactions questions related to plant turnaround as well as demographic information about the respondents. Factor analysis, Pearson correlation and regression analysis were used to analyze the final data.

**Findings:** The findings revealed strong correlation between communication and job satisfaction. In regression analysis, communication predicted all of the dimensions of job satisfaction whereas job satisfaction projected three of the seven communication satisfaction dimensions. However, respondents were generally not satisfied with communication which affected their job satisfaction. Thus, the results indicated a moderate levels of communication and job satisfaction.

**Implication:** The study represents a preliminary step in contributing to research in temporary work environment in the process-based industries. And the need for continuous improvement of communication issues.

**Originality/Value:** The study highlights the importance of effective communication which helps in boosting employee job satisfaction besides improving performance. The study also highlighted the need for TA managers and/or organizers to include all TAM employees in communication strategies in order to improve communication.

**Keywords:** Communication, job satisfaction, temporary environment, turnaround maintenance.

## Introduction

Workers in a temporary work setting may be marginalized in terms of effective communication and more especially in empirical research. These employees can be termed as non-casual workers and due to the temporary nature of their job, they may not be accorded the same communication management system and performance appraisal as compared to those in stable work settings. Any decline in communication may result in employee dissatisfaction and in the long run affect performance or productivity. The reliance of the organization and execution of plant turn around maintenance (TAM) with contract workers on temporary basis may place additional weight on communication processes.

Communication is essential in working relationship in connecting employees and enabling organizations to achieve their purpose (Downs, 1988; Hargie, Dickson and Tourish, 1999). Scholars have stressed that communication is crucial in promoting efficiency and desired output (Goris, Vaught and Pettit, 2000; Argenti, 1998; Pettit, Goris and Vaught, 1997; Rodwell, Kienzie and Shadur, 1998). For instance employees' perception of supervisory communication and value in addition to overall organizational communication impacts the job satisfaction (Pettit et al, 1997). Though management and business studies literature is replete with information on research in organizational communication, researchers have continued to call for further research into organizational communication and its connection to job satisfaction. It has been further asserted that to comprehend fully the value of organizations as communicative phenomena, empirical research is imperative on actual communication in work environment as it occurs. In line with these recommendations, this current study investigates communication and job satisfaction in temporary work settings of plant TAM in petrochemical companies in Malaysia.

Organizational communication and job satisfaction are concept that are important to management practitioners and researchers (Bulutlar and Kamasak, 2008), due to the fact that value of communication and job satisfaction may define work-life balance, productivity and ultimately define the level of output (Pettit et al, 1997). While majority of research concentrated on the effects of organizational communication and job satisfaction on job performance, others (Bulutlar and Kamasak, 2008; Clampitt and Downs, 1993) revealed strong connection between communication and job satisfaction as compared to relationship found between communication and performance. Literature review reveals a gap in research on communication satisfaction and job satisfaction in plant TAM in Malaysia. Consequently, this exploratory study represents an important contribution to the development of research in temporary organizational communication and job satisfaction in process-based industries in Malaysia. The following research questions were formulated, what is the relationship between job satisfaction and communication satisfaction during TAM? Is communication a significant predictor of job satisfaction and vice versa? And what is the impact of individual and organizational factors on communication and job satisfaction?

### **Literature Review**

Operators of processing plants have periodic total shutdown for the plants undergo maintenance work. Plant turnaround (TA) is an essential activity of any continuous process plant (Duffuaa and Daya, 2004) with the aim of invigorating, sustaining, and increasing plant performance (Musah, Zulkipli and Ahmad, 2014). It is also as a requirement by the Department of Occupational Safety and Health (DOSH) in Malaysia. TA is necessary because certain equipment or parts of equipment have limited life span in comparison to the plant itself (Duffuaa, Raouf, Knezevic and Ait-Kadi, 2009). A plant turnaround maintenance (TAM) activity is a prearranged episodic maintenance in which process plants which are usually continuously in operations except for emergencies are

shutdown to carry out certain tasks (Musah et al., 2014). Due to the huge manpower needed for the event, communication has long been an issue which has been to delays, safety, conflict, budget over-run and sometimes loss of jobs during the event (Musah, Zulkipli and Ahmad, 2015a; Musah, Zulkipli and Ahmad, 2015b).

Communication like other organizational concept, does not have a consensual definition even though plays pivotal role in all functions of organizations. According to Katz and Kahn (1978, p. 430) communication is “the exchange of information and the transmission of meaning, in other words, it is the very essence of a social system or an organization”. Similarly Scott and Mitchell (1976, p. 192) believes that: “Communication is the critical process in organizing because it is the primary medium of human interaction”. According to Bush and Frohman (1991), communication is significant in organizational operations to conveying better organizational effectiveness. Lawler (1989) opines that sharing information nurture interpersonal relationship between subordinates and leaders in organizations. Employees have a right to information about their organization, its activities, aims, and directions and access to relevant channels to air their views to boost their morale and performance. When employees are exposed to proper communication, encouraging organizational outcomes would be expected (Gray and Laidlaw, 2002). Therefore, communication is crucial in disseminating information as well as serving as a back bone to the fostering and sustaining of healthy work relationship, management and reliance (Hunt, Tourish and Margie, 2000) which are very important to a successful TAM activity.

Studies in organizational communication and job satisfaction indicated significant relationships between inadequate and excess information and job satisfaction (Hwang and Lin, 1999; Chening and Harrell, 1990). These studies underscored the significance of communication and job satisfaction because overall positive outcome is the aim of this interaction (Goris, Pettit and Vaught, 2002). Therefore to understand job performance, there is a need to first understand communication satisfaction and job satisfaction which lays the foundation for effective work performance. In line with this argument, there is increased research on organizational communication and job satisfaction as findings continue to highlight that communication and job satisfaction have positive connection (Pearce and Segal, 1998). According to Pettit et al. (1997) communication plays a key role in an employee’s job satisfaction. Job satisfaction is multidimensional, thus people may have diverse levels of satisfaction for different organizational communication factors.

Management literature is replete with studies (Bulutlar and Kamasak, 2008; Clampitt and Downs, 1993; Wheelless, Wheelless and Howard, 1983; King, Lahiff and Hatfield, 1988; Pincus, 1986) in communication and job satisfaction with results revealing positive relationship between organizational communication and job satisfaction, these studies were conducted in stable work environments. For instance, Pincus (1986) research on hospital nurses showed significant positive relations between the organizational communication and job satisfaction. Another study by Wheelless et al. (1983) also revealed strong positive correlation between communication satisfaction and job satisfaction. King et al, (1988, p. 36) determined in their research about the presence of the reliably strong and positive connection between an employee's views of communications and job satisfaction.

### **Methodology**

Twenty-one petrochemical companies which were having TA were sampled for this study. This empirical study was conducted to understand the communication process during the intense maintenance event. Questionnaire were distributed to 160 employees and a total of 77 useable

response (48% response rate) was used for this study. Mix method mode was used (quantitative and qualitative) to gather by means of both close-ended and open-ended questionnaires (e.g. "How satisfied were you with communication during the just ended TAM", "If the communication associated with your job could be changed to make you more satisfied, please indicate how?) And semi-structured interviews. An adapted version of Communication Satisfaction Questionnaire (CSQ) advanced by Downs and Hazen (1977) and additional job satisfaction questionnaires specific to the TAM work were used.

### ***Sample***

The sample was typical of an engineering work environment with 64% males and 36% females. Most of the respondents were between the ages of 36-40 years (22%), 18% were between 26-30 years, and 17% were between 51 years and above. Seventy percent (70%) of the respondents were operatives (subordinates) and 30% were supervisors. In terms of status during TAM, 61% and 39% were permanent and temporary workers, respectively. Majority of the workers (64%) had more than 5 years of TAM experience as compared to those with less than 3 years (20%), 3-5 years (6%) and those with no prior TAM experience (10%).

### ***Research Instruments***

The instruments used for this study was CSQ that was developed by Downs and Hazen and some added questions on TAM job satisfaction by the researchers of this present study. Respondents were requested to indicate their level of satisfaction with twenty-eight items using a one-to-five point scale ranging 1="very dissatisfied" to 5="very satisfied". The adapted questionnaire consisted of seven dimensions defined below and each dimension was measured with four items. The reliability and validity of the communication instrument is supported by several studies (Bulutlar and Kamasak, 2008; Musah et al, 2014; Greenbaum, Clampitt and Willhnganz, 1988). Seven of the eight factors of communication are defined as follows:

1. *Communication Climate*: It comprises the degree to which communication in an organization encourages and inspires workers to meet organizational goals and the level to which it makes them identify with the organization.
2. *Supervisory Communication*: Includes both upward and downward levels of communicating with supervisors.
3. *Subordinate Communication*: Stresses ascending and descending communication inside an organizational. The receptiveness to downward and upward communication is evaluated.
4. *Horizontal communication*: Extent to which informal communication is accurate and free flowing.
5. *Media Quality*: The degree to which meetings are well organized and written materials are short and detailed.
6. *Organizational Integration*: Measures the degree of satisfaction with information about work plans, job description and job specification.
7. *Personal Feedback*: Measures employees' need to know how they are assessed and their performance appraisal.

Questions on the overall level of job satisfaction related to TAM were added, using a one-to-five point scale which ranged between 1="very low" and 5="very high". The questions covered overall satisfaction with TAM job, satisfaction with TAM job description and satisfaction with TAM job rules and regulations. Demographic questions related to gender, age, experience, position, and designation were added.

### ***Data Analysis***

Data from the questionnaires were analyzed using the Statistical Package for the Social Sciences (SPSS) version 20. Cronbach Alphas was run to determine the reliability of the instruments and Factor Analyses were done to evaluate the factor solution for each instrument (Table 1); Pearson Correlation Analysis was computed to determine the strength of the overall relationship between: (a) communication satisfaction factors and job satisfaction (Table 2); (b) job satisfaction factors and communication satisfaction (Table 3); and Regression Analyses were computed to analyze the predictive relationship between communication and job satisfaction (Table 4 and Table 5).

Table 1: Factor Analysis, Reliability, mean and standard deviation of the instruments

Dimensions	KMO	Bartlett	Total Variance Explained	Cronbach Alpha	Mean	Standard Deviation
Communication Satisfaction	0.90	X <sup>2</sup> : 387.59	80.82%	0.84	3.60	0.58
		Df: 21				
		ρ: 0.00				
Job Satisfaction	0.69	X <sup>2</sup> : 85.78	73.82%	0.82	3.53	0.41
		Df: 3				
		ρ: 0.00				

The Cronbach Alphas obtained for the adapted communication questionnaire was 0.84, and for the individual factors the Cronbach Alphas ranged from 0.79 for the Horizontal Communication and media and personal feedback, 0.78 for supervisory and communication climate, 0.81 for organizational integration to a high of 0.94 for the subordinate communication. The Cronbach Alpha for job satisfaction questions was 0.82 and the individual dimensions were, jobsat1 (satisfaction with overall TAM job); 0.72 for jobsat3 (satisfaction with TAM rules and regulations); and 0.70 jobsat2 (satisfaction with TAM job description).

## Results

### *Communication Satisfaction*

Overall, there was strong and positive correlation between communication satisfaction and job satisfaction  $p < .001$ ;  $r = 0.79$ ). Table 2 shows that there were significant and positive correlation among six of the communication factors and this means that the communication satisfaction dimensions are closely interrelated to each other. Furthermore, the mean communication satisfaction scores for the seven dimensions as shown in Table 2 show that respondents were slightly satisfied with organizational communication. Respondents showed the highest degree of satisfaction for personal feedback (3.60), then subordinate communication (3.58) and communication climate (3.56), signifying a slight satisfaction of communicating with information flow and communication among lower staff and also the receptivity of the work environment. Supervisory communication (3.53) was rated as the aspect of least satisfaction.

Table 2: Correlation between job satisfaction and communication satisfaction factors, mean, standard deviation and Cronbach Alpha

	Mean	SD	α	1	2	3	4	5	6	7	8
1 Job satisfaction				1							
2 Personal feedback	3.60	0.61	0.79	0.82**	1						
3 Organizational Integration	3.53	0.56	0.81	0.81**	0.76**	1					
4 Supervisory	3.42	0.53	0.78	0.68**	0.77**	0.74**	1				
5 Communication Climate	3.56	0.55	0.78	0.68**	0.73**	0.69**	0.80**	1			

6	Horizontal communication	3.53	0.60	0.79	0.66**	0.70**	0.67**	0.75**	0.69**	1		
7	Media Quality	3.55	0.60	0.79	0.63**	0.68**	0.61**	0.76**	0.77**	0.77**	1	
8	Subordinate communication	3.58	0.53	0.94	-0.10	-0.15*	-0.19*	-0.12	-0.10	-0.03	-0.10	1

\*\*Correlation is significant at the 0.01 level; \*  $p > 0.05$

The relationships between specific communication dimensions and overall job satisfaction, the correlation analyses showed that the strongest correlations was between personal feedback and job satisfaction ( $r = 0.82$ ), followed by correlation between Organizational Integration and job satisfaction ( $r = 0.81$ ), and then correlation between Communication Climate and supervisory communication and job satisfaction ( $r = 0.68$ ). The fourth strongest correlation was between horizontal Communication ( $r = 0.66$ ) and media ( $r = 0.63$ ) and job satisfaction. However, the correlation between subordinate communication and job satisfaction was negative ( $r = -0.10$ ) and weak.

### Job Satisfaction

All of the job satisfaction factors correlated significantly (high and positive) with overall communication satisfaction ranging from  $r = 0.61$  for jobsat1 (satisfaction with overall TAM job);  $r = 0.69$  for jobsat2 (TAM job description) and  $r = 0.73$  for jobsat3 (TAM job rules and regulations). The mean scores for the three dimensions of job satisfaction as shown in Table 3 revealed that the respondents were slightly satisfied with their TAM job. Respondents indicated almost equal satisfaction in all three factors with no much difference among the means.

Table 3: Correlation between communication and job satisfaction dimensions, mean, standard deviation and cronbach alpha.

	Mean	SD	$\alpha$	Communication	Job sat1	Job sat2	Job sat3
Communication				1			
Job sat1	3.60	0.71	0.84	0.61**	1		
Job sat2	3.61	0.65	0.70	0.69**	0.57**	1	
Job sat3	3.60	0.67	0.72	0.73**	0.54**	0.72**	1

Correlation is significant at the 0.01 levels (2-tailed)

In the Multiple Regression Analysis (Table 4) the communication factors were treated as the predictor variables and the job satisfaction as the dependent variables. Communication satisfaction was a significant predictor of job satisfaction,  $F(7, 69) = 32.302$ ,  $p = 0.000$ ,  $R^2 = 0.77$ . Hence, communication explains 77% of variance in job satisfaction.

Table 4: Multiple regression analysis of communication and job satisfaction dimensions

Variable	Adjusted $R^2$	F	Beta( $\beta$ )	$p$
Jobsat3	0.533	87.70	0.431	0.000
Jobsat1	0.597	57.29	0.250	0.000
Jobsat2	0.617	41.82	0.236	0.000

Predictors: (constant), jobsat3, jobsat1, jobsat2

Dependent variable: Communication satisfaction

In Table 4 communication Satisfaction was also a significant predictor ( $p < .001$ ) for all the job satisfaction factors. Communication had the strongest impact on satisfaction with overall TAM job

rules and regulations ( $\beta=0.431$ ), followed by satisfaction with overall TAM job ( $\beta=0.250$ ) and satisfaction with TAM job description ( $\beta=0.236$ ).

Overall job satisfaction was observed to predict communication. Specifically, job satisfaction (Table 5) had strongest impact on personal feedback ( $\beta=0.468$ ) and organizational integration ( $\beta=0.459$ ). Other communication factors did not significantly predictor ( $p>.05$ ) job satisfaction: Communication climate, Media Quality, Subordinate Communication, and Horizontal Communication. However, no individual or organizational variables predicted job satisfaction ( $F(6, 70) = 0.406, p=0.873, R^2=0.034$ ).

Table 5: Multiple regression analysis of job satisfaction and communication dimensions

Variable	Adjusted R <sup>2</sup>	F	Beta( $\beta$ )	P
Personal feedback	0.662	149.93	0.468	0.000
Organizational Integration	0.750	114.72	0.459	0.000

Predictors: (constant), personal feedback, organizational integration

Dependent variable: Job satisfaction

The overall means for communication satisfaction shows that in general, employees with the most years of TAM experience (more than 5 years) experienced moderate levels of communication satisfaction in comparison to those with less than 5 years' experience. Employees in managerial and non-executive-non-technical positions indicated slight level of communication satisfaction than lower staff. Those from ages of 51 years and above had moderate satisfaction in communication. However, both males and females had equal levels of satisfaction in communication.

### Discussion

Research in communication satisfaction have revealed (Bulutlar and Kamasak, 2008; Clampitt and Downs, 1993) that certain areas with most employee satisfaction are the Supervisory Communication and Subordinate Communication, whereas the area of less satisfaction is Personal Feedback factor which is contrary to the present findings. There is suggestion that employees in higher positions/levels are most satisfied with communication than those in the lower levels, however, in the present study both employees in managerial and lower levels had the moderate satisfaction in communication during TAM. Demographic variables have also been suggested to afford insufficient details of the level of communication satisfaction (Clampitt and Girard, 1993; Varona, 1988). In contrast, the present study revealed, both males and female had moderate satisfaction in communication, and also employees above 51 years had communication satisfaction. Employees who had more than 5 years of work experience had more satisfaction in both communication and job satisfaction. Communication satisfaction has significant correlation with job satisfaction. Personal Feedback, Communication Climate, and Subordinate Communication were the three factors that have had the strongest relation with job satisfaction (Downs, Clampitt and Pfeiffer, 1988). Correspondingly, in the present study personal feedback, organizational integration, supervisory communication, communication climate, horizontal and media quality also correlated positively and highly with job satisfaction. Subordinate communication had no correlation with job satisfaction.

An important outcome of this study is that TAM employees surveyed were generally not satisfied with all aspects of communication out of the seven dimensions. The areas of slight satisfaction were subordinate communication, communication climate and organizational integration which partial

contradicts previous studies in stable organizations that found supervisory and subordinate communication as the most satisfied and personal feedback as the least satisfied. A study by Argenti (1998) revealed the biggest criticism employees have consists of upward communication which is not encouraged to the same extent as downward communication. The least preferred was supervisory communication. Thus, the respondents were dissatisfied with upward and downward aspect of communication which is evident in comments such as “*we meet every day, discuss issues but most issues are irrelevant to our work and it takes too much time*”. Thus inadequate subordinate and supervisory communication demoralizes employees’ demotivates them to do better to achieve set objectives.

In another study of employee job satisfaction, Callan, (1993) asserted that employees who were more satisfied with their jobs believed they had better chance to discuss with their superiors, superiors were more tolerance of their views and had more opportunities for self-disclosure. Therefore the results suggests that effective communication relationship with supervisors may play a critical role in determining employees’ job satisfaction is lacking in TAM environment. Studies by Pincus (1986) and Downs (1977) on relationship between communication and job satisfaction, showed personal feedback, communication climate and supervisory communication have strong correlation with job satisfaction. Similarly, six of the communication factors correlated with job satisfaction. Consequently, the results submits that the general moderate levels of communication satisfaction is connected with moderate levels of job satisfaction.

Personal feedback was perceived positively by the respondents, highlighting the neutral to satisfied satisfaction level feedback on employees, “*I would confront my supervisor and voice out my opinion and ask for clarification*”. The comment reflects positive interpersonal relationship between subordinates and supervisors and emphasizes the perceptive importance of feedback in improving role transparency (Morrison, 1993) and offers valuable information on efficiency of work being carried out (Clampitt and Downs, 1993). Thus, the results could have implication for performance. Feedback plays a crucial role in motivating workers as demonstrated by Mayfield *et al.* (1998) in their research that a superior’s use of motivating language significantly improved workers performance and job satisfaction. Therefore, satisfaction with personal feedback may boost morale of employees to improve performance which leads to job satisfaction.

Respondents perceived the TAM environment as conducive for communication as is evident in the correlation concerning communication climate and job satisfaction and the relative neutral to satisfied (Mean=3.6, SD=0.55) indicated by respondents. However, respondents believe there is a need to improve the TAM communication climate “*timely and detailed information will be appreciated*”. The remarks highpoint the significant side of communication satisfaction regarding the delivery of satisfactory information emphasized by Argenti (1998) who asserted that open-minded superiors are aware that the more information they disseminate to their subordinates, the more they are to do perform better.

Media quality was perceived neutral to satisfied by the TAM employees. Respondents have said “*we have meeting everyday where issues are brought up and discussed*”, and some have suggested improvement to the delivery of messages, “*instruction/directions should be communicated via formal means (example email, meetings) NOT whatsapp*”. Some also complained, “*Too many meetings and people talk too much. Just get to the point*”.

There was weak and negative correlation between subordinate communication and job satisfaction with mean indicating general levels of neutral to satisfaction (Mean= 3.6, SD=0.53) as indicated by the comments “*subordinate did not strictly follow instruction that has been given to him earlier. As*

*a result work has to be repeated and caused additional days”, another TA manager has said “some subordinates are so stubborn and will not adhere to directives”. Yet another TA manager asserted “I have had to fire some workers who defer instruction and pose danger to others and delay and financial loss to the organization”.*

Generally, respondents were dissatisfied with subordinate communication. Supervisors and managers should be cautious about the possibility of TAM employee missing out on vital information and consequently put plans in place to include them in the communication loop.

### ***Implication for plant turnaround workers relationships***

The reported dearth of relationship between subordinate communication and job satisfaction suggests upward-downward communication and performance appraisal should be reviewed to include individual employees’ evaluation as compared to just overall TA success based on the achievement of TA objectives. TA management need to support TA workers to communicate clearly, and provide positive and negative feedback. Because of the temporary nature of TAM work, personnel normally do not make long-term commitment and as such personnel are most of the time excepted from performance management structures and development arrangements. Therefore, measures ought to be taken to safeguard TAM workers inclusion in all levels of communication and performance assessments.

According to a TA manager, “*contractors and individually hired low skilled worker are not trained but verbally instructed on what to do because we do not have the time and additional resources to do that. Contractors are responsible for training their staff and inform them about their job in the plant*”. This comment could explain the general dissatisfaction with supervisory-subordinate communication and this dissatisfaction can be navigated by creating awareness about employees’ communication behavior. Training program should be devised to advance openness to communication, which will positively boost subordinate morale (Kay and Christophel, 1995). Therefore, it is proposed that improving communication skills will motivate employees work performance and satisfaction. Tackling the issues of miscommunication and misunderstanding and improving communication climate will help in creating healthy work relationships (Hunt et al, 2000). Furthermore, effective communication decreases doubts and improves individual confidence which reduces work stress and exhaustion and improves interpersonal working relations (Bulutlar and Kamasak, 2008; Miller, Ellis, Zook and Lyles, 1990). Therefore, right from the planning stage of TA, organizers must strategize a system of effective communication to improve coordination during the event.

Similarly, the general dissatisfaction with TAM work could be attributed to long hours of work and overall demands of the activities. A respondent had said “*there is too much work to do with few workers*”, another had reiterated “*there is lack of manpower coordination especially on the part of the contractors*”. In essence, unless TAM employees can be entirely assimilated and furnished with crucial information, the overall dissatisfaction with communication and job may obstruct the value of their contribution to their work and overall performance.

### **Conclusion**

The concepts of organizational communication and job satisfaction have been established in the literature by both scientists and practitioners in stable organizations. However, there is dearth of empirical research looking that the relationship between communication and job satisfaction in temporary work environment of plant TAM. Therefore, this exploratory study makes significant

contribution to the literature by emphasizing the importance of communication on job satisfaction regardless of work environment. Additionally, the study adds to similar findings made in previous studies in stable organizations. Consistency and contradiction of the present findings to those in stable work environments not only adds to influence of communication on job satisfaction but also highlights the consistent nature of impact across work environments.

Although the present study supported previous research, caution should be exercised in generalizing the results because of the multifaceted nature of the relationship between communication and job satisfaction in temporary work environments, further research is necessary. Further research will clarify and contribute to understanding the complex and dynamic progression of communication and its connection with job satisfaction in temporary work environment in plant TAM. The study highlighted that TA managers/supervisors need to include all turnaround maintenance employees in communication strategies in order to increase communication satisfaction.

In conclusion, the study supports the significance of communication during TA and serves as a reminder for TAM management to work on ensuring and promoting effective communication flow during the event, because through effective communication they can achieve functional TAM results, thereby resulting in more satisfaction with their work.

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# Plant Turnaround Maintenance Leading and Plant Turnaround Maintenance Performance in Malaysian Process Based Industry: The Mediating role of Team Alignment

**Jalal ud Din Akbar\***

*Department of Management and Humanities, Universiti Teknologi Petronas, Malaysia*  
E-mail: jalaluddin77@gmail.com

**Zulkipli Ghazali**

*Department of Management and Humanities, Universiti Teknologi Petronas, Malaysia*  
E-mail: zulkipli\_g@petronas.com.my

*\*Corresponding author*

## **Abstract**

**Purpose:** The purpose of the study is to develop an organizational and management model for the Plant Turnaround Maintenance in Malaysian Process-Based Industries using management functions of leading and performance of plant turnaround maintenance whereas team alignment is used as mediator.

**Design/methodology/approach:** The study uses quantitative approach using survey questionnaires for collection of primary data from the respondents working in the large and technological advance process based industries of Malaysia. Mostly these large and technological advance organizations carries plant turnaround maintenance. The survey questionnaires were distributed to about 96 companies belonging to different sectors of Malaysian Economy. These includes oil and Gas companies, petrochemical companies, Power Plants, Palm Oil Plant and cement Plants. The response rate was 32%.

**Findings:** The results show that the leading plays a vital role in the enhancement of the performance of the plant turnaround maintenance using team alignment as a mediator.

**Research limitations/implications:** The study intends to validate the developed model on larger sample size. Moreover, the study also proposes to investigate whether or not the findings can be of any help to industrial projects other than plant turnaround maintenance.

**Practical implications:** The Plant Turnaround Maintenance management spent maximum of its time on planning but most of the time the project could not achieve the stated goals. The execution phase of the plant turnaround maintenance is very critical as the leading of the process has high effect on overall project, therefore the proposed model in this research can be helpful to achieve the goals effectively and efficiently.

**Originality/value:** The literature available on management functions and project management techniques and phases are abundant, however, few studies are available on the degree of management functions used in different phases of the plant turnaround maintenance.

**Keywords:** Shutdown; Team Alignment; Leading; Performance; Mediation; Plant Turnaround Maintenance

### **Introduction**

The process based manufacturing and production businesses uses huge quantities of the unrefined feedstock to produce the required chemicals and products through application of the mechanical, physical and chemical processes and procedures. The process industry include plants from refineries, oils, petrochemical plants, power plants and cement plants. These plants operate to produce the products through continuous and batch process. Due to continuous and batch processes, the equipments of the company wear out (Ghazali, 2010). Therefore, the efficient and safe accessibility of the plant is make possible through the trustworthiness, consistency and durability of the process plants. The durability and consistency of plant equipments is achieved through an efficient and reliable asset maintenance management system, called as plant turnaround maintenance. This type of maintenance helps in reducing the chances of the risk of impromptu and tragic breakdowns (Ghazali, 2010; McLay and Ltd, 2003; Obiajunwa, 2007). The spontaneous and tragic breakdown of the plant machinery and equipments not only effects the operation of the plant but also severely affect the financial position and status of the company (Pokharel and Jiao, 2008). In plant turnaround maintenance, the plant is kept up to date through reviving, upgrading, keeping the vital parts running and in good working conditions (Ghazali, 2010).

The nature of the business and kind of equipments and equipment capacity and stability inspire and provoke the plant turnaround maintenance. The periodic maintenance schedule is different for different industries. For example the plant turnaround maintenance in petrochemical companies and refineries is scheduled after a lapse of few years (Hameed and Khan, 2014; Lawrence, 2012). During the complete shutdown of the plant, there is no production of the petrochemicals. It causes the loss of the income and results in an increase in the financial liability of the company as in the case of the oil and gas industry (Hameed and Khan, 2014).

The plant turnaround maintenance is a very crucial and important asset management therefore; the studies conducted in the past were to know the best management practices to handle successfully this important event. However, the results shows that 1 out of 4 turnaround maintenance are completely failed projects, causing huge losses to the companies. The research also indicates that 80% of the turnaround maintenance fails to accomplish the set objectives and goals. It also imply the poor performance of the management of the plant turnaround maintenance. After close inspection and analysis of the causes of the poor performance it was revealed that one of the reason might be the inadequacy and non-qualification of the team and the team alignment with the plant turnaround maintenance goals and objectives (Shirley, 2012).

### **Objectives**

The current study will focus on plant turnaround effectiveness by exploring

- 1.The impact of plant turnaround maintenance leading on plant turnaround maintenance performance.
- 2.To know the mediation of team alignment on the influence of Plant turnaround maintenance leading on plant turnaround maintenance performance.

### Conceptual Framework

The conceptual framework for the current study is given below.

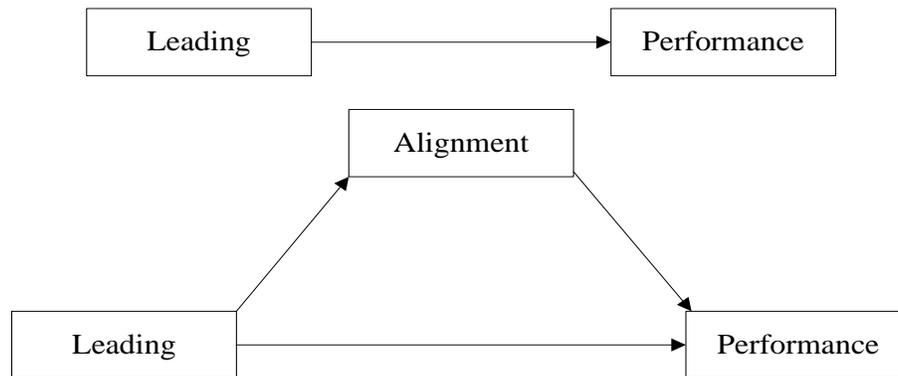


Figure 1. The Conceptual Framework of Leading with Performance using alignment as mediator

### Literature Review

The financial expenses and time overruns are due to the technical complexities, hazards and instabilities associated with the plant turnaround maintenance. It poses risk to the effectiveness and efficiency of the plant assets and put a question mark on the reliability and durability of the plant equipments. In plant turnaround maintenance, all the resources of the organization, including financial and humans, are at high level of risk. The plant turnaround maintenance is proceeded with these valuable resources. The success rate of the plant turnaround event decide the fate of the company. The amount of required finances and other resources put into this event bases on the documented records of previous turnaround events. Therefore, a clear set of time schedule and budget is required for this event. The rules and regulations of the plant turnaround management followed rigorously are to avoid any cost overruns and time schedule slippages. To achieve these objective and target, the most important and vital point is to align the objectives of the plant turnaround maintenance with that of the goals of the business of the organization (Halib, Ghazali, and Nordin, 2010).

The organizations, which carry out the plant turnaround maintenance, have a proficient and capable management system for this important and critical event. The management function of planning carried out is to accomplish the high level of performance of the event. Before the execution of the plant turnaround maintenance, the management is involved in the planning process, during which the care of minute details of every task takes place. In the planning process, the tasks and other resources are adjusted in such a manner to complete the event within the allocated budget and allotted time and to achieve the high quality of the work done (Oliver, 2002; Pokharel and Jiao, 2008; Raoufi and Fayek, 2014; Tu, Yam, Tse, and Sun, 2001). Generally, the planning process contains provisions for the additional and emergent work. These additionally and emergent works are tried to be completed within the provisions of the planning process, otherwise it negatively effects the performance of the event. Which in turn results in delays in completing other task and activities of the plant turnaround maintenance. With the passage of time, the delay in these types of work adds cost and expenses to the event finances and allocated budget. Therefore more emphasis

is put on using the best planning practices available for this event to improve performance in terms of quality, timely completion of the event within the allocated budget and safety of humans and the environment (Raoufi and Fayek, 2014). The organizations consists of different departments and sections. Usually, these departments are in competition to achieve high performance on individual base. However, on the individual level these departments are well enough but might risk the overall performance of the organization. So therefore the organizational performance reaches to its peak, when all the segments and sections of the organization align their priorities with the objectives and goals of the organization (Kheirandish, 2014).

### *Performance*

The organizational success is determine through the performance of the organization. In such cases and circumstances, usually the extent or percent contribution of the business and technology, in achieving the business objectives, are validated. Organizational performance is closely related to the effectiveness and viability of the alignment. In other words when there is alignment between organizational business and technology used, in the organization, then it will result in high performance of the organization (Croteau, Solomon, Raymond, and Bergeron, 2001).

In the case of the plant turnaround maintenance, the criteria for measuring the performance of the plant turnaround maintenance is different from the ordinary organizations and projects. In such an event, the performance measures includes cost, time, quality, health, safety and environmental issues. These performance measures and indicators are set in the preparation and planning phase of the plant turnaround maintenance. At this stage, it is ensured that these indicators are align with the overall objectives of the organization. The plant turnaround maintenance team and mainly management keep track of the cost, staff hours, work quality and its efficiency. The information collected of this parameter is, then compared with the already set objectives of the plant turnaround maintenance. There are many activities involved in the plant turnaround maintenance. The employees and team working in the plant turnaround maintenance work according to the roles and responsibilities assign to them. For the large number of activities, there are many people involved to carry out the activities of the plant turnaround maintenance. But, however, due to the nature of the plant turnaround maintenance and involvement of large number of people and large scale activities, the number of chances, that the performance measure and criteria could not be met, is very high (Lenahan, 1999). In such situations, the management concern is to measure the progress and developmental process from time to time to know the exact or real challenges facing in acquiring the performance of the plant turnaround maintenance. The management and the plant turnaround maintenance teams plays a crucial role in this scenario. All the difficulties and hurdles, which come across during the course of action is identified and all possible means and ways are sorted to find the solution for solving the problems arised (Ben-Daya, Ait-Kadi, Duffuaa, Knezevic, and Raouf, 2009). Usually in such case, the alignment of the plant turnaround maintenance objectives and the organizational objectives are checked to reach a solution for the enhancement of the plant turnaround maintenance. In this case numerous parameters including financial resources, human resources, technology, environment and the size of the plant turnaround maintenance event is scanned for possible improvements and achieving high performance (Dickson, Ford, and Upchurch, 2006).

The plant turnaround maintenance is consist of four different stages and each different stage has its own time span. The different phases of the plant turnaround maintenance are initiation, planning, execution and termination. The actual work process and activities, which are planned in the

planning phase, are carried out in the execution phase of the plant turnaround maintenance. The execution phase is the real test for gauging the abilities and capabilities of the management's planning skills and techniques (DeBakey, Samman, Sulaiman, Blanchard, and Edmundson, 2007; Gandolfo and Vichich, 2007). In the plant turnaround maintenance the classical management functions of planning, coordination, leading and control are also followed (Campling, Poole, Wiesner, and Schernerhorn, 2008). These management functions are the foundational principals of every organization and hence their importance could not be ignored. In plant turnaround maintenance, these functions are used in every phase of the plant turnaround maintenance. However, the use of these management functions depends on the phase of the plant turnaround maintenance under consideration or in action. In the initiation and planning phase of the plant turnaround maintenance, the management function of the planning and coordination is used more than the leading and control function of the management. In the execution phase, where there are a lot activities and resources involved, so the leading and control of the whole event is of high priority. Nearly all of the plant turnaround maintenance projects are consist of these four basic phases with little variations and the same procedures and phases of the plant turnaround maintenance are also followed in the plant turnaround maintenance conducted in Malaysian processed based companies (Ghazali, 2010).

The execution phase is very important and critical phase of the plant turnaround maintenance, where the performance indicators are strictly checked for their alignment with the objectives of the plant turnaround maintenance and objectives of the organization. The management function of leading plays a vital role in this regard for achieving high performance level and the current study will explore the impact of the plant turnaround maintenance leading on the plant turnaround performance where the team alignment is mediating this influence and impact of predictor on dependent variable.

### ***Leading***

The status of the current modern organizational management is due to the efforts of the Taylor and the Gilbreths. The maintenance work carried out in the past was unplanned without using formal techniques and information technology of management for its operations. It results in time slippages and low profitability. Therefore, the management functions are used for the management of the plant turnaround maintenance to increase the profitability of the company.

The leading function of management relates with communication, organisational goals, promoting support for organisational vision and encouraging people to perform at high level (Schermerhorn and Wright, 2008). It is the process of decision-making about the methods and techniques used to treat the employees of the organization and have influence on their attitude and behavior. It can be associated with creating passion among subordinates, creating a gripping and strong instance for the firm's future direction and appealing organisational sponsors. The leading is used to demonstrate a guidance for the employees, their motivation, supervision, team developments and communication with the respected parties (Carpenter, Bauer, and Erdogan, 2009). Its focus is on building people relationships, team improvement and supporting organisational and operational competences (Campling et al., 2008; Schermerhorn and Wright, 2008). The other leading exercises, involve employees by giving themselves to a group orientation and focus, molded by either formal or casual hierarchical cooperation. Besides, leading exercises can reflect dynamic techniques that permit the person to champion different features by including organisational change, advancing development, improving personalities and communicating the hierarchical message (Robbins,

Bergman, Stagg, and Coulter, 2009; Williams and McWilliams, 2010).

The turnaround maintenance has heavy impact on the objectives of the organisation, which are profit, quality, cost, safety, environment and human resource development. Therefore, alignment between the objectives of the organisation and turnaround maintenance is required.

### *Alignment*

The literature has many definitions and explanation for the concept of alignment. In one study, the alignment was described as a condition in which all the parts and components are being in adequate similarity or the components and parts are in such a position which support each other (Griffith and Gibson Jr, 2001; Morris, 1982). This concept educates and advocates the common understanding of the strategies of the organization. These strategies includes such processes and procedures that could be used to achieve the high performance of the organization (Chonko and Weeks, 2008; Connors and Smith, 1999). The alignment draws such an organizational setup in which all the necessary segments and sections are present. All these segments and sections work in conformity and in coordination for the sole purpose of achieving the organizational goals and objectives (Chonko and Weeks, 2008). In such an organizational setup, the people from various backgrounds are able to come close together to work for the common cause. This common cause may not be limited to the establishment of values system, increasing cooperation and collaboration among different departments and sections and among individual members of the organization as well (Chonko and Weeks, 2008; Hansotia, 2004).

In the ordinary organizations, the employees have their own priorities and concerns. The successful organizations bring together the individuals with different priorities. These organizations establishes such an environment in which the individuals align their preferences with the objectives of the organization. Due to this alignment, the efficiency and effectiveness of the organization increases which in turn results in high performance (Griffith and Gibson Jr, 2001). Usually, the employees share the same practices and procedures in working together in the organization. They are willing to work in teams as a team member and make efforts in individual capacity to achieve the objectives which are specific to a particular team and also for the whole organization (Chonko and Weeks, 2008).

In the team, the team members have available such a friendly environment in which they could take advantages of each other experience. The team members share their knowledge about their specialty with other members and help them to tackle and resolve the problems jointly. This attitude and behavior lets the team members a favorable environment to overcome their weaknesses and helps in building confidence among the team members. Generally the teams are meant for specific purposes which otherwise may not be achieved through individual efforts. The members share certain responsibilities to achieve that specific purpose which are set as the team objective (Nyberg, Nilsson, and Skinstad, 2009). For achieving the objectives of the team, the team consists of people having different work experiences and which are a valuable resource for achieving the objectives of the team. The team members have a single voice and act as a single unit. They have had the capacity to align and coordinate with the followers and are expert in making relationship with other teams to achieve the team objectives as well as the organizational objectives as a whole (Chonko and Weeks, 2008; Ingram, LaForge, Locander, MacKenzie, and Podsakoff, 2005). In this scenario the teams also act as a bridge for developing the relationship between different organizations for the success of their businesses (Chonko and Weeks, 2008; Collins and Porras, 1994).

As the team members consists of people from different work experiences, their roles and

responsibilities are defined according to their work experiences. The main target and objectives of the team are to achieve the required results with high performance. The team members work collectively in this regard. It is considered as a single unit in an organization. Each member has to play its part with responsibility to achieve the purpose of the team and team works. Any individual approach against the objectives of the team may have far-reaching consequences not only for the team but also for the whole organization. However the team work has different meanings in different social setups (Collins and Porras, 1994; Ingram et al., 2005). Due to teamwork and the common objectives of the organization and team, the businesses are confident in achieving the targets set forth in advance for business success and high performance. Nowadays the organization are giving more attentions to the teams. The leading of the teams towards a successful completion of the task and activities required the team to work in collaboration and coordination (Chonko and Weeks, 2008).

The team members may not belong to homogeneous cultures and societies, therefore their approach, methods and procedures used to solve the problem might be different. Sometimes the absence of communication, consensus and discussion about a problem among the team members give rise to conflicts. The loss of confidence from other members of the team and the individual approach to solve a problem might be in direct contrast with the objectives of the organization. The individual conclusions and framing the organizational objective according to one own desires will give rise to loss of respect for each other without noticing the fact that the main loss is to the organization. However, the main reason for all these problems is due to absence of alignment among the team members, within the different departments of the organization and between the objectives of the team and the organization (Chonko and Weeks, 2008; Guenzi and Troilo, 2006; Homburg and Jensen, 2007; Homburg, Jensen, and Krohmer, 2008; Kotler, Rackham, and Krishnaswamy, 2006; Lorge, 1999; Mattysens, Dawes, and Massey, 2006; Strahle, Spiro, and Acito, 1996).

Generally, the employees are accustom to the norms and culture of the organization. Therefore, it is very difficult to bring a change into the organization culture. The employees shows resistance to the organizational cultural setup transformation that might challenge their sphere of authority. The conflicts, thus, arises among the different departments of the organization. The different departments and sections of the organization might have differences over their roles and responsibilities in the team. These differences may also not be limited to only roles and responsibilities of the team, but also due to the poor reward system, low motivation, ineffective communication strategies, personal priorities and sphere of influence(Chonko and Weeks, 2008).

The differences and conflicts are more prominent between the different sections and departments when the organization is to invest in some capital-intensive technologies and projects. Each department uses their resources and sphere of influence to get bigger share in these capital-intensive projects. This is the stage where the chances for misalignment are very high and the management has to be careful in dealing such a situation. The management has to eradicate these problems by aligning all the departments with the objective of the organization. For this, the competent people should have given the chance to be a part of the team for successful completion of the organizational objectives and goals. The organization is also affected by the internal and external environment, which may cause problems for the organization. The alignment of these external and internal aspects will help the organization to have a competitive advantage and helps in increasing the performance of the organization (Chonko and Weeks, 2008).

The project of plant turnaround maintenance is an asset management in which the assets are maintained through cleaning, overhauling and modification. However, the research shows that the

plant turnaround maintenance's supervision is a very difficult task for the management. The nature of the plant turnaround maintenance is different from ordinary projects of construction or other related projects in the sense that it has to be completed within the specific time-period and allocated budget. One of the study conducted shows that one fourth of the total plant turnaround maintenance projects completely failed to achieve a single objective of the plant turnaround maintenance. The study also showed that about 80% of all the turnarounds do not achieve one or more objectives of the plant turnaround maintenance. The reasons for such situation might be many in numbers. One of the reason is that, "the teams" are not competent to carry out the plant turnaround maintenance. In other words, the team objectives and the organizational objectives are not align and integrated to achieve the common objectives, of the plant turnaround maintenance. The management lack the ability to improve this situation and has no planning for the development. The set goals are change frequently causing confusion and disruption of the activities of the organization. The team alignment is only possible, when the scope of the organizational work, its objectives and goals are clearly known. The information regarding the objectives of the business must be accurate so that the planning should be fruitful and results in high performance (Voogd, 2014). The alignment has to be monitored and prevail through best planning for the successful accomplishment of the business goals and the development of the projects (Vichich, 2006).

The alignment in the team members is very crucial for the success of any project. It results in the positive attitude and behavior of the team members, which gives the organization a competitive edge through high performance (Adkins, Ravlin, and Meglino, 1996; Lynn Fitzpatrick, 2007; Nyberg et al., 2009). The alignment gives the opportunity for activities to be carried out with ease and low supervision. Members know their roles and responsibilities. The open communication among the team members help them to resolve conflicts among themselves and helps in resolving the problems regarding the work activities. The team member have high collaboration and coordination, which results in high rate of task achievement. The members are easily convinced to take decisions through mutual discussion. The personal differences are set aside and the focus is towards the common objective of the organization (Nyberg et al., 2009). The research indicates that what so ever the management uses best practices of planning, coordination, leading and control, the importance of the alignment could not be ignored. As the plant turnaround maintenance is an asset management and most of it is different from the other projects, therefore the alignment is an essential element for the successful completion of the plant turnaround maintenance.

### ***The Mediating role of Team Alignment***

The concept of alignment was first used to integrate the business strategy and the information technology. Numerous studies were conducted in the past to know the methods and procedures to measure the alignment. A scholar named (Venkatraman, 1989) has made efforts to measure the alignment and his research is mainly focused on finding best suitable techniques to measure the alignment. Some other scholars like (Van de Ven and Drazin, 1984) have also focused their researches to investigate the concept of integration and alignment and the methods and techniques to measure it. These scholars were mostly concern with the implications of the alignment in the business environment and its impact on the performance of the organization both at theoretical and operational level. Among these scholars, the Venkatraman (1989) was able to formulate six different techniques and procedures to define and measure the alignment. These are covariance, gestalt, profile deviation, matching, moderation and mediation. On the other hand, (François Bergeron, Raymond, and Rivard, 2001) stress that; it is that particular circumstance, which chooses

the best technique to measure the alignment (Ismail and King, 2014). In the mediation, the alignment act as an intermediary between the dependent and independent variable. The mediation approach is used in many studies for measuring alignment. The mediation approach was tested by (Francois Bergeron and Raymond, 1995) and (Teo and King, 1996) in their studies. The empirical studies of these scholars confirm the positive relationship between the dependent and independent variables using alignment as a mediator (Kefi and Kalika, 2005).

The alignment is used as a mediator in a number of studies. One study used goal alignment as a mediator to find the impact of the behavior on performance and the results were found to be positive. The results of this study suggested that the positive behavior between different groups results in high performance when they are align with the goals and objectives of the organization (Stephen and Coote, 2007). Similarly, the alignment is used as a mediator between the flexibility and performance and the positive results convince the management to deal alignment as a competitive edge with highest priority. The alignment importance is growing as the business performance is improved when the alignment and integration is used in the management of the organizational activities (Chan and Reich, 2007). As the Venkatraman (1989) has devised and suggested six different techniques to measure the alignment, however there are some scholars, such as (Chan, 1992; Chan, Huff, Barclay, and Copeland, 1997; Cragg, King, and Hussin, 2002; Sabherwal and Chan, 2001), who prefer the mediation techniques over the other techniques for measuring the alignment, as the mediation approach of alignment can easily explain the relationship between the dependent and independent variables and conclusions drawn could be rather easy. Yet, other scholars suggests that the circumstances of the organization plays a vital role in deciding the type of approach in measuring the alignment (Taskin and Verville, 2010). The previous results and studies shows that the mediation approach for measuring alignment gives positive results and the conclusions drawn could be easily explained. So for the current study, alignment is used as a mediator for finding the impact of management function of leading on performance of the plant turnaround maintenance.

### **Research Methodology**

The primary data is collected through different ways including surveys questionnaires, focus groups, personal interviews, experiments and observational studies. In all these methods, the survey questionnaires is a convenient data collection method. In this method, the instruments are adopted or adapted from the literature or new questionnaires are develop according to the nature of the variable. These items are thoroughly checked for their clarity and easy understanding. The questionnaires items are used to outline and examine the cultural traits, individuals and societal awareness, qualities, assessment abilities, capacities and behaviors and attitudes (Fink, 2003, 2008). The questions are designed in such a way to judge and know the qualities and perceptions of the population (Salant, Dillman, and Don, 1994). Generally in the survey questionnaires, certain dimensions of the population is ought to be known which are the main focus, goal and objectives of the research study. In the case of alignment, the attitudes, behaviors and capacities of the population are studied with respect to the organizational targets, team goals and individual objectives (Reich and Benbasat, 1996).

The current study is carried out in the companies, which carried out the plant turnaround maintenance. The focus of the study is the process-based companies. These companies are involved in the production and manufacturing of different products and services continuously. These process companies are capital intensive in terms of a large number of physical assets and

high usage of technology. The companies selected for this study includes, power plant, cement plants, petrochemical plants and oil and gas plants, located in different parts and states of the Malaysia. The frequency of the plant turnaround maintenance depends on the type and kind of assets, technology and the products and services produce in the organization.

### ***Sampling Design***

- a) Target Population: The plant turnaround maintenance staff is the main population for the study. The staff includes Turnaround Managers, Turnaround Engineers, Turnaround Supervisors and Turnaround Technical Workforce
- b) Sample Size: A total of 96 companies were contacted to be part of the research survey. About 39 companies responded. However about eight companies send incomplete survey questionnaires which were excluded from the study. A total of 31 companies survey questionnaires were found to be valid yielding a response rate of 32%, which is good for carrying on the current study. These companies are from oil and gas, petrochemicals, palm oils, cement companies and power plants.
- c) The Sampling Design. Simple Random Sampling (Probability Sampling): One of the sampling method in the probability sampling is the simple random sampling. It is the simplest sampling technique in which all the members of the population of the study have equal chance of selection (Sekaran, 2009). This sampling technique have little chances of biasness in the information collected as the members are randomly selected. The results obtained might have little problems in interpretation and the conclusions could be easily drawn from the analysis results. In the current study, the simple random sampling method is use for the sampling of the population.

### ***Sources of Measuring Instruments***

The interval scale is consist of a scale called five point Likert Scale. This scale uses five different options from strongly agree to strongly disagree. This scale is use for measuring the variables of leading, alignment and performance. The number of items for measuring leading is ten (10), Alignment is twenty-eight (28) and performance is seven (7).

### ***Data Analysis Techniques***

The data analysis is done by using the statistical software for social sciences named as Statistical Package for Social Sciences or simply SPSS. The software version is 22. The reason for using the SPSS is that the number of samples is 31. This number of samples could be easily analyzed through SPSS.

## **Results**

### ***Descriptive Statistics and Correlations***

The mean and standard deviation for the leading, alignment and performance are shown in the descriptive statistics in Table 1.

Table 1. Descriptive Statistics and Correlation

	Mean	Std. Deviation	Leading	Alignment	Performance
Leading	4.34	0.31	1		
Alignment	4.29	0.26	.796**	1	

Performance	4.15	0.26	.585**	.777**	1
**. Correlation is significant at the 0.01 level (2-tailed).					

The questions ask in the survey about the leading were central in the case of the plant turnaround maintenance as the plant turnaround team give more importance to it. The mean value for the leading is  $\mu=4.34$  and is higher than the mean value of the variables of alignment and performance. The mean value for alignment is  $\mu=4.29$  and for the performance is  $\mu=4.15$ . The variance from the mean is represented by the standard deviation. The standard deviation for the leading is  $\sigma=0.31$ , for alignment  $\sigma=0.26$  and for performance  $\sigma=0.26$ . The value of the standard deviation depends upon the level of dispersion of the data from the mean. The closer the data together the smaller the standard deviation. The high the dispersion of the data from the mean, the higher the value for standard deviation. In the current study, the data for leading is more disperse than the data of alignment and performance.

The correlation among the variables of leading, alignment and performance are also given Table 1. The correlation for the leading with the performance is  $r=.585$  and alignment is  $r=.796$ . Similarly the correlation between the alignment and performance is  $r=.777$ .

### **Regression Analyses**

In the business processes, the statistical test of regression is very important for business uses. The direction of the impact and assessment of strength between two or more than two variables are known through the regression analysis. Four types of impact analysis are carried out of the predictor variable on dependent variable and the mediating variable. The four different impacts of predictors on dependent and mediating variable are given below:

1. The predictor variable and the dependent variable i.e. Leading verses Performance.
2. The predictor variable and the mediating variable. i.e., Leading verses Alignment
3. The mediating variable and the dependet varaible i.e., Alignment verses Performance
4. The predictor variable and the dependent varaible using a mediating variable.

The detail of these four different types of impacts are given below.

### **The predictor variable and the dependent variable i.e. Leading verses Performance**

The regression analysis of the leading and performance is given in Table 2. The impact of the leading on performance is given by beta value of  $\beta=0.493$ , t-value=3.889 and  $p<0.01$  showing significance at 0.01 confidence interval. The value of R-square explains the dependent variable through the predictor. In this case, the predictor variable is leading and the performance is the dependent variable. The leading explains 34.3 % of the performance of the plant turnaround maintenance which is R-square  $R^2=.343$ .

Table 2. Regression Analysis: Leading verses Performance

	Performance			
	Beta Value	R square	T value	Significant values
Leading	.493	.343	3.889	.001

The above table for leading and performance can be represented by Figure 2:

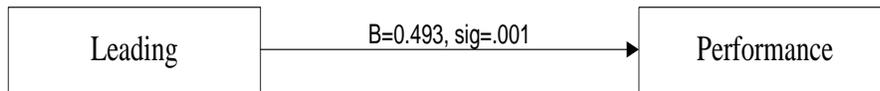


Figure 2. The impact of Leading on Performance

**The predictor variable and the mediating variable. i.e., Leading verses Alignment**

The analysis of regression for the leading with the alignment is shown in the table 3. The impact of leading on alignment is represented by the beta value of  $\beta=0.674$ ,  $t\text{-value}=7.085$  and  $p<0.01$  having significance at 0.01 confidence interval. The predictor variable of leading has R-square  $R^2=0.634$ , which explains 63.4% of the dependent variable of alignment.

Table 3. Regression Analysis: Leading verses Alignment

	Alignment			
	Beta Value	R square	T value	Significant values
Leading	.674	.634	7.085	.000

The impact of leading on alignment is given in the Figure 3.

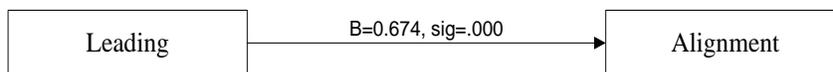


Figure 3: The impact of Leading on Alignment

**The mediating variable and the dependet variable i.e., Alignment verses Performance**

In the third step, the regression results for the impact of the alignment on performance is shown in table 4. The beta value of  $\beta=0.773$ ,  $t\text{-value}=6.651$  and  $p<0.01$  having significance at 0.01 confidence interval, showing the influence of the alignment on the performance. The R-square  $R^2=.604$  which means that the alignment explains about 60.4% of the performance.

Table 4 Regression Analysis: Alignment verses Performance

	Performance			
	Beta Value	R square	T value	Significant values
Alignment	.773	.604	6.651	.000

The figure 4 given below shows the impact of alignment on performance.

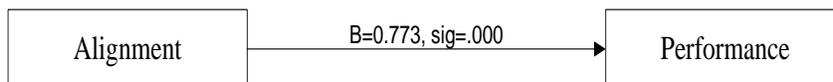


Figure 4. The impact of Alignment on Performance

In the fourth step, the mediation approach is used. The alignment is used as a mediating variable in this fourth step.

**The predictor variable and the dependent variable using a mediating variable. Leading with performance using alignment as mediator**

The regression analysis of the leading and performance is given in the Table 5. The alignment is

used as a mediator in this step. The beta value  $\beta=-0.077$ ,  $t=-.465$  and  $p<0.646$  shows non-significance of the impact of leading on performance. The beta value  $\beta=0.845$ ,  $t=4.340$  and  $p<0.001$  shows significance at confidence interval at .01 between the alignment and the performance. In this case, as the alignment is the mediating variable between the leading and performance, so the results shows that the impact of leading on performance is fully mediated by the alignment. In other words, the leading has no influence and impact on the performance in the presence of the alignment. The value of  $R^2=.607$  shows that the leading explains about 60.7% of the performance when the mediator is present.

In the first step when the alignment is not used as a mediator, the value for the R-square is  $R^2=.343$  whereas after use of alignment as a mediator the value of R-square is  $R^2=.607$ . It means that due to the use of alignment as a mediator, the leading could explain more of the performance.

Table 5. Results of Mediation Regression Analysis

	Performance			
	Beta Value	R Square	T Value	Significance Value
Leading	-.077	0.607	-.465	.646
Alignment	.845		4.340	.000

The model of Leading and Performance using the alignment as a Mediator is given below in Figure 5.

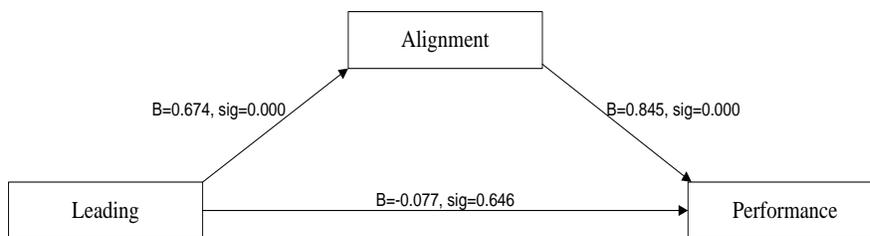


Figure 5. The impact of Leading on Performance using Alignment as Mediator

### Conclusion

The importance of the leading cannot be undermine in an important event involving huge resources of finances and humans, which in this case is plant turnaround maintenance. The plant turnaround maintenance is consider successful when its performance is high in terms of completion within the schedule time and allocated budget. The quality of the work is eminent in case there are no reported accidents and incidents regarding health, safety and environment. The team building as an important part of the leading helps in the achievement of the high performance when aligned with the overall goals and objectives of the plant turnaround maintenance. The team alignment used as a mediating variable in this study, helps in achieving greater influence of leading on performance of the plant turnaround maintenance. This study suggests that the leading is important as the other functions of management such as planning, coordination and control. The objective of the study is achieved through the results, which suggests that, there is a profound impact of the management function of leading on the performance of the plant turnaround maintenance. The results of the study also advocates the team alignment acts as a mediator between leading and performance. Hence, the second objective of the study is also achieved. This study will help in understanding

the use of leading function of management in plant turnaround maintenance and its effect on the performance using team alignment as a mediator.

The plant turnaround maintenance is very important for the people, who are involved in its initiation, planning execution and termination, which includes turnaround supervisors, turnaround technicians, turnaround maintenance workers, turnaround engineers, investors and business owners. This study will provides the turnaround personals and the researchers an opportunity to understand the concept of leading and its influence on the performance by considering team alignment as an important aspect of the plant turnaround maintenance.

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# Translating Safety Policy into Practice: The Role of Management in Oil and Gas Industry in Malaysia

Ahmad Shahrul Nizam Isha

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

Email: shahrul.nizam@petronas.com.my

## Abstract

The oil and gas industry in Malaysia has been a rapidly growing since the last 30 years. Since the operations of oil and gas industry is always associated with major hazards and the issues of health and safety has become a priority to the government and stakeholders. In reviewing the occupational health and safety (OHS) policies of few operating companies, it was found that the operations are highly committed in adapting aspects of their operations in strictly compliance with all OHS requirements. In terms of safety practices, all operational workers permanent or contractors are compulsory to adhere to all safety prescription while working in the operation site or critical area. The establishment of Health Safety and Environment Unit of Department (HSE) lead by experts in safety is a good example of the management commitment to ensure safety at all time.

**Purpose:** The aim of this study is to examine the occupational health and safety (OHS) practices at the oil and gas organizations in Malaysia, and the role of management to increase OHS in the oil and gas industry.

**Design/methodology/approach:** This qualitative study were conducted at four oil and gas companies operated in different locations. Employing a purposive sampling an interviews with selected personal form top management in charge of OHS and Human Recourse Management down to the operational workers has been conducted. The interviews aim to explore the insights of companies' OHS policy and commitment to ensure safety practices across the organization.

**Findings:** The study has found that the top management of the company is highly committed to ensure safety in their operations. This is shown by the operational workers who are highly aware about the safety policies and procedure and they are supporting the management commitment in implementing OHS in the organization.

**Practical implications:** The study has proven that the top management attitude plays an important role to ensure safety in the organization. The translation of safety practices throughout the organization will only become a myth without a full commitment form the top.

**Originality/value:** This study that explore on both perceptive; the management (employer) and the workers (employees) about safety in the organizations. By looking at both parties' views and commitment only than a comprehensive conclusion can be withdrawn to meet the study objectives and answering the study questions related to safety practices in oil and gas operations in Malaysia.

**Keywords:** Occupational health and safety (OHS) practices, oil and gas safety.

## Introduction

The oil and gas industry in Malaysia has been growing rapidly in recent years, it contributed to 40 percent of federal revenue per annum against taxed and dividends (Mansor et.al, 2013). The

development of this highly hazardous industry largely depends on high health and safety standards setup by the stakeholders and management of the company. It has been suggested that management plays an important role in the total safety system, and the design and management of safety systems is a reflection of the organizational culture (Cox, Tomas, Cheyne, and Oliver, 1998). Meanwhile, management commitment and the extent to which employees embraced safety practices are factors which contribute to safety climate in an organization (Choudhry, Fang and Lingard, 2009).

The global burden of occupational mortality and morbidity indicates that the world still faces a high challenge in terms of the translation of current occupational safety and health (OSH) standards into actual practice across all levels. A legal requirement for safe working practices and the threat of prosecution does not necessarily guarantee the law is obeyed (Creedy, 2005). This is partly because work pressure is the most common stressor; and safety is often seen to be conflict with other performance aspects (Zohar, 2002). This apparent lack of regard for safety thus points to an even more pressing need to link safety with other job aspects such as productivity, quality, profitability, or efficiency, for it to be considered to be as important (Alaimo, 2004).

Furthermore, many studies have suggested that commitment from all related parties in translating policy and standards into practice significantly contributes to the standard of safety in any organization. The rapid development of new technology has fundamentally changed the nature of work and has increased the complexity of systems within a variety of industries (Hendrick, 1991). Among these complex systems are those commonly known as “high-risk” systems, such as nuclear power plants, chemical processing facilities, and aviation operations that require a tight coupling between both technical and human factor. The failure of either subsystem can often cause a failure of the entire system (Wiegmann, et.al. 2002). Furthermore, changes to work routines or adoption of new technologies and materials create new hazards; some hazards are beyond the perception and understanding of all but scientists, such as nanotechnologies (Mylett, 2010). There are also evidences from official investigation reports that indicated poor safety practices is one of the leading factors to the number of industrial disasters (Serveso 1976, Bhopal 1983 and BP Grangemouth 2000).

A safe and healthy organization starts from plant design installation which follows the standards and guidelines setup by the authorities. Then it is the company’s management responsibility to provide a safe and healthy working environment without compromising the quality of their products. Gunnigham (2007) has clustered management motivation towards safety and health in the organizations in four different point of distinction i.e. OHS Leaders, Reluctant Compliers, The Recalcitrant and The Incompetent.

The first type is OHS Leaders, which are regarded as excellent OHS performance as a priority for which, in managerial jargon, there is a compelling ‘business case’. In contrast, the so called ‘reluctant compliers’ are generally reactive on OHS issues and inclined to regard OHS as imposing costs rather than provide opportunities for increased productivity, profit or reputation advantage. Because of this belief, they rarely look for opportunities to improve production or profitability through improved OHS performance. In addition, ‘the recalcitrant’ view OHS as a substantial business cost with few compensating benefits. For this reason, OHS is treated as subordinate to production and short term profit maximization. ‘The incompetent’ is considered as the management that did not take any action to in improving the OHS standard in their organizations. And, their very rudimentary understanding of OHS legislation and safety performance is seriously inadequate (Gunnigham, 2007). Barling (2012) suggested that safety-specific transformational leadership provides an opportunity for enhancing occupational safety that goes beyond ergonomic design or

regulator approaches (Barling, Loughlin and Kelloway, 2002). A study to evaluate how oil and gas organizations in Malaysia perceived safety is an important step to obtain an empirical evidence of health and safety practices at the ground level.

### Study Objective

The aim of this study is to examine the occupational health and safety (OHS) practices at the oil and gas organizations in Malaysia, and the role of management to increase OHS in the oil and gas industry.

### Methods

Semi structured interviews were conducted over telephone conversations with 19 (n=19) respondents. These respondents represented different levels of organizations’ personnel i.e. top and middle management, managers, engineers, technicians, and OHS doctors/nurses. Each of the interview sessions took about 45 to 90 minutes and was recorded. The interviews were transcribed and analyzed using thematic analysis. The key elements that have been explored in this study were OHS policy, management and communications, psychological issues, OHS monitoring, OHS initiatives and training.

### Results

This section presents the results of the study based on the interview with the respondents based on the following aspects:

#### *The Organizational Commitment on Occupational Health and Policy (OHS)*

The interviews carried out with the companies’ stakeholders have given a broad understanding about the level of occupational health and safety (OSH) practices which can be explained in table 1.

Table 1: Organizational Commitment on Health and Safety

<i>Items and Scores</i>	<i>Excel</i>	<i>Good</i>	<i>Adequate</i>	<i>Poor</i>
<i>OHS policy</i>	√			
<i>Management and communications</i>		√		
<i>Psychosocial</i>				√
<i>OHS monitoring</i>	√			
<i>OHS initiatives</i>		√		
<i>OHS training</i>			√	

Table 1 indicates generally the company’s commitment towards OHS in the organization. The scores have been given based on the overall findings of the study gathered from the interviews and site visits. All the companies in this study have an “excellent” score in terms of formulating and implementing OHS policy throughout the organizations. All companies participated in this study have a written OHS policy statements that determine the direction of safety and health implementation in their organizations. An “excellent” score have also been given to the OHS monitoring to show the company commitment to ensure OHS policy is followed throughout the organization. Such company has its own method to ensure people in the organization follow the OHS procedure at the work site.

### ***OHS Initiatives and Monitoring***

The management of all the companies participated in this present study has pleaded that they have regarded safety as a priority in their organizations. The integrated safety and health facilities developed together with the plant operation facilities have shown their commitment in the investment of safety besides meeting the required standards. In line with the physical OHS facilities, all companies participated in this present study have clear written policy statements explaining the management commitment on health and safety. One of the common statements found in the written policy is the promise to provide a safe and healthy organization while at the same time it producing high quality products. From a general company visit and information gathered from the interviews, the policy statements were displayed in every department to ensure all workers have access and are aware about it. The written policy statements however strong possibilities to be changed based on different circumstances for example management change, changing of the company's or government's policy. Review of the companies' policy indicated that the companies have developed their health and safety policy tailored with the existing OHS regulations in Malaysia. The requirement for all the employers to have a written policy statement was stated in Table IV point no 16, Occupational Safety and Health Act (OSHA) 1994;

*it shall be the duty of every employer and every self-employed person to prepare and as often as may be appropriate revise a written statement of his general policy which respect to safety and health at work of his employees and the organization and the arrangements for the time being in force for carrying out the policy, and to bring the statement and any revision of it to the notice of all of his employees. (OSHA, 1994).*

The companies have also shown their high commitment in implementing their established OSH policy by providing a physical OHS facilities and supports that are needed to achieve the policy target through training, and communications activities. The staffs' feedback showed "good" score on management and communications (see Table 1).

### ***Psychosocial Issues at Work***

On the other hand, this study found issues of concern among the respondents especially the aspects of psychosocial issues at work and OHS training which was given a "poor" score respectively (Table 1). It was found that the developments of OHS structures and facilities which are the focus of technical or physical issues have neglected psychosocial issues. The psychosocial issues cover such as high workloads, tight deadlines, working methods, relationships with supervisor and colleagues which lead to stress. Although in all the companies' policy there is a statement that indicated to operate with full consideration of OHS requirements, but in actual fact only minimum concern has been given to these issues. Work stresses are recognized world-wide as major challenges to workers' health, and the healthiness of their organizations (Leka, Griffiths and Cox, 2004). Together, they may be the major cause of accidents, fatal injuries, work related disease and absenteeism at work in both industrialized and developing countries (NIOSH, 2012). As cited from Richardson and Rothstein (2008), The American Institute of Stress reported that stress is a major factor in 80% of all work-related injuries and 40% of workplace turnovers (Atkinson, 2004). The Confederation of British Industry reported stress as the second highest cause of absenteeism among non-manual workers in the United Kingdom, and the European Foundation for the Improvement of Living and Working Conditions reported that stress affects a third of the European working population (Giga, Cooper, and Faragher, 2003). In Australia, most states report an increasing

number of annual workers' compensation claims resulting from workplace stress (Caulfield, Chang, Dollard, and Elshaug, 2004).

This study found that all of the companies have organized company trips, games and family day in the effort to break the communication barrier, reduce stress of work and build a close relationship among the workers and their superiors. Nevertheless, there is no further exploration in this study to identify how far this activity contributes to reduce among the staffs of the companies. However, the researcher assumed that this little effort is not enough to encounter entire psychosocial problems in the organizations. A study of Canadian health care workers (Arnold et al., 2007) suggested that positive mental health effects have been associated with transformational leadership. The study also suggested the interventions that organizations can make to improve well-being of workers. This study also found that the training department in one of the companies showed a little bit of their concern about the needs to improve the workers' communication skills and has included training of communication skills and leadership which available for all workers from different categories. This is the only initiatives that address social issues while the rest were skewed towards technical aspects.

Majority of the respondents agreed that their nature of work, shift rotation among the operators lead to stress. Robert Karasek's theory predicted that the most stressed workers will be those whose jobs place the demands on them while allowing them very little control over meeting expectations (Karasek, 1979; Karasek and Theorell, 1990; Baker, 1985). Working in a noisy and confined space adds further to the stress but very limited works have been done to encounter this problem. In fact, work pressure to achieve production target has a severe implication on the workers' performance. Baugher and Roberts (2004) study on workers' perception on hazards at work in US oil and gas industrial workers, found that workers who tend to experience less stress are those who believe they can turn off source of the stress or put on the safety equipment if they feel they need it (Baugher and Roberts, 2004).

In the present study, one of the interview respondents explained that he knew turnover among the production workers could be the result of workloads and pressure from the management besides looking for better pay in other places. Shortage of workers in his organization contributes to stress, as for some of the workers in the present shift had to work overtime at the following shift. Although the company provides overtime pay, meal and shift allowance this benefit does not really eliminate the job stress. Juhdi et.al (2013) indicated that the major motive of this voluntary turnover is better pay, better growth and career opportunity. Although no official reports on the accident cases in site resulted from psychosocial factors, such as repetitive work and stress. Occupational health nurses in one of the company believed that some of the health problem cases experienced by the workers are associated to stress. This is because the investigation of work accidents at this company did not take an account of psychosocial factors as one of the causes leading to the incident. A production engineer of the same company said that based on the previous accident investigations, most of the accident occurs when workers did not follow work instruction and also due to some of the technical failure. His explanation on this issue has shown that the psychological factors never been considered as factors contributes to the cases of work accidents.

### ***Occupational Health and Safety OHS Training***

The following issue identified in this study indicated different views between managers and operation supervisors on health and safety training and safety priorities in one of the company. Lack of sufficient and updated OSH training was reported by middle management. The OSH

managers in one of the company explained that all new workers were given basic OHS training before they are permitted to join the operational team in the production line. After completing this training, the new operators will be also being given on the job training while working on normal day shift. After three weeks working on the normal shift this operator will be working on rotational shift system and they will be given training at interval time basis. With this way, new operators will get to know everyone in the shift rotation system after working in their team for a week.

Interestingly, in another perspective, the production supervisor has given a different response. He informed that all new workers often did not undergo basic OHS training but were directly assign to work at the production department without formal training on OHS. To cover the shortage of production operators in every shift, new operators only work few days in the day shift and then transferred to the ongoing rotation shift. The condition where the workers were forced to work overtime, lack of training and pressure to meet the production target has put the production team in a vulnerable risk of work frustration, stress and turnover.

Another issue found in the aspect of training is about training updates. Lack of training updates has created frustration to some of the middle management at the production department. One of the respondents claimed that the management failed to provide OHS training updates to all the workers. In his 18 years of working with company, he only attended one OHS training at the National Institute of Occupational Safety and Health (NIOSH). His request to attend external training or to organize internal training conducted by external experts on OHS were rejected by the top management.

In another organization, two of the respondents have given their views on training that need to be revised to suit the latest change which involve methods of production and chemical usage. Any change of procedures, production technique and technology used should be followed by OSH update training to suit with the latest development. One of the production engineers suggested that top management must review the needs of OHS training currently prioritized on aspects of technical skills at work. He suggested that the company should provide middle management training related to social behavior, risk communications and leadership. Reliable OHS training which covers all aspects of work should be implemented in all organization. Studies on a few major accidents in highly hazards industries such as Serveso, Bhopal and BP Grangemouth have shown the factors leads to the tragedy was a combination between the technical failure and the human error (Serveso 1976, Bhopal 1983 and BP Grangemouth 2000).

### **Conclusion**

The findings of this study have revealed the views of top and middle management on actual OHS implementation at organizational level. It was found, that all the companies in this study have shown their commitment to implement health and safety beyond the minimum standard requirement. The initiatives to establish site clinics with occupational health doctors and paramedics, internal fire and emergency teams, extra allowance for work safe and emergency facilities indicated that the companies are cautious on the priority of safety. The companies' management efforts to maintain and enhanced the international reputation of operating in safe and healthy environment is one of the motivation as well as products marketing strategies. The study has found that the management plays an important role in promoting OHS culture in the organization.

It is recommended that since the psychosocial issues at work have now come to the fore of international research on OHS, studies in relation to this issue specifically in the context of oil and gas industries are desirable. This study has found that limited position has been given to

psychosocial issues as compared to other types of hazards in the oil and gas industry industries in Malaysia.

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# Psychological Well-being and Fatigue Impact on Aberrant Driving Behaviors in Oil and Gas Sector of Malaysia

**Asrar Ahmed Sabir\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

Email: asrarwattoo@gmail.com

**Ahmad Shahrul Nizam B Isha**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

Email: shahrul.nizam@petronas.com.my

*\* Corresponding author*

## **Abstract**

**Purpose:** The study aims to propose a framework for heavy vehicle drivers working in oil and gas sector of Malaysia. This study focuses on the dimensions of psychological well-being and fatigue that impact on aberrant driving behaviors.

**Design/methodology/approach:** This study will be conducted among tankers drivers in oil and gas companies which are operated in different states in Malaysia. The study will employed quantitative approaches where the data will be collected by self-administrated questionnaire.

**Findings:** The findings of this study will be helpful with regard to implementing the driver's safety training interventions among heavy vehicles drivers.

**Practical implications:** This study is related to the drivers' well-being and fatigue that have impact on aberrant driving behaviors. The aberrant driving behaviors is a threat for health and safety department. This study finding will help the practitioners to modify policies with regards to heavy vehicles drivers' duty timing, shift hours and well-being.

**Originality/value:** A very rare literature emphasized the drivers' well-being that contributes on aberrant driving behaviors but lacking to overcome the fatigue through driver safety training. However, this study based on in-depth literature to find out the drivers psychological well-being dimensions that triggers fatigue into aberrant behaviors and leads to fatal crashes. This study contributes the importance of safety training interventions among truck drivers to minimize the fatal crashes.

**Keywords:** psychological well-being; drivers fatigue; aberrant driving behaviors

## **Introduction**

Researchers draw a distinction between well-being from life and well-being related with a particular area of life (Blanchflower and Oswald, 2004). Empirical evidence shows some dimensions of psychological well-being. However, this study focus on psychological well-being dimensions are stress, sleep deprivation and substance usage. The literature suggests that the psychological well-being dimensions explained in the preceding paragraph have been found to have momentous effect on driving behavior.

This research is about to psychological well-being dimension related with heavy vehicle drivers' fatigue impact on driving behavior. The potential of using psychological stress, sleep deprivation and substances are the indicators of driver fatigue. Most of the workers exposed to shift work experience disruptions in sleep that result in anxiety and fatigue (Lal and Craig, 2001). However, the oil and gas truck driver's fatigue and behavior need more attention with different aspects. There have been slight endeavors to review this area very critically with the perspective of heavy vehicle drivers' fatigue and driving behavior, especially in the oil and gas sector of Malaysia.

The state ranges symptoms is between deep sleep, drowsy, weary, light sleep, awake, resting, relaxed, alert, stimulated and a state of alarm all called the mental fatigue (Thorncroft, 2000). A feeling of weariness might not be a problem if one is allowed to rest, but it could be disturbing to an individual if the individual cannot relax (Grandjean, 1988). At any moment a person is in a specific state of sleep and state of alarm. The high level of psychological distress in employees of fulltime working hours seems to be high as compared to the part time employees. The symptoms of mental health, such as difficulties with attention, motivation, concentration and decision making, cause the mental fatigue of drivers (Robotham, 2011).

Another study was conducted on the physical fatigue of the seat interface pressure amongst drivers (Balasubramanian and Jagannath, 2014). The oil and gas truck drivers tend to be stressed by a long journey as they travel long distances in the oil supply process. The psychological factors need to be investigated as a way of mitigating fatigue.

### **Drivers' fatigue and psychological well-being**

Three dimensions of psychological well-being will be applied to assess driver fatigue and behavior, such as sleep deprivation, substances usage and stress. The sleep deprivations further asses with shift work, number of hours sleep and commuting time. The substances usages are the attention of smoking, alcohol and drug addicted. As, the aged employees are less addicted to drugs and concentrate more as compared to the young drivers (Adrian, Postal, Moessinger, Rasclé, and Charles, 2011). The stress has depression, anger and anxiety. The driving related stress generated from personal and environmental factors are the cause of drivers being stressed (Ge et al., 2014a). More complicated tasks performed by the drivers, such as driving on curved roads on various environments, are related to the drivers cognition and behavior (Liu and Wu, 2009). The driver copes with the curvatures of the road but sometimes on a straight road the vehicles performance also tends to be deteriorated.

### **Aberrant driving Behavior**

The study has shown that fatigue changes the driving behavior and this behavior is going to be aggressive depending on the personality traits of the truck drivers. The operational definition of aberrant driving behavior is "aberrant driving is any on-road behavior adopted by a driver that is intended to cause physical, psychological and societal harm to another road user and is associated with feelings of frustration, anger or threat"(O'Brien, 2011). So, the question is raised, "Does the driving behavior of heavy professional drivers matter?" The latest literature answered this question by using the driving indicators of load weight, average speed, and the number of stop and brake applications (Walnum and Simonsen, 2015).

The behavior of drivers can be monitored and modified by using vehicle data recorders for the means of providing feedback to drivers (Wouters and Bos, 2000). However, for the sake of the safety climate, the driving behavior should be positive rather than aberrant amongst heavy truck drivers.

**Driver safety training**

The driver training has a long run effect to minimize the number of accidents amongst truck drivers (af Wählberg, 2007). Another way to reduce accidents is driver education related to road safety measures. The driver training and education enhances the self-control and motivation amongst professional drivers (Hatakka, Keskinen, Gregersen, Glad, and Hernetkoski, 2002). It is broadening the concept of driver education. The purpose of driver education is to develop a DTIC (Driver Training Curriculum Implementation) scale for analyzing driver training. The driver needs higher ordered training elements, such as perceptual, motivational and vehicle handling skill training on road driving performance (Isler, Starkey, and Sheppard, 2011). Basically, the aim of skill training is to develop an advanced training mechanism for heavy vehicle drivers that reduces the crash risk in demanding driving situations (Rosenbloom, Shahar, Elharar, and Danino, 2008).

The driver behavior needs appropriate training for safety climates. There is a positive association between driver training and the determinants of risky driving behavior (Tronsmoen, 2010). The driving behavior's feedback helps to initiate a training programme for drivers.

**Literature Review**

The psychological well-being dimensions related with heavy vehicle drivers fatigue need to be observed in a systematic way (Sang and Li, 2012). The psychological well-being dimensions (stress, alcohol usage and sleep deprivation) have importance for road safety. These psychological well-being dimensions create distraction amongst drivers at the time of duty but the ability of drivers needs to be self-regulated in response to the performance of work activities (Naweed, 2013).

This study has concentrated on the moderation of safety training on work related fatigue and driving behavior amongst heavy vehicle drivers. There are many factors associated with heavy vehicle drivers' fatal crashes. The novelty of this research is to identify fatigue related risk factors and dimensions of psychological well-being that impact on driving behavior amongst oil and gas tankers truck drivers working in oil and gas sector of Malaysia. The transportation of oil and liquid chemicals is a very sensitive issue for heavy vehicle drivers, especially the transportation of oil by trucks from centralized plants to the end user (Pootakham and Kumar, 2010). Fatigue is a risk factor between sleepiness and reduced vigilance amongst professional drivers. The reason for these phenomena is that the professional drivers are on the road more as compared to the male drivers amongst public. The ratio of fatigue is higher in professional drivers because of shift work and overtime duties.

The numbers of accidents between light and heavy vehicles have been calculated in many studies. The studies show that the heavy vehicle drivers' fatigue has caused more accidents and injuries as compared to the light vehicle drivers (Friswell and Williamson, 2013). The light vehicle drivers remain within the premises of the cities and the heavy vehicle drivers need to shift the goods from one place to another. Sometimes drivers travel in rural areas and on unsafe roads that might be more risky for heavy vehicle drivers experiencing fatigue (Quera Salva et al., 2014).

Sleep deprivation and fatigue are recognized as safety issues in transportation industries. This sleep deprivation causes accidents amongst heavy vehicle drivers. The drivers need to sleep 6.28h per night according to the HOS regulations in the United States (Hanowski, Hickman, Fumero, Olson, and Dingus, 2007). The sleepiness behavior is different in different vehicles; like, the driver's behavior towards an automated vehicle control varies in different situations and the behavior may be changed due to visual attention (Merat, Jamson, Lai, Daly, and Carsten, 2014). The multidimensional measures of fatigue, such as visual fatigue, muscular

fatigue, boredom and malaise states, are associated with the personality of drivers (Matthews and Desmond, 1998).

### **State Trait Theory**

The founder of this theory is Spielberger's, who presented this theory in 1929 and that is related to the psychology of individuals and personality traits with the perspectives of driver behavior (Huang and Ford, 2012). The drivers are going to be stressed due to day to day driving. The aberrant behavior leads to vehicle crashes and fatalities.

The loss of vehicular control is because of a driver's aggressive behavior whilst driving. The stress impact on dangerous driving behavior causes fatal crashes amongst vehicle drivers (Ge et al., 2014b). The driver's anger depends on the situation whilst driving. The driver's anger with Malaysian drivers presented some factors of aggressive driving behavior, such as rudeness, traffic obstructions, hostile gestures, slow driving, illegal driving and police presence (Sullman and Stephens, 2013).

### **Theory of planned behavior**

Ajzen, presented the Theory of planned Behavior (TPB) in 1985 (Reinecke, Schmidt, and Ajzen, 1996). The theory of planned behavior is the best predictor of a person's behavior while driving. Basically, this predictor includes the driver's intention to perform safe behavior that would avoid making errors. The driver's attitude towards the safe driving behavior leads to good outcomes. Therefore, one is interested in understanding why drivers engage in risky behavior. The research shows that the psychological antecedents of driver behavior are the best predictors of driver behavior. The psychological antecedents lead to the driver's stress whilst driving a vehicle (Poulter, Chapman, Bibby, Clarke, and Crundall, 2008).

The theory of planned behavior (TPB) allows for behavioral intention, which is made up of the attitude to the driver's behavior and emotions. The risk of emotions in aberrant driving are more seen in young drivers (Iversen and Rundmo, 2012). A third determinant of TPB is behavioral control that was later added in the case of four driving violations: drunk driving, speeding, close following and dangerous overtaking (Redshaw, 2004).

### **Frustration-Aggression theory**

The Frustration-Aggression theory postulate that "aggression is always a consequence of frustration" (p. 1) and conversely that the existence of frustration or multiple frustrations always leads to aggression in some form, whether it be suppressed, disguised or delayed from the obvious goal or source of frustration i.e. displaced" (Berkowitz, Mowrer, and Sears, 1989). This theory is developed on the basis of frustration and their results. This theory explains that frustration leads to negative behavior which means that aggression is also come out from frustration of the individual. Thus frustration acts as an external factors which change the ultimate behavior of the person. For those that had been provoked, exposure to the trivial trigger strongly increased displayed aggression levels, even exceeding the aggression displayed in response to provocation alone (Pedersen, Aviles, Ito, Miller, and Pollock, 2002).

This study proposed a theoretical model with the support of theories. The model shown in Figure 1 depicts the driver psychological well-being dimensions. The work-related fatigue mediating the relationship between independent variables and dependent variable. The aberrant driving behavior is a dependent variable in this study. Driver safety training plays a moderating role between works-related fatigue and driving behavior in this proposed model. Each independent variable also has a direct impact on dependent variables (Baron and Kenny, 1986). The listed theories supported the proposed model of this study. The State Trait Theory related to the driver anger that impact on drivers driving behaviors. The driver behaviors changed due

to stress and aggression. This aggression leads to the frustration as explained in Frustration-Aggression Theory. These aberrant drivers driving need intention to perform safe drive as suggested in Theory of planned behavior (TPB). This intension will come by giving driver safety training. The proposed model is presented on the bases of related work and theories.

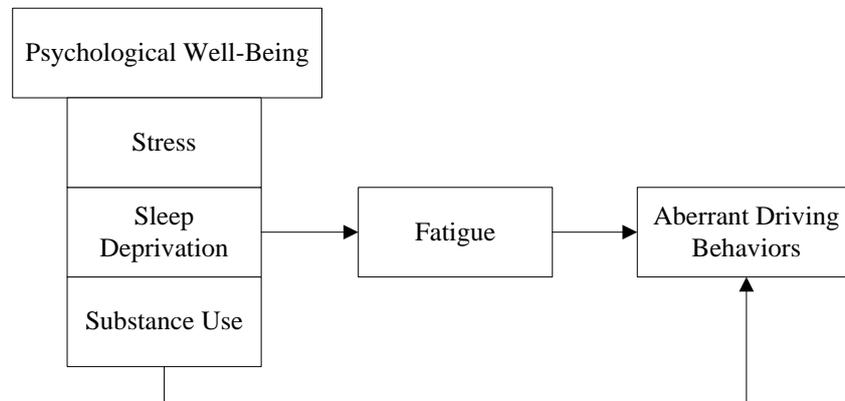


Figure 1. The Proposed Conceptual Framework

### Conclusion

The main focus of this research is to provide a framework for aberrant driving behavior and work related fatigue amongst oil and gas truck drivers in Malaysia. The unit of analysis is heavy vehicle tankers drivers working in oil and gas sector of Malaysia. This study has put emphasis on dimensions of drivers' psychological well-being and fatigue that impact on aberrant driving behavior. Furthermore, the drivers' behaviors questionnaire will be used to collect the data. The unit of analysis are heavy vehicle drivers working in oil and gas sector of Malaysia. Likewise, the driver safety training is needed to avoid vehicle crashes and fatalities.

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# Bridging and Bonding: How Gender Diversity Influence Organizational Performance

**Rohail Hassan\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*  
Email: rohail.hassan39@gmail.com

**Maran Marimuthu**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*  
Email: maran.marimuthu@petronas.com.my

**Satirenjit Kaur Johl**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*  
Email: satire@petronas.com.my

*\* Corresponding author*

## **Abstract**

**Purpose:** This paper shed light on this diversity at board level topic by conceptualizing the relationships as firm value and diverse board.

**Design/methodology/approach:** Reasonable theoretical arguments drawn from Upper-echelon theory and agency theory suggest that board characteristics (gender diversity) may have either a positive, negative, or a neutral effect on the firm value. Bridging as gender diversity and Bonding has firm performance. To investigate this phenomenon relevant hypotheses are developed to test diversity at board level and its impact on firm value with the use of appropriate variables and measures. For this empirical work, the board of directors attributes and financial data used over the period 2009 to 2013. A total sample of large 60 top Malaysian listed companies is selected on the basis of their market capitalization. This study incorporates econometrics methodology on panel data analysis, which is used rigorously for hypothesis testing.

**Findings:** The study revealed that ender diversity has no significant impact on firm value. The results indicate that demographic diversity at board level does have a relationship with market value.

**Originality/value:** Many governments seek to impose diversity in the boardroom, but the consequences of doing so are inconsistent and could decrease firm performance and economies. While extensive literature exists on diversity issues, this issue is still under debate and inconsistent results. Furthermore, there is a need to investigate this problem in a more holistic way and with rigorous statistical estimation. The paper attempts to fill the gap in the existing literature, discuss the empirically diverse corporate boards and impact on the firm performance.

**Keywords:** Gender Diversity, ROA, ROE, Board of Directors (BODs), Market Performance

**Paper Type:** Research Paper

## **Introduction**

One of the vital issues for corporate boards of listed firms are its board composition. Corporate board is considered to be balanced if its board members come from various backgrounds, which benefits it to perform more effectively. Developing societal, political and cultural views at top-

level management are part of demographic diversity. In addition, the global desire of firms to have better corporate governance (Monks and Minow, 2004). In past, the corporate world had faced high-profile scandals like Worldcom, Enron, and Adelphia, which cause of firms big failure. After this, many major firms had been shut down and many policy makers started to investigate the issues of corporate governance (Co-operation and Development, 2004). In 1997, Malaysian economy badly affected by financial crisis. The reason behind this corporate failure was poor practices of corporate governance among companies (Mitton, 2002). Diversity and corporate governance have a strong relationship in the context of top-level management. Boards of directors are leaders in the firms and responsible for taking a strategic decision and setting strategic goals. Diverse boards may better monitor managers and top management teams because of board diversity increase board independence (Carter, Simkins, and Simpson, 2003). Diversified corporate boards have a very significant impact on firm performance and firm value creation. As a result of this, wealth maximization and enhance stakeholder's confidence. Demographic diversity has a positive impact on firm performance (Hassan and Marimuthu, 2014). In contrast, researchers found that gender diversity among board members could result in poor firm performance (Adams and Ferreira, 2009). Women participation at board level has a positive relationship with organizational performance. Ethnic diversity among the board of directors can perform their responsibilities more effectively in (Marimuthu and Kolandaisamy, 2009). There is ambiguity among previous research regarding diversity issue at board level (Hassan, Marimuthu, and Kaur Johl, 2015). However, past studies used simple statistical tool and techniques to investigate the diversity issue. There is a need to investigate diversity issue in a more holistic way by using different sample size and sampling techniques (Hassan, Marimuthu, and Kaur Johl, 2015). Empirical studies showed that there is a strong correlation between demographic diversity and firm performance (Hassan, Marimuthu, and Kaur Johl, 2016). It is of great interest for many researchers to explore demographic diversity with regard to firm performance.

This paper focuses on investigating diversity at top-level management of large companies with regard to their firm value (ROA, ROE). The outcomes of this study will be useful to government, regulatory bodies and stakeholders of the companies in formulating future policy for the nation. A total sample of 60 large companies is considered from the population of 938 listed companies. Descriptive statistics, econometrics techniques and panel data techniques etc., are used. The remainder of the paper follows as such Sections 2 covers the theory and issues. In section 3, 4, and 5, theoretical model development, econometric methodology, and measures. Empirical results, discussions, and limitations of the study are explained in section 6 and 7 sections. Finally, this paper was concluded in the last section.

## **Theory**

This section first addresses a discussion and justification of the constructs in the proposed model, both the independent (gender) and the dependent variables (ROA and ROE). Then the research model and justification for the various prospered relationships are presented. Board diversity and firm performance in listed firms that are strongly associated with corporate governance in order to achieve good governance. A holistic view of the background of the study which includes research background, problem statement, research objectives, research questions, hypotheses of the study and significant of the study will be carried out in this study.

### ***Theoretical Perspective on Demographic Diversity***

In this dynamic environment, it is essential for organizations to see the impact of top-level management and firm value. In the context of board diversity, boards consist of different members with different characteristics and backgrounds, e.g. gender, age, and ethnicity that

cause an advantage for the success of firms. There is a strong relationship between diversity and firm performance. Diversity could lead to a firm’s competitive advantage (Abdullah, 2013; Lückcrath-Rovers, 2013). There is no specific theory that predicts the nature of the relationship between board diversity and financial performance. In this study, different social theories from various aspects discussed. Agency theory explains the board functions of monitoring and controlling managers. It based on the “agency problem” that arises when two parties have differing goals. The relationship between principal and agent defined as a contract where the principal engages the agent in his/her duties to the principal. Agency relationship plays a very important role in firm performance and its base on the composition of the board (Jensen and Meckling, 1976). The upper echelons theory is based on behavioral decision-making theories as well as concepts of organizational demography. Corporate boards are important and can be used for organizational outcomes such as firm performance and strategic achievements. This theory explains the impacts of demographic and cognitive diversity in the context of firm performance. Researchers argued that diversified boards can make more effective decisions as compare to homogenous boards(Hambrick and Mason, 1984). Organizations can attract, retain, and take the competitive edge from diverse talent to begin by increasing the diversity among top management teams (Raver and Schneider, 2004). To operationalize the board size, various studies measure by the total number of directors on the board of directors of a firm (Coles, Daniel, and Naveen, 2008; Hassan, Marimuthu, and Johl, 2015).

This study based on upper echelon theory, because it related to top level management characteristics and its effect on firm performance. Diverse boards may better monitor managers and top management teams because board diversity increases board independence. However, agency theory does not predict clear overview of the relationship between board diversity and financial performance(Carter et al., 2003).

### Theoretical Model Development

The proposed theoretical model is shown in Fig.1. The relationship between demographic diversity at top-level management and firm performance. Here, the variable of investigation is demographic diversity. Demographic diversity includes (gender diversity at Board of directors). Gender diversity can be measured by dividing total females by total board members on board. The dependent variables of this study are firm performance, which can be measured firm value (ROA and ROE). The control variables are board size, firm age and firm size. This study will show the actual relationship between diversity and firm performance.

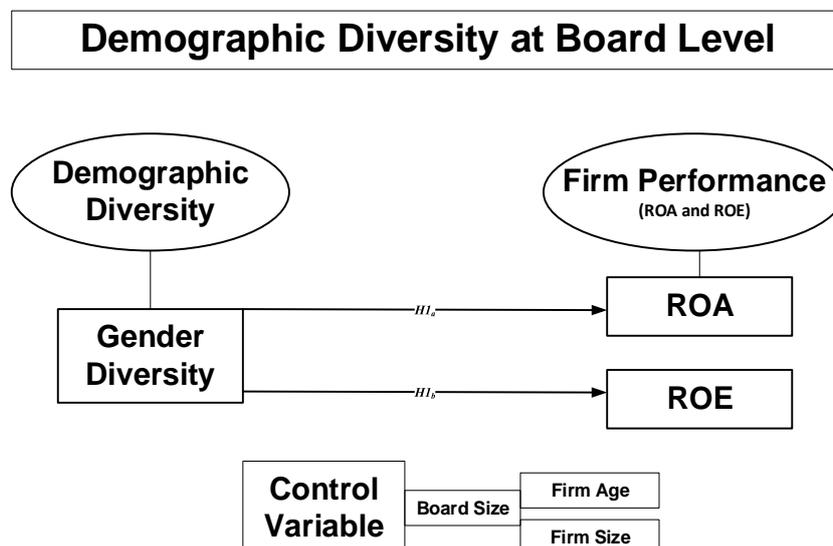


Figure 1: Theoretical Model (Demographic diversity at board level and firm performance)

### Econometric Methodology

The econometrics methodology with the focus on panel data modeling, methods and test used to prove the accuracy of results in this study.

#### Panel Data Modeling

The panel data modeling incorporate both time series and cross-sectional data. By using panel data, the main advantage that panel data allow identification of certain parameters without making any restrictive assumptions (Verbeek, 2008). The features of panel data have space and as well as time dimensions (Gujarati, 2003). Baltagi argued that when firms are considered for over the period, panel data required to include heterogeneity; more variability, less collinearity (among variables), more degrees of freedom, more efficiency; dynamics of change; larger sample size, more informative data, and thus, bias is minimized.

In view of the above discussions, in short, let us say all variables have cross-sectional units (referring companies- i.e. listed companies), thus,  $i = 1,2,3,\dots,N$  and time period, thus,  $t = 1,2,3,\dots,T$ . Therefore, the standard linear model is as follows;  $y_{it} = \beta_0 + x'_{it}\beta + \varepsilon_{it}$   $x'_{it}$  are the predictors and  $\beta_0$  and  $\beta$  represent intercept and slope coefficients are identical for all firms and time periods,  $\varepsilon_{it}$  is the error term and  $y_{it}$  is the dependent variable. In addition, panel data model assumes;  $\varepsilon_{it} = \alpha_i + \mu_{it}$

$\mu_{it}$  denotes that homoskedasticity is assumed and not correlated over time  $\alpha_i$  is time variant and homoskedasticity is assumed across firms. The above model is also regarded as random effect model (Verbeek, 2008),(Gujarati, 2003).

In the case of fixed effect model, includes an individual firm-specific intercept term in the model as given below;  $y_{it} = \alpha_i + x'_{it}\beta + \mu_{it}$

$y_{it}$  is the regressand,  $\alpha_i$  ( $i = 1,2,3,\dots,N$ ) are fixed unknown constants that are estimated along with  $\beta$  and  $\mu_{it}$  is assumed to be i.i.d over individuals and time. The overall intercept term  $\beta_0$  is dropped. In addition, Hausman Test and Breusch-Pagan LM were specially adopted in determining the most appropriate model (either pooled effect, fixed effect or random effect model) as presented in the empirical discussion section.

#### Fixed Effects or Random Effects?

Panel data approach always helps to give robust results, especially for modeling purposes. In addition to this, a panel data set is expected to produce regression results based on the pooled effects, fixed effects, and random effects. However, by using different tests, researchers may have a choice for the better between fixed effect method and random effect method. As for this purpose, two specific tests could be considered, and they are Breusch-Pagan LM Test (1980) and Hausman Test (1978) (Hausman, 1978). However, the Hausman Test is used in most cases as it tests whether the fixed effects and random effects estimators are significantly different (Verbeek, 2008) and the statistical model can be computed as follows;

$$\xi_H = \left( \hat{\beta}_{FE} - \hat{\beta}_{RE} \right) \left[ \hat{V} \left\{ \hat{\beta}_{FE} \right\} - \hat{V} \left\{ \hat{\beta}_{RE} \right\} \right]^{-1} \left( \hat{\beta}_{FE} - \hat{\beta}_{RE} \right)$$

$[\hat{V}_s]$  Refer to true covariance matrices.  $(\hat{\beta}_{FE} - \hat{\beta}_{RE}) = 0$  (null hypothesis),  $\xi_H$  refers to asymptotic chi-squared distribution with K degrees of freedom, where K = number of elements in  $\beta$ .

### Methods and Measures

The study was conducted for top large non-financial listed companies of Bursa, Malaysia. To investigate this empirical study, data were collected from the Datastream database and manually, over the period 2009 to 2013 (5 years). The rationale behind to choose non-financial listed companies to maintain the homogeneity factor in data. The judgmental sampling technique used on the basis of 5-years average market capitalization of the firms.

### Measures

Panel data analysis:  $Y_{i,t} = \alpha + \beta X_{i,t} + \epsilon_{i,t}$ ;  $i$  = cross-sectional dimension,  $t$  = time-series dimension,  $Y_{i,t}$  = dependent variable,  $X_{i,t}$  = independent variable,  $\epsilon$  = error term. The regression output was based pooled effect (PE), fixed effect (FE) and random effect (RE) methods. The two approaches were used to check the consistency of the results. Thus, this robustness will pave a way for meaningful interpretations.

### Hypotheses Testing

The Upper Echelon Theory argued that board characteristics (top-level management) and its impact on firm performance (Hambrick and Mason, 1984). Based on Fig.1, possible hypotheses are made on the basis of previous studies and theories. Consequently, the literature shows the actual relationship between demographic diversity in the boardroom and its impact on firm value (Hassan and Marimuthu, 2014; Hassan, Marimuthu, and Kaur Johl, 2015; Hassan et al., 2016; Hassan and Marimuthu, 2016). As the gender participation is an issue in the corporate world and in literature the debate is ongoing whether gender participation really matters or not. In addition, ethnic diversity also an issue. Hence, the proposed hypotheses for this study are as below;

*H1<sub>a</sub>: Gender diversity among the board members (BODs) has a positive impact on firm performance (ROA).*

*H1<sub>b</sub>: Gender diversity among the board members (BODs) has a positive impact on firm performance (ROE).*

### Model Applied

The below modeling equation shows the relationship between demographic diversity (gender, ethnicity and age profile) and market value of the firm (ROA and ROE). To check on the effect of diversity and firm value, the following model would be used;

$$ROA_{it} = \alpha + \beta_1 GENDIV_{it} + \beta_2 FAGE_{it} + \beta_3 FSIZE_{it} + \beta_4 BSIZE_{it} + \epsilon$$

$$ROE_{it} = \alpha + \beta_1 GENDIV_{it} + \beta_2 FAGE_{it} + \beta_3 FSIZE_{it} + \beta_4 BSIZE_{it} + \epsilon$$

### Measurement of Variables

The various constructs were operationalized in the context of diversity and firm value. This is a parametric study and used ratio scale. All variables and their measurement are shown in Table 1.

Table 1: Operationalization of Variables

Variable	Measurement
<b><u>Dependent Variables</u></b>	
ROA	Net Income/Total Assets
ROE	Net Income/ Equity × 100%
<b><u>Independent Variable</u></b>	
GENDIV	Total number of females / Total board members [Gender diversity]
<b><u>Control Variables</u></b>	
FAGE	Number of years since incorporation [Firm age]
FSIZE	Log of total assets [Firm Size]
BSIZE	Total board members [Board size]

### ***Data Analysis Strategy***

STATA 13.0 was used to analyze the cross-sectional time series data (Verbeek, 2008) and to see the data reliability and validity used cook's distance outliers test. As per nature of the data, other diagnostic checked also run during rigorous analysis.

### **Empirical Analysis and Discussions**

The proposed model and hypotheses of this study are rigorously tested with market capitalization analysis, descriptive statistics, panel unit root test, cook's distance outliers test, pooled OLS, random effect, and fixed Effect techniques.

### ***Descriptive Statistics***

The descriptive statistics results of all variables are presented in Table 2. The largest board size is 14 and a maximum woman on a board are 3. The average gender diversity at board level is 0.0846. Sample is N = 300. The time for study T= 5 Years.

Table 2: Descriptive Statistics on Diversity and Firm Performance

Variable	Mean	Std. Dev.	Min	Max
ROA	10.419	10.020	-19	60.24
ROE	20.741	34.832	-110.54	369.91
Female	.82	.9221	0	3
Gender Diversity	.0846	.0936	0	.3333
Firm Age	32.733	17.205	2	103
Firm Size	15.716	1.215	12.834	18.411
Mktp (RM '000)	12372.58	18037.12	591.46	183081
Board Size	8.94666	1.967	5	14

<b>Growth Oppt.</b>	11.789	19.875	-40.85	176.93
N = 300, n = 60, T = 5				

**Cook’s Distance Outliers Test**

Cook’s distance outlier test is used to measure combines the information of leverage and residual of the observation. The graph Fig.2. is showing that there are some outliers, which are not consistent with the data. After deleting these problematic companies. Some cases have large residual (i.e. the difference between the predicted and observed value for cases are exceptionally large) but some cases do not have much leverage. Therefore, we can conclude that our panel is in smooth form after deleting these cases. [Number of obs = 300m, F (10,289) = 33.99, Prob > F = 0.0000].

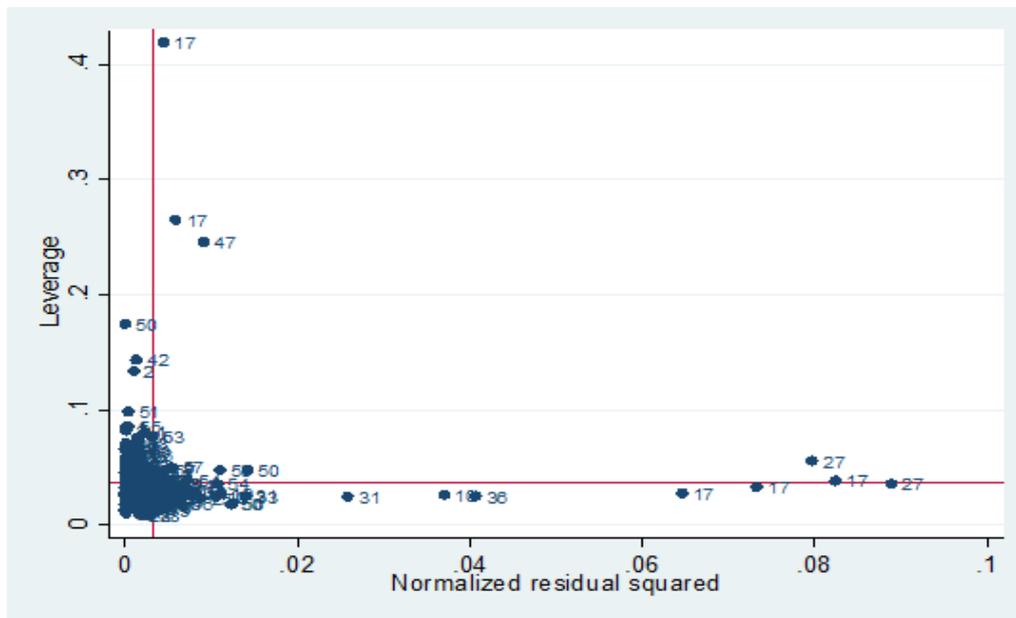


Figure 2: Cook’s Distance Outliers Test

**Pooled OLS, Random Effect, and Fixed Effect**

The key aspects of diversity and firm value discussed in literature review. Here, appropriate statistical tests were applied in view of confirming diversity at board level and firm value among Malaysian listed companies. In this study, panel data sets were used for the analyses that involved pooled effect, fixed effect, and random effect methods. The summary of the regression results is shown in Table 3 below. The regressands are ROA, ROE and regressors are gender diversity of demographic diversity. Furthermore, Breusch-Pagan LM Test is rejected pooled OLS effect in favor of random effect model and random effect model is rejected in favor of the fixed effect model based on Hausman Test for top listed non-financial companies. Additionally, the pooled OLS effect, ethnic diversity showed significant correlations with ROA and ROE for non-financial listed companies. As PE results showed that gender diversity has no significant and positive relationship. However, under the fixed effect, the results indicated that gender diversity was no longer significant with ROA and ROE and negatively correlated. On the other hand, control variables are very positively significant with firm value in case of firm age (ROE) and board size (ROE), which means these factors are also influencing firm performance. Nonetheless, firm size is very negative significant with firm value (ROA and ROE).

Referring to Table 3 (fixed effect), for a diagnostic check of panel i) Multicollinearity ii) Heteroskedasticity iii) Serial correlation checks were applied to see the panel data reliability. Under multicollinearity check, it was found that there was no multicollinearity problem in panel data. As  $(vif) < 10$ , which means no multicollinearity problem. In the case of heteroskedasticity, the p-value less than 0.05. This means variance are constant. In serial correlation, the p-value is highly significant which means there is not serial correlation problem. To see the time effect when we used fixed effect model, as the p-value is less than 0.05, we accepted  $H_0$ , which means time effects are needed and all years coefficients are jointly significant. However, in the case of ROA and ROE, the p-value is greater than 0.05, we rejected  $H_0$ , which means time effect are not need and all years are not jointly significant.

Table 3: Results of Panel Data Analysis- Dependent Variables: ROA and ROE

	Pooled OLS		Random Effect		Fixed Effect	
	ROA	ROE	ROA	ROE	ROA	ROE
<b>Constant</b>	<b>102.765***</b> (13.10)	<b>249.977***</b> (7.74)	<b>80.679***</b> (6.74)	<b>171.180***</b> (3.43)	<b>106.305**</b> (4.01)	<b>351.245***</b> (2.94)
<b>Gender Div.</b>	2.375 (0.49)	23.881 (1.21)	-.521 (-0.10)	7.303 (0.31)	-3.688 (- 0.59)	-17.1930 (-0.61)
<b>Board Size</b>	<b>-.556**</b> (-2.46)	<b>-2.717***</b> (-2.91)	-.0123 (-0.04)	.12400 (0.10)	.5386 (1.45)	<b>3.391**</b> (2.03)
<b>Firm Age</b>	-.003 (-0.14)	-.1230 (-1.21)	.013 (0.29)	-.0519 (-0.29)	.555** (2.00)	3.736*** (2.99)
<b>Firm Size</b>	<b>-5.311***</b> (-12.79)	<b>-14.028***</b> (-8.21)	<b>-4.747***</b> (-7.35)	<b>-12.458***</b> (-4.67)	<b>-8.426***</b> (-4.46)	<b>-35.058***</b> (-4.11)
<b>Breusch-Pagan LMTest (chibar<sup>2</sup>) - ROA</b>	<b>0.000</b> (137.79)			-	-	-
<b>Breusch-Pagan LM Test (chibar<sup>2</sup>) - ROE</b>	-	<b>0.000</b> (116.23)			-	-
<b>Hausman Test (chibar<sup>2</sup>-ROA</b>	-	-	<b>0.000</b> (36.09)			-
<b>Hausman Test (chibar<sup>2</sup>-ROE</b>	-	-	-	<b>0.0000</b> (40.67)		
<b>Observations</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>
<b>Multicollinearity (vif)</b>	-	-	-	-	(1.23)	(1.23)
<b>Heteroskedasticity (chibar<sup>2</sup>-stat)</b>	-	-	-	-	0.0023 <b>(3.21)***</b>	0.041 <b>(0.94)**</b>
<b>Serial Correlation (F- stat)</b>	-	-	-	-	0.0013 <b>(3.07)***</b>	0.0471 (1.91)
<b>Testing for Time Effect</b>	-	-	-	-	0.7005 (0.55)	0.9284 (0.22)

Note:  $P < 0.05^{**}$ ,  $P < 0.01^{***}$

Table 4: Summary Results of the Hypotheses Tested

<b>Objective:</b> To investigate diversity at top-level management of large companies with regard to their market value.	<b>Dependent Variables</b>
<b>ROA</b> <i>H1a: Gender diversity among the board members (BODs) has a positive impact on firm performance (ROA).</i>	Not Supported
<b>ROE</b> <i>H1b: Gender diversity among the board members (BODs) has a positive impact on firm performance (ROE).</i>	Not Supported

Table 4 provides the summary results of the hypotheses tested on developed Model. In fact, gender diversity (H1a), (H1b), in (Table 4) is negatively correlated with firm performance (ROA and ROE) but not significant. Here, two hypotheses results of this study are not supported. Therefore, it proves that there is still inconsistency between current and previous research regarding diversity issues at board level.

### Limitations of the Study

Some limitations of this study are addressed here, there are 60 non-financial Malaysian listed companies selected out of 938 companies. The sample excluded all financial listed companies due to keeping homogeneity in data. The variables used in this study verbalized by different measure as given in the literature and thus might result inconsistent and interpretations. For example, firm size can be measured by total asset, total sales, total market capitalization, etc. Moreover, an individual company may have different accounting policies and practices incline to result in different figures in the financial data and therefore to have different implications. In addition, this study used financial databases for dependent variables. There is a possibility that figures slightly different from actual company annual reported figures. These financial databases do not provide the data with right formulae as required by the research models and hypotheses in particular.

### Conclusions and Recommendations

The findings from diversity at board level with regard to firm performance have significant positive and negative results. As a gender, participation has no significant with firm value. As previous studies also showed inconsistency in results. As a result, of this study is inconsistent with previous studies. There are might be several reasons behind this issue. Nevertheless, results depict quite interesting picture regarding diversity and firm performance. Control variables like firm age, firm size, and board size were positively significant which means these variables are also affecting the firm value. However, the presence of diversity at board level does have a relationship with firm value and hence more diversified boards affect the firm value.

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# Linking Organizational Climate, Psychological Ownership, and Intention to Stay: A Proposed Model

**Winnie Woon\***

*Graduate School of Business, Universiti Sains Malaysia, Malaysia*  
Email: winnie\_wyp@hotmail.com

**Cheng-Ling Tan**

*Graduate School of Business, Universiti Sains Malaysia, Malaysia*  
Email: tanchengling@usm.my

**Aizzat Mohd. Nasurdin**

*School of Management, Universiti Sains Malaysia, Malaysia*  
Email: aizzat@usm.my

*\* Corresponding author*

## Abstract

**Purpose:** In view of the increasing importance of the pharmaceutical industry in Malaysia and since the performance of pharmaceutical firms is heavily dependent upon the Research and Development (RandD) engineers who play a key role in manufacturing new drugs, these firms need to retain these employees and increase their intention to stay.

**Design/methodology/approach:** This paper is to review and synthesize the literature and propose a framework linking organizational climate, psychological ownership, and intention to stay. Four dimensions of organizational climate (autonomy, structure, rewards and considerations, and warmth and support) are posited as determinants of intention to stay. In addition, psychological ownership is conceived as a mediator in the relationship between organizational climate and intention to stay.

**Findings:** Based on the review of the literature, a conceptual model has been established where organizational-related factors (Organizational Climate) has been proposed as a predictor (independent variable) of engineers in Rand D activities within the pharmaceutical context. In addition, one attitudinal variable (in the form of Psychological Ownership) has been proposed as a mediator in relationship between organizational climate (independent variable) and intention to stay.

**Originality/value:** The literature on intention to stay has accorded more attention in exploring various antecedents that are related to intention to stay. This paper established psychological ownership to be the mediator for relationships between organizational climate and intention to stay.

**Keywords:** Intention to stay; organizational climate; psychological ownership, engineers; pharmaceutical industry

## Introduction

In today's competitive business world, most organizations are paying greater attention to retaining employees and strategizing to increase employee intention to stay. Retention of high-

quality employees is critical because turnover of these employees will bring deleterious consequences to the organization's operations and performance. Every organization wants to have, committed, loyal and hardworking employees who are willing to stay with the organization for a long time period. Turnover is costly. The real costs of employee turnover relate to lower morale among the remaining employees who must carry the workload of those who have left; lost revenue from sales; and loss of customers who fled to competitors for better products, services, and price (Grobler, Warnich, Carrell, Elbert and Hartfield, 2002). The turnover phenomenon is prevalent in all industries especially within the pharmaceutical industry where the attrition rate is above the acceptable level. For example, statistics indicate that turnover rate in the Malaysian pharmaceutical industry have increased sharply from 14.2% in 2013 to 23.1% in March, 2016 (refer to Table 1).

Table 1: Voluntary Turnover Rate in the Industry in Asia Pacific.

Country	2013	2014	2015	2016 (as of March)
Australia	8.0%	11.9%	13.4%	14.2%
China	9.1%	16.5%	13.0%	12.4%
India	13.2%	17.0%	11.4%	12.5%
Japan	6.8%	12.0%	8.1%	10.0%
Malaysia	14.2%	20.8%	21.0%	23.1%
Singapore	12.3%	12.2%	15.4%	13.7%
South Korea	9.6%	17.2%	13.7%	13.1%
Taiwan	9.0%	17.0%	17.6%	18.6%

*Source: Radford 2013-2016 (as of March 2016)  
 Global Salary Increase and Turnover report (2015)*

Turnover rate is often relatively high among certain groups of professionals such as engineers who are involved in research and development activities particularly among generation Y (Queiri, Yusoff and Dwaikat, 2015). As Malaysia's pharmaceutical manufacturing business continues to expand, there is a high demand for RandD engineers by companies in this industry. Thus, it is vital for the pharmaceutical companies to retain their RandD engineers since this category of personnel is critical in facilitating the transition between drug development handled by the scientists and researchers and full production of the drugs. When RandD engineers leave an organization, it can lead to discontinuity in a development project and a loss of tacit knowledge that cannot be promptly substituted with new recruits. According to Kochanski and Ledford (2001), the estimated cost of losing RandD engineers is three to six times the cost of the turnover of an administrative worker. Therefore, to support product and service growth, the retention strategies of RandD engineers becomes a top priority for human capital in organizations (Ang, Slaughter and Ng, 2002; Evans, Gonzalez, Popiel and Walker, 2000; Kochanski, Mastropolo and Ledford, 2003). A review of the literature highlights the critical role of organizational climate in encouraging employees to stay in their organizations (Shanker, 2013). Moreover, psychological ownership has been argued to act as a mediator in the climate-intention to stay relationship. Since the issue of intention to stay is fundamental in addressing the high attrition trend in Malaysia's pharmaceutical industry, the objective of this study is to conduct a review and synthesis of the literature and propose a model connecting organizational climate, psychological ownership, and intention to stay. Four dimensions of organizational climate (autonomy, structure, rewards and considerations, and warmth and support) are posited as determinants of intention to stay. In addition, psychological ownership is envisaged as a

mediator in the relationship between organizational climate and intention to stay. Many antecedents of employees' intention to stay have been discussed in the past. One category of antecedents relates to organizational factors which include profitability, efficiency, adaptation, technical core dominance, organizational structure, organizational policies and practices, and governance (Milman, 2003; Milman, and Ricci, 2004). In addition, job factors such as job security, and monetary benefits have been known to promote employee commitment, leading to the creation of a conducive workplace that would trigger employees' retention to stay (Milman, 2003; Milman, and Ricci, 2004). Moreover, Milman, Milman and Ricci (2003, 2004) asserted that working conditions rather than monetary rewards represent the most significant predictor for intention to stay include working conditions rather than monetary rewards. One such form of working condition relate to organizational climate (Shim, 2009). This finding is consistent with those by other researchers (Milman, 2003; Milman, and Ricci, 2004). In this regard, several studies have addressed the impact of organizational climate in increasing one's intention to stay (Milman, 2003; Milman, and Ricci, 2004; Becker and Huselid, 1999; Cho, Woods, Jang and Erdem, 2006; Shaw, Delery, Jenkins and Gupta, 1998; Guthrie, 2001; Walsh and Taylor, 2007).

It is important for an organization to understand what causes an employee to choose to leave/stay in an organization. Organizational climate is the work environment which can motivate and influence the willingness of the employee to remain with an organization, particularly in service industries. It frequently represents the interface between organization and customers (Manning, Davidson and Manning, 2005). Therefore, the organizational climate is essential in motivating and supporting employees to perform well, which in turn, is reflected in their intention to stay with the organization (Manning, Davidson and Manning, 2005). As previously mentioned, employee turnover creates a harmful impact on organizational effectiveness (Price and Mueller, 1986).

In general, RandD engineers' processes are diverse, and their success is influenced by certain factors, such as organizational focus, organizational climate, ownership of the organization, and RandD engineers' characteristics, including personality types, and various variables pertaining to of the job situation (Goswami, Mathew and Chadha, 2007).

On the other hand, intention is a psychological antecedent for actual behavior (Ajzen and Fishbein 1980). According to Shanker (2014), individuals' intention to stay or quit, perform or not to perform a behavioral act can be the immediate determinant of action. Intention to stay is the converse of turnover intention (Kim, Price, Mueller and Watson, 1996). Hence both these constructs are negatively correlated (Steers and Mowday, 1981).

This study investigated employees' intent to stay with an organization because understanding workplace factors that keep employees may assist the organization with the development of programs and interventions that enable employers to retain their current employees. In contrast to a majority of existing studies, this paper will focus on employees' intent to stay in an organization (Somers, 1996). This perspective supported a more positive approach to the management of turnover and retention (Flowers and Hughes, 1973).

In view of the importance of organizational climate in influencing one's on intention to stay (Shanker, 2014), and the salient role of psychological ownership in mediating the IV-DV relationship (Shanker, 2014), the main purpose of this paper is to review the literature and propose a model associating organizational climate, psychological ownership, and intention to stay among RandD engineers in the pharmaceutical industry of Malaysia.

## **Literature Review**

### ***Intention to Stay***

Intention is a psychological antecedent to actual behavioral action (Shanker, 2013).

Organizations usually tend to prefer to have a stable workforce, and therefore, it is important to determine the variables that are involved in triggering their intention to stay or leave an organization (Boshoff, Van Wyk, Hoole and Owen, 2002). There is a difference between employees' retention and employees' willingness to stay in the organization. The former is more of a pull-strategy for employees (i.e. what does the organization do to retain its employees) whereas the latter is more of a push-strategy, (i.e. what are the intrinsic factors that enhance the willingness of employees to stay) (Sengupta, Santoshi and Dev, Santosh 2013).

Previous studies have primarily focused on turnover-related concerns, and not many were done on employees' intention to stay. This paper attempts to describe the key dimensions of organizational climate that can influence employees' intention to stay. Intention to stay refers to employees' conscious and deliberate willingness to remain with the organization (Tett and Meyer, 1993). Prior research on the determinants of turnover or employee retention did not distinguish between the effects of these elements on the dependent variable be it of intention to stay or intention to leave (Johnston, 1995). Intention to stay is defined as employees' intention to remain in the present employment relationship with their current employer on a long-term basis. This is an inverse concept to turnover intention or intention to quit. Intention to stay and intention to leave are two sides of the same coin (Johari, Tan, Adnan, Kirana Yahya, and Nassrudin Adman, 2012).

Studies conducted by a number of researchers revealed various predictors of intention to stay which may be classified as: personal-related, job-related, organization-related, and external environment-related (Heather, 2003; Porter, Steers, Mowday and Boulian, 1974; Lee and Mowday, 1987; Lockwood and Ansari, 1999). Previous research indicated a positive correlation between personal predictors to intention to stay especially as employees' level of commitment (Heather, 2003; Miller, 1996; Steers, 1977). It has been demonstrated that attitudinal commitment (i.e. organizational commitment), and physical conditions have positive relationships with employees' intention to stay (Iverson and Roy, 1994). It has been found that a significant and positive relationship exists between talent and leadership development practices and both affective commitment and intention to stay (Lockwood and Ansari, 1999). In addition, it was also discovered found that affective commitment partially mediated the relationship between talent and leadership development practices and intention to stay (Hewitt Associates: Strategies for Cost Management of the HR Function, 2004). According to Walker (2001) and Deery (2008), identified that good work-life balance and good communication increase intention to stay.

Job variables are crucial in determining intention to stay. Job satisfaction has always been an area of interest and concern for both academicians as well as practitioners. A well-known model of turnover advanced by Steers and Mowday (1981) clearly specifies the positive relationship between job satisfaction and the intention to stay. Calisir, Gumussoy and Iskin (2011) found that intention to stay one's job is explained by job content ambiguity and job stress which exerted a negative indirect effect on intention. In Ito and Brotheridge's (2005) study, the job autonomy was significantly related to the intention to stay.

A number of studies state that organizational predictors have a positive relationship with intention to stay. According to Magner, Welker and Johnson (1996), employees feel comfortable to stay longer in positions where they are involved in some level of the decision-making process in the organization. Herman (1999) has discussed several principal reasons why employees stay in the companies: compatible corporate culture, satisfactory relationships with coworkers, sufficient support, and adequate opportunities for growth. Abbasi and Hollman (2000) highlighted workplace environment as one of the reasons to promote intention to stay whereby organizations with high levels of efficiency seemed to have employees with high levels of intention to stay. Zhao, and Kay (2009) conducted a study which showed that

organizational mission, goals, and direction have an impact on intention to stay. Kerr and Slocum (1987) and Sheridan (1992) found a relationship between variations in employees' intention to stay and organizational cultural values.

A mathematical model of employee turnover was suggested by Udechukwu and Mujtaba (2007), who focused on determinants like internal (employer) and external (social affiliate) factors relative to the employee who either stays or leaves the organization. Mano-Negrin and Tzafrir (2004) argued that employees leave or stay with an organization due to economic reasons, and these can be used to predict the labor turnover in the market. Singh and Selvarajan (2013) found a positive relationship between supportive diversity climate and employees' intent to stay. This finding is in agreement with the extant literature (McKay, Avery, Tonidandel, Morris, Hernandez and Hebl, 2007) on the role of community diversity climate on intention to stay.

A review of the literature on predictors of intention to stay indicate that organizational-related factors are the most important (Shanker, 2013). Of these predictors, organizational climate is regarded vital in promoting employees' intention to stay. Organizational climate reflects the employees' perception of the work environment which can motivate and influence their willingness to stay with an organization. Therefore, a favorable organizational climate is essential in encouraging employees to deliver quality service, which in turn, is get manifested in their intention to leave/stay with the organization (Manning, Davidson and Manning, 2005). Many studies have investigated the direct effect of organizational climate on intention to stay (Dondero, 1997; Gieter, Hofmans and Pepermans, 2011; Glisson, Schoenwald, Kelleher, Landsverk, Hoagwood, Mayberg and Green, 2008; Schwepker, 2001). However, organizational climate may not be directly linked to intention to stay as suggested by Shalley and Zhou (2008). One possible mechanism by which organizational climate affect intention to stay would be through psychological ownership (Olzer, Yilmaz and Ozler, 2008).

In addressing the lack of systematic work in the domain of employees' willingness to stay, this paper aims to review the literature on organizational climate dimensions that contribute to employees' willingness to stay in the organization within the context of the pharmaceutical industry. The review revealed that four dimensions of organizational climate (autonomy, structure, rewards and consideration, warmth and support) are important in influencing employees' intention to stay. Hence, these factors should be considered by organizational authorities in developing strategies that may facilitate employees to remain in the same organization (Nedd, 2006).

### ***Organizational Climate***

The work environment plays a fundamental role in the employees' decision to stay in an organization. The environment in which an employee works is closely linked to the organizational climate of the organization (Dondero, 1997). Schneider and Reichers (1983) defined organizational climate as a shared or summary perception that people attach to particular features of the work setting. More precisely, organizational climate is the shared perception of what the organization is like regarding practices, policies, procedures, routines and rewards, based on shared perceptions of organizational members (Bowen and Ostroff, 2004).

Hong and Kaur (2008) discovered that positive organizational climate can significantly reduce employees' turnover intention and increase their intention to stay which is in line with their earlier works that positive organizational climate predicts positive work attitudes and behaviors. Employees are more satisfied working in a positive work environment and, therefore, are more likely to stay with their organizations (Pace, 2002; Aarons and Sawitzky, 2006).

Past literatures have suggested that positive organizational climate may contribute to high intention to stay (Gieter, Hofmans and Pepermans, 2011; Glisson, Schoenwald, Kelleher, Landsverk, Hoagwood, Mayberg and Green, 2008; Schwepker, 2001). Suliman and Obaidli (2011) explored the relationship between organization climate and intention to leave in the Islamic banking industry. The study revealed that employees' perceptions of organizational climate have a negative effect on staff's intention to leave. Shim (2009) also proved that organizational climate acts as a predictor of intention to stay.

According to Litwin and Stringer (1968), organizational climate comprises of nine dimensions: structure, responsibility, reward, risk, warmth, support, standards, conflict, and identity. Stringer (2002) has further refined these dimensions to include: structure, standards, responsibility, recognition, support, and commitment. Beginning in the 1970s, several Boston-based consulting firms refined climate dimensions namely clarity, commitment, standards, responsibility, recognition, and teamwork (Stringer, 2002); and McBer and Company's (now known as the Hay Group) six dimensions of climate consisting of flexibility, responsibility, standards, rewards, clarity, and team commitment (Klemp, 1975).

Campbell, Dunnette, Lawler and Weick (1970) identified four dimensions which are common to some climate studies (individual autonomy; structure imposed on the situation; reward orientation; and consideration, warmth, and support). Field and Abelson (1982) also identified the four common dimensions were namely autonomy/control, structure, rewards, and consideration, warmth and support.

### *1. Autonomy*

Litwin and Stringer (1968) defined responsibility as the employees' perceptions of the autonomy extended to them by the organization, the feeling of being their own boss and not having to be double-checked on their decisions made.

### *2. Structure*

In the organizational climate construct, structures are usually designed to ensure that the mission and strategy of the organization are effectively implemented. It deals with levels of responsibility, decision-making authority, and formal reporting relationship with others in the organization (Isaksen and Lauer, 1988).

### *3. Rewards and Consideration*

Reward systems have often been seen as an important dimension of organizational climate (Schneider, White and Paul, 1998). Reward identifies the feeling of being rewarded fairly and equitably as well as the perceived organization's promotion policies. Meta-analytic findings from Williams and Livingstone (1994) suggest that rewards contingent on individual performance actually strengthen the inverse relationship between performance and turnover. Rewarding performance can encourage good performers to stay (Sheridan, 1992; Williams and Livingstone, 1994).

Consideration is a leader acts in a friendly and supportive manner, shows concern for subordinates, and looks out for their well-being. Initiating structure is the extent to which a leader defines and structures his or her role and the roles of subordinates toward attainment of the group's explicit goals (Field and Abelson, 1982).

Anderson, Corazzini-Gomez and Mcdaniel (2004) studied the consequences of staff turnover in nursing homes. They found that homes with reward climate and open communication had lower turnover rate. Batlis (1980) also found a relationship between reward system, intention to stay, and job dissatisfaction.

#### *4. Warmth and support*

Warmth and support refers to the perceived helpfulness of the managers and other employees in the group which emphasizes mutual support from people in the organization. A climate with perceived favorable support is believed to have a low level of interpersonal conflict. Empirical findings suggest that perceptions of organizational politics are significantly related to turnover intentions. Although quitting may not prove feasible due to lack of suitable external opportunities or other restrictions, psychologically the person may still intend to leave the organization (Hom, Caranikas-Walker, Prussia and Griffeth, 1992).

#### ***Psychological Ownership***

In prior studies, psychological ownership was described as an attitude with both affective and cognitive elements (Pierce, Kostova and Dirks, 2001 and 2003). Psychological ownership is a psychologically experienced occurrence where an employee develops possessive feelings for the object (Van Dyne and Pierce, 2004). Psychological ownership is consistent with the basic psychological research on work-related attitudes (Breckler and Wiggins, 1989) and with Affective Events Theory (AET) (Weiss and Cropanzano, 1996) creates differentiation between beliefs about the job and emotional experiences at work. Affective Events Theory recommends that different attitudes come with a different mixture of affective and cognitive elements.

Van Dyne and Pierce (2004) found that psychological ownership has a significant relationship between the organization and work-related attitudes and work behaviors. Psychological ownership was able to predict organization-based self-esteem and positively affect organizational commitment and job satisfaction which is consistent with Williams and Livingstone's (1994) findings. Results also revealed that psychological ownership was able to predict organizational citizenship behavior. O'Driscoll, Pierce and Coghlan (2004) demonstrated that psychological ownership of the job and organization mediates the relationship between work environment structure and employees' citizenship behaviors. At the same time, psychological ownership partially mediates the relationship between psychological ownership and affective commitment. Employees do have a sense of psychological ownership in terms of met expectations when they are offered stock options. However, this sense of ownership was reduced when the stock earnings decreased (Selvarajan, Ramamoorthy, Flood and Rowley, 2006).

Buchko (1993) tested a model on the effect of employee ownership on employee attitudes and behaviors, and their findings showed that property has a positive relationship with job satisfaction and organizational commitment. A positive correlation also existed between job satisfaction and organizational commitment with the intention to stay. Bernhard and O'Driscoll (2011) found that psychological ownership of the job and of the organization mediated the relationship between leadership style and affective commitment, job satisfaction, and intention to stay.

Organizational commitment, job satisfaction and intention to stay are recognized as consequences of psychological ownership (Avey, Avolio, Crossley and Luthans, 2009; Mayhew, Ashkanasy, Bramble and Gardner, 2007; Van Dyne and Pierce, 2004). As expected, and as confirmed by Avey, Avolio, Crossley and Luthans (2009), intention to stay was positively related to promotion-orientated psychological ownership. Thus, this paper seeks to explore the role of psychological ownership on employees' intention to stay.

#### **Underlying Theories**

Based on the earlier discussion in the literature review session, the theory that binds organizational climate to psychological ownership and to intention to stay is the Social exchange theory (SET). Social Exchange Theory (SET) developed by Blau (1964), had

explained the reasons why individuals develop personal relationships with others. The theory also specified the appropriate time when the relationships started and ended. Thibaut and Kelley's (1959) theory also emphasized on personal relationships, its costs and benefits. Social Exchange Theory (SET) posited that good deeds should be reciprocated (Blau, 1964). Mossholder, Settoon and Henagan (2005) pointed out that effort and loyalty usually could be seen from employees' commitment to their job and strong intention to remain with the present employer. Employee's loyalty clearly fit within the framework of social exchange theory employees feel obligated to stay and repay the organization for support they had received (Rhoades, 2002).

Social exchange theory provides an avenue of transaction between sense of obligation that led to feelings of responsibility in compensating what had been given by another party which in turn would motivate positive psychological responses as suggested by several researchers (Bunderson, 2001; Coyle-Shapiro and Kessler, 2000).

The second theory that supports this framework is Theory of Psychological Possession. Theory and research on the psychology of possession link feelings of ownership with positive attitudes about the target of ownership, the self-concept, and sense of responsibility for the target. Pierce, Kostova and Dirks (2001, 2003) drew on studies in sociology, philosophy, human development and psychology to introduce a theory of psychological ownership in organizations. It defined psychological ownership as a construct that is separate and distinct from the legal or equity ownership of an organization.

Psychological possession for the organization (i.e. psychological ownership) is the psychologically experienced phenomenon in which an employee develops possessive feelings for the target. Building on Pierce, Kostova and Dirks (2001), Furby (1978), and Dittmar (1992) linked feelings of possession with feelings of ownership and defined psychological ownership as the state in which an individual feels that an object (i.e., material or immaterial) is experienced possessively (i.e., it's 'MINE' or it is 'OURS').

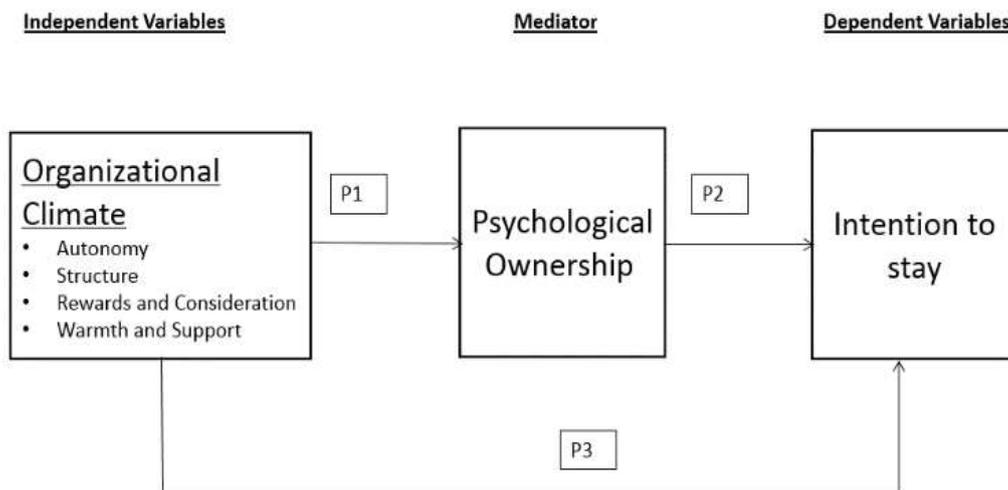


Figure 1: Research Framework

Past studies have revealed that a favorable or supportive organizational climate enhances employees' intention to stay (Gieter, Hofmans and Pepermans, 2011; Glisson, Schoenwald, Kelleher, Landsverk, Hoagwood, Mayberg and Green, 2008; Schwepker, 2001). In the banking industry, the findings by other researchers (Shim, 2009; Suliman and Obaidli, 2011) provided support for this linkage. Therefore, the following proposition and sub-propositions are established:

*P1: Organizational climate is positively related to intention to stay.*

- P1 (a): Autonomy is positively related to intention to stay.*  
*P1 (b): Structure is positively related to intention to stay.*  
*P1 (c): Rewards and consideration are positively related to intention to stay.*  
*P1 (d): Warmth and support are positively related to intention to stay.*

Pierce, Kostova and Dirks (2001) asserted that psychological ownership or sense of possession promotes a sense of responsibility for employees. This happens when employees realized that their needs for belonging, efficacy, and self-identity are being met. French and Rosenstein (1984) and Long (2011) suggested that the effects of ownership are robust enough to influence retention independently of their effects on intentions to stay. Avey, Avolio, Crossley and Luthans (2009), and Jeswani and Dave (2011) extended the study and found a positive relationship between psychological ownership and employees' intentions to remain in their organizations. This result has been confirmed by Olcker (2011). Thus, it is posited that:

*P2: Psychological ownership is positively related to intention to stay.*

A participative organizational climate strengthens the feelings of ownership of employees. The longer employees work in organizations; the more ownership they feel towards their organizations. It has been observed that organizational climate increases psychological ownership feelings. Findings by (Olzer, Yilmaz and Ozler, 2008) provided support for the role of organizational climate in fostering psychological ownership. Against this backdrop, the proposition and sub-proposition is developed as follows:

- P3: Organizational climate is positively related to psychological ownership.*  
*P3 (a): Autonomy is positively related to psychological ownership.*  
*P3 (b): Structure is positively related to psychological ownership.*  
*P3(c): Rewards and consideration are positively related to psychological ownership.*  
*P3 (d): Warmth and support are positively related to psychological ownership.*

Hong and Kaur (2008) found that positive organizational climate have a negative effect on employees' turnover intention and positive effect on their intention to stay. This finding is consistent with past researchers on the role of organizational climate in predicting positive work attitudes and behaviors.

Olzer, Yilmaz and Ozler (2008) observed that organizational climate increases psychological ownership feelings, and job satisfaction has a positive relationship with psychological ownership supporting prior research findings. Based on this empirical evidence, it can be concluded that organizational climate affects psychological ownership, which in turn, affect one's intention to stay. Hence, the following proposition and sub-propositions are provided.

*P4: Psychological ownership mediates the relationship between organizational climate and intention to stay.*

- P4 (a): Psychological ownership mediates the relationship between autonomy and intention to stay.*  
*P4 (b): Psychological ownership mediates the relationship between structure and intention to stay.*  
*P4(c): Psychological ownership mediates relationship between rewards and consideration, and intention to stay*  
*P4 (d): Psychological ownership mediates the relationship between warmth and support, and intention to stay.*

## Conclusion

Pharmaceutical companies play an important role given the growing number of health-conscious consumers in Malaysia. Since the performance of pharmaceutical firms is heavily dependent upon the Research and Development (RandD) engineers who play a key role in manufacturing drugs and medication for consumers, the former's willingness to stay in organization is important. Based on the review of the literature, a conceptual model has been established where organizational-related factors (Organizational Climate) has been proposed as a predictor (independent variable) of engineers in Rand D activities within the pharmaceutical context. In addition, one attitudinal variable (in the form of Psychological Ownership) has been proposed as a mediator in relationship between organizational climate (independent variable) and intention to stay.

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# Impact of Shareholder Structure on Voluntary Disclosure in Malaysian Companies

**Ahmad Ibrahim Karajeh**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Mohd. Yussoff B. Ibrahim**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Nor Asma Bt Lode**

*School of Accountancy, Universiti Utara Malaysia, Malaysia*

## Abstract

**Purpose** - This study examines the impact of the shareholders structure and company characteristics on the corporate voluntary disclosure.

**Design/methodology/approach** - The sample consists of 285 Malaysian companies. The Shareholders structure is characterized by the institutional shareholders and managerial shareholders. A Checklist instrument was used to measure the extent of corporate voluntary information. This checklist consists of 74 items that include strategic information, financial information and non-financial information.

**Findings** - The results came in support with previous studies conducted by researchers about the association between the shareholders structure and the voluntary information. Whilst there are mixed arguments in this regard, the results show that the level of corporate voluntary information is negatively related with the percentage of the managerial shareholders structure, and positively associated with percentage of institutional shareholders. This study also finds that large sized company and leverage have greater voluntary information, whilst the return on assets is not significantly related with voluntary disclosure.

**Originality/value** -The findings will increase the stakeholders' awareness of the score of voluntary disclosure in Malaysian companies. This is in turn will help Malaysian regulatory and other governmental bodies to improve the level of disclosure quality. Furthermore, prior empirical studies focused on examining other corporate governance items rather than the shareholders structure. Thus, this study filled the gap in previous studies by investigating the effect of shareholders structure on the voluntary disclosure.

**Keywords:** Shareholders structure, Institutional shareholders, Managerial shareholders, Voluntary disclosure, Stakeholder theory, Agency theory

**Paper type:** Research Paper

## Introduction

Corporate governance and corporate disclosures issues have increasingly attracted the attention of scholars, investors and regulatory authorities in Malaysia and other countries. Corporate disclosure in annual reports is crucially important for the development and growth of any company (Mohamed Akhtaruddin, Hossain, Hossain, and Yao, 2009). Prior researchers, such as Mitton (2002), suggest that there is an opportunity to improve the stock market by increasing the levels or the extent of disclosures. Thus, in order to make the equity market more effective,

leading companies must provide more information to improve relationships with the investors; this in turn will lead to an increase in the corporations' value.

Voluntary disclosures play an important role in addressing the issue of improving both of the equity market and the agency problems between the managements and the external investors (Akhtaruddin and Haron, 2010; Fama and Jensen, 1999; Healy and Palepu, 1993; Salama, 2005). Financial Accounting Standards Board (FASB) issued a report (Improving Business Reporting: Insights into Enhancing Voluntary Disclosures January 29, 2001) to explain the importance of the voluntary disclosure in annual reports. Despite the considerable efforts taken by the Financial Accounting Standards Board and regulatory authorities in Malaysia and East Asian countries, the listed corporations have not shown any substantial improvement in the extent of information disclosures (Karajeh, Ibrahim, Yusoff, and Lode, 2015; Kee and Pillay, 2003; Madi, Ishak, and Manaf, 2014; Ousama and Fatima, 2010). Furthermore, corporate governance plays an important role in reducing the agency problem, and henceforth Malaysia issued a new code of corporate governance in 2012 to improve companies' disclosures and decrease the agency conflict. However, there is not enough evidence that the code improved reporting discourse. Thus, this study aims to investigate the impact of the shareholders structure on the voluntary disclosure in the listed Malaysian Companies.

Prior studies on the extent of voluntary information have been carried out in different countries (Adina and Ion, 2008; Allegrini and Greco, 2013; Alsaeed, 2006). Few researches have been conducted in Malaysia (M Akhtaruddin and Haron, 2010). The study by Cerf (1961) is one of the first of such researches, which mainly focused on the relationship between voluntary information and a company's characteristics. Consequently, many studies (i.e. Adina and Ion (2008); Chow and Wong-Boren (1987); Haniffa and Cooke (2002); Ibrahim, Haron, and Ariffin (2000); and (Omar and Simon, 2011)) have been done to investigate the impact of the company size, assets, foreign listing status and leverage on voluntary disclosure.

However, few studies have investigated the relationships between the voluntary information score and the corporate governance (M Akhtaruddin and Haron, 2010; Chau and Gray, 2002; Haniffa and Cooke, 2002). Moreover, prior studies focused on the different variables of corporate governance and paid less attention to the ownership structure, specifically the Institutional and managerial ownership (M Akhtaruddin and Haron, 2010). The ownership structures impose an impact on the corporation's performance and the method and way of management control (Namazi, 2008). Therefore, the shareholders structure plays a main role in determining the level of monitoring and also the extent of voluntary disclosure (Eng and Mak, 2003).

Due to importance of the voluntary disclosure and the limited studies on the relationship between the shareholders structure and voluntary information score, the main aims of this study are: (1) investigating the impact of the company characteristics on the voluntary information and (2) investigating the impact of shareholders structure on voluntary information. The results of this study are of two contributions: Firstly, the findings will increase the stakeholders' awareness of the score of voluntary disclosure in Malaysian companies. This is in turn will help Malaysian regulatory and other governmental bodies to improve the level of disclosure quality. Secondly, prior empirical studies focused on examining other corporate governance items rather than the shareholders structure. Thus, the findings of the study filled the gap in previous studies by investigating the effect of shareholders structure on the voluntary disclosure.

The remaining sections of this study are organized into three sections which are structured as follows: section 2 discusses the importance of the shareholders structure and why structure and why it was chosen over other variables using the stakeholder theory; moreover it illustrates the relationship between the voluntary disclosure and the shareholders structure by using the agency theory. Section 3 is concerned with the related studies. Section 4 discusses the scope and the

methodology of the study. Section 5 presents the empirical analyses and results. Section 6 contains the conclusions of study.

### **Stakeholders and Agency Theories**

The Stakeholder theory oversees the relationships between the stakeholders and the information they receive by the management. This information illuminates how the business conducts its activities. The definition of the word stakeholders according to Freeman (1983) is any identifiable parties or groups who can affect the accomplishment of a company's goals or who are affected by the accomplishment of the company's goals. This definition includes government agencies, unions including workers and staffs, public interest groups, customers, protest groups and investors.

Some managements tend to turn their attention to certain groups of stakeholders whilst ignoring the rest (Scott and Lane, 2000). Therefore, managements try to keep in touch with their stakeholders in order to raise the company's value and achieve the main goal that is success in markets. Berman, Wicks, Kotha, and Jones (1999) mentions that managements tend to take care of their shareholders in order to achieve earnings, sales and, thereby increasing the returns to owners. Stakeholders have the power to affect the management of companies because they have all the necessary and important resources. Specifically, shareholders since they control the financial resources (Friedman and Miles, 2002; Neu, Warsame, and Pedwell, 1998; Unerman and Bennett, 2004).

The power and influence of several stakeholders' members changes with time. Companies should assess individually the respective influence of each stakeholder and accordingly provide necessary attention with respect to their influence. There are three relationships attributes that are concerned with the stakeholders. These attributes are: legitimacy, power and urgency (Mitchell, Chia, and Loh, 1995). The legitimacy refers to the legitimacy of the ties of the beneficial users with the company, thereby the definition of legitimacy is "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially-constructed system of norms, values, beliefs and definitions". With regards to Legitimacy, (Agle, Mitchell, and Sonnenfeld, 1999) argued that this attribute needs to have a legal title, a moral right, a contract, and a moral incentive in the advantages and disadvantages generated by the company.

The power characteristic refers to the power of stakeholders to impose an impact the company. Pfeffer (1981) defined this power as "a relationship among social actors in which one social actor, A, can get another social actor, B, to do something that B would not otherwise have done". Urgency as he defined is Pfeffer (1981) "the degree to which stakeholder claims call for immediate attention". In other words, the urgency characteristic is a concept that includes criticality and temporality together, thus the stakeholder's claim is considered to be urgent when it is important and in case of a delay, it is highly unacceptable.

Shareholders are considered important stakeholders' groups because they have financial resources (Unerman and Bennett, 2004). Therefore, the agency theory came to identify the association between principles (shareholders) and agent (managers). Rouf and Al Harun (2011) pointed out that managements have detailed information about the company performance, so they may make decisions and take actions that will most likely work to achieve the shareholders' interests. Thus, some companies that use voluntary disclosure tend to seek attention of the shareholders through the presentation of their work that is in line with the shareholders' best of interests (Kiattikulwattana, 2014). On the other hand, Barako (2007) and Rouf and Al Harun (2011) argue that managements may focus on achieving their interests, rather than owners' interests. Thereby some shareholders may not trust in the managers' decisions.

Corporate governance is considered as a one of the monitoring mechanisms that help owners of companies to monitor the managers' behavior with regards to providing information (Rouf and Al Harun, 2011). Therefore, corporate governance variables including ownership structure affect the corporate voluntary disclosure (M Akhtaruddin and Haron, 2010). McKinnon and Dalimunthe (1993) and Rouf and Al Harun (2011) mentioned that the disclosure of the voluntary information helps to align interests between the management and owners with low shares (given that the company has such owners), thereby it is possible to reduce any problems that may happen due to irregularity in information.

### **Literature Review**

Ownership structure is related to the way in which a company is organized and how shareholders can influence the processes of a company (Eng and Mak, 2003). Different shareholders structures are known to impact the corporation's performance and the method and technique of management control differently (Namazi, 2008). In addition, increased ownership diffusion increases the segment disclosure (Mitchell et al., 1995). Therefore, this study used managerial and institutional shareholders as proxies to examine the relationship between the shareholders structures and the voluntary information score.

Managerial and institutional shareholders are two different forms of ownership structure. Managerial shareholders is the percentage of the equity owned by the insiders (CEO and executive directors) relative to all the equities of the company, while institutional shareholders is the proportion of shares owned by institutional shareholders relative to all the shares of the company (Eng and Mak, 2003).

According to the agency theory, it is expected that the agency conflicts may be higher in corporations because of the different interests between the two parties (Ghazali and Weetman, 2006). Mak and Li (2001) points out that increasing the percentage of equity owned by the management members will create new means for them to achieve their interests. Consequently, opportunistic behavior may increase for managers. Thus, it is expected that there is an increased need of monitoring the managerial shareholders value, whether it is low or if there is a diffused ownership (Mak and Li, 2001). Thereby management members tend to have motives to disclose the voluntary information to give signs to other shareholders that the management works for their interests as well. In other words, the association between voluntary disclosure and managerial shareholders is positive.

On other hand, Rouf and Al Harun (2011) mentioned that the agency conflict will fade if the management members have a portion of the shares, this in turn will cause the managers' interests to be in line with shareholders. Therefore, managers may not have incentives to disclose voluntary information because of existing shares, for managers will assert that management works for the shareholders' interests (Lakhal, 2005; Oliveira, Rodrigues, and Craig, 2006). In other words, it seems that the association between the voluntary disclosure and the managerial shareholders is negative. Therefore, it is expected that that the voluntary information will be high with a lower percentage of managerial shareholders; this comes in line with what a majority of researchers such as Eng and Mak (2003) and Ruland, Tung, and George (1990) found, that is less proportion of managerial shareholders relates to better disclosure.

However, institutional investors are considered the most important investors due to the fact that they own a large portion in capital. But since they have no access to corporation information, they tend to be strongly motivated to affect the company's practices as well as disclosure; thereby managements may disclose voluntary information in order to meet what the institutional investors expect. Previous researchers such as: Barako (2007); Bushee and Noe (2000) and Rouf and Al Harun (2011), indicated that the association between voluntary information and the percentage of institutional shareholders is positive. In other words, when

owners have large portion of shares, they may convince the management to increase the information disclosure (El-Gazzar, 1998).

Although few researchers mentioned that the association between the voluntary information and the percentage of institutional ownership is positive, Eng and Mak (2003) found that institutional ownership is not related with the disclosure. While Edwards and Smith (1996) and Prencipe (2004) argued that disclosing more Information is a sensitive and a costly issue. Institutional investors will use their power to pressure the management to decrease the voluntary disclosure. This is because the voluntary disclosure will correspondingly increase the proprietary costs (preparation and competitive costs). Furthermore, Schadewitz and Blevins (1998) found that there is a negative relationship between the disclosure and institutional shareholders. Thus, it seems the association between the voluntary disclosure and the percentage of institutional shareholders is negative.

Generally, previous studies have shown that there are mixed results about the relationship between the percentage of institutional and managerial shareholders and voluntary disclosures. The association between the corporate voluntary information and each of institutional and managerial shareholders could either be positive or negative. Therefore, this study aims to provide evidence about the relationship between the percentage of institutional and managerial shareholders and voluntary disclosures amongst Malaysian listed companies.

## **Scope and Methodology of the Study**

### ***Sample***

The data collected was from the information disclosed in annual reports (2014) for Malaysian listed companies (excluding financial companies, insurance and investments companies, and service companies). The exclusion is necessary because of the differences in characteristics of some items in their financial statements (Sun, Salama, Hussainey, and Habbash, 2010). Bursa Malaysia had 815 listed companies on the main board (Bursa Malaysia, 2015). Therefore, this study runs a separate analysis for a stratified random sample content of 285 companies drawn from the listed Bursa Malaysia.

### ***Measurement of variables***

#### ***1. Voluntary disclosure***

This study used a checklist instrument developed by Madi et al. (2014) to evaluate the voluntary information (disclosure) in the listed companies. This checklist consists of 74 items for all aspects of voluntary disclosure. Those aspects are: strategic information, financial information and non-financial information. According to: M Akhtaruddin and Haron (2010) and Hossain and Hammami (2009), content analysis is by far the most appropriate method through which the findings of disclosure items (checklist instruments) can be analyzed.

#### ***2. Ownership structure***

This study focus on two types of ownership structures: institutional and managerial shareholders. Therefore, it used the following percentages to measure institutional shareholders and managerial shareholders (Elmans, 2012; Qu, 2011; Rouf and Al Harun, 2011):

Institutional ownership = (equity held by institutional shareholders) / (all equity of the company)

Managerial ownership = (equity owned by the insiders) / (all equity of company)

#### ***3. Control variables***

Most of the studies conducted such as Lobo and Zhou (2001), Kiattikulwattana (2014) and Sun et al. (2010) found that size of firm, leverage and return on assets do affect the extent of

voluntary disclosure of companies. Hence, companies that are considered large are likely to disclose more information. An increased leverage generally helps eradicate the cash flow problem as well as the agency cost of debt; however it is necessary to increase the voluntary information in annual reports. Thus, it is expected that the companies with decreased leverage disclose more voluntary information in annual reports. Since the return on assets reflects the companies' performance. Therefore, this study used size of firm, leverage and return on assets as control variables to examine the relationship between the percentage of institutional and managerial shareholders and voluntary disclosures

### ***Regression Model and Test of Hypothesis***

Prior studies used regression to test hypothesis (M Akhtaruddin and Haron, 2010; Eng and Mak, 2003; Ibrahim et al., 2000). The hypotheses developed for this study were:

*H1a: there is a positive association between the level of voluntary disclosure and managerial shareholders.*

*H1b: there is a negative association between the level of voluntary disclosure and managerial shareholders.*

*H2a: there is a positive association between the level of voluntary disclosure and institutional shareholders.*

*H2b: there is a negative association between the level of voluntary disclosure and institutional shareholders.*

Therefore, this study employs multiple regression analysis to test the relationship between the voluntary information score (dependent variables) and institutional and managerial shareholders structure (independent variables). The following model is estimated to test the hypotheses:

$$VD = \alpha + \beta_1 \text{MANAG} + \beta_2 \text{INSTIT} + \beta_3 \text{SIZE} + \beta_4 \text{LEV} + \beta_5 \text{ROA} + \varepsilon$$

Where,

VD: Voluntary disclosures score for separately company, dependent variable

MANAG: Percentage of shares own by the insiders shareholders to all shares of the company, independent variable

INSTIT: Independent Variable, Percentage of shares own by the institutional owners to all shares of the company

SIZE: Control variable, total assets of the company for each company

LEV: Control variable, debt to equity ratio (leverage) for each company

ROA: Control variable, return on total assets for each company

### **Analysis and results**

#### ***Results of Descriptive Statistics***

Table 1 presents the descriptive statistics for the dependent, independent and control variables in this study. The result of voluntary disclosure score (VD) for the sample indicates that the highest score obtained is 62 out of 74 items, and the lowest score is 19 out of 74 items, while the mean of voluntary disclosure score is 32.958. This means that the companies are widely ranged in the extent of voluntary disclosure score. The mean of the managerial shareholders structure (MANAG) is 8.4% with a standard deviation of 13%. The level of institutional shareholders (INSTIT) is high with a mean of 47%, with a standard deviation of 18.8%. The average size (total assets) is 1302663; standard deviation is 2899136 with minimum and maximum amount of 8592 and 22608400 respectively. The mean of return on assets and leverage is 4.19% and 49.8% respectively.

Table 1: The descriptive statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
VD	285	19.000	62.000	32.958	07.463
MANAG	285	00.000	00.638	00.085	00.130
INSTIT	285	00.188	00.880	00.468	00.191
ASSETS	285	8592.00	22608400	1302663	2899136
LEV	285	00.000	04.576	00.499	00.706
ROA	285	-00.514	00.516	00.042	00.082

### Results of Correlation Test

Table-2 provides the Pearson correlation between all the variables (dependent, independent and controls). The results showed that the score of voluntary disclosure is negatively correlated with managerial shareholders (-.181) at significant level  $P < 0.01$ . On the other hand, the level of voluntary information showed the moderate positive correlation with the institutional shareholders (0.193) at a significant level of  $P < 0.01$  while assessing with two-tailed test. The size of company (total assets) is positively associated with the level of voluntary information. Return on assets and leverage are weakly related with voluntary disclosure and not significant.

Table 2: The Pearson correlation test

Variable	VD	MANAG	INSTIT	ASSETS	LEV	ROA
VD	1.00	-.181** .002	.193** .001	.393** .000	.085 .155	.087 .142
MANAG	-.181** .002	1.00	-.141* .017	-.148 .013	-.044 .464	.056 .350
INSTIT	.193** .001	-.141* .017	1.00	.151* .011	-.001 .988	.199** .001
ASSETS	.393** .000	-.148* .013	.151* .011	1	.158** .008	.102 .084
LEV	.085 .155	-.044 .464	-.001 .988	.158** .008	1	-.041 .493
ROA	.087 .142	.056 .350	.199** .001	.102 .084	-.041 .493	1

Note: \* Correlation is significant at the 0.05 level (2-tailed). \*\* Correlation is significant at the 0.01 level (2-tailed).

### Results of Multiple Regression Analysis

Table-3 presents the multiple regression analysis results for the variables. Furthermore, it presents the coefficient of determination, the F ratio, R-square, t-statistics and beta coefficients for the model. The results indicate at 0.000 significant levels, R-square is 0.186, adjusted R

square is .172 and F change value is 12.790. The coefficients values suggest that the variation in voluntary information level can be illuminated by the variations in independent and control variables.

If the managerial shareholders are increased by one unit then the voluntary disclosure (dependent variable) will decrease by -6.540 with a Beta value of -.114, standard error 3.182. This means that companies with a greater percentage of managerial shareholders are indirectly related to the voluntary disclosure information level. These results are similar to that of Rouf and Al Harun (2011), Lakhali (2005) and Oliveira et al. (2006). To explain the reason behind the negative relationship between the managerial shareholders and the voluntary disclosure could be define by the managers' interests with shareholders. Therefore, the mangers do not prefer to disclose the voluntary information.

The institutional shareholders variable are related positively with the voluntary disclosure level at a significant level of ( $P < 0.05$ , two tailed), this means that the companies with a greater percentage of shares owned by institutional owners have high values of voluntary information. The positive relationship is completely true because the institutional shareholders own large shares; thereby they have more power to interfere in corporate disclosure practices. Moreover, these results were similar and in correspondence with the findings of Rouf and Al Harun (2011) and Barako (2007).

Finally, it was deduced that the results for control variables show that the high leverage or large companies (high total assets) are significant with high voluntary disclosure level, but insignificant with return on assets.

Table 3: Regression analysis

Model	B	Std. Error	Beta	t	Sig.
(Constant)	29.925	1.183		25.296	.000
MANAG	-6.540	3.182	-.114	-2.055	.041
INSTIT	4.569	2.195	.117	2.081	.038
ASSETS	9.035E-7	.000	.351	6.269	.000
LEV	.003	.006	.026	.469	.639
ROA	.032	.050	.035	.634	.527

F ratio = 12.790, R-square = 0.186, adjusted R square = .172, Durbin Watson test = 1.826.

### Conclusions of study

This study extends previous studies whereby two shareholders structure attributes and the company characteristics are considered whilst examining their impact on the voluntary disclosure information score. These include the percentage of the managerial and institutional shareholders structure, the size of the company (total assets), leverage and return on assets. To measure the voluntary disclosure level, this study used 74 items consisting of all aspects of the voluntary disclosure (financial, non-financial and strategic information), whereas the sample of this study is a content of 285 listed companies in bursa Malaysia. Despite the fact that the previous studies have mixed arguments about the relationship between the proportion of institutional and managerial shareholders and voluntary disclosures, the results of the study provide evidences that the score of voluntary information is adversely related to a greater percentage of managerial shareholders structure, and positively related to a greater percentage of institutional shareholders. Finally, this study concludes that larger companies with high leverager have greater values of voluntary disclosure whilst the return on assets is weakly related to the voluntary disclosure and hence not significant. However, the results of this study for institutional and managerial shareholders are consistent with previous researches conducted by Rouf and Al Harun (2011), Barako (2007), Lakhali (2005) and Oliveira et al. (2006).

Future studies should seek to provide results about the effect of corporate governance variables on the corporate disclosure rather than shareholders structure, especially after the Malaysian Code on Corporate Governance (2012). Also, it is highly recommended to provide results about the impact of the ownership shareholders on the corporate voluntary information in various sectors such as the financial, insurance, investments and service companies; however this works sample space was limited to consumer, construction, technology, plantation, industrial, hotels, IPC trading and properties companies.

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# Impact of Rewards and Recognition on Malaysian IT Executives Well-being and Turnover Intention: A Conceptual Framework

**Naseebullah Langove\***

*Department of Management and Humanities, Bandar Seri Iskandar, Malaysia*  
Email: naseeb\_lango@yahoo.com

**Ahmad Shahrul Nizam Isha**

*Department of Management and Humanities, Bandar Seri Iskandar, Malaysia*

*\*Corresponding Author*

## **Abstract**

**Purpose:** The main purpose of this study is to develop and propose a conceptual framework that explains rewards and recognition impacts on turnover intention while employee well-being intervenes as a mediator.

**Design:** Based on literature review, this paper develops a conceptual framework comprising on rewards and recognition, employee well-being and turnover intention.

**Findings:** The study propositions are employee well-being that mediates the relationship between rewards and recognition and turnover intention. Rewards and recognition are motivational tools that maximize psychological well-being and minimize the turnover intention among IT executives.

**Research limitations/implications:** This study is conceptual. Therefore, additional research will empirically validate the proposed conceptual framework.

**Practical implications:** This paper will help IT industry managers to understand employees' well-being to minimize the turnover intention for a long period of time.

**Originality/value:** This article considers employee well-being as a mediator variable to minimize the turnover intention among IT Executives of Malaysia.

**Keywords:** Rewards and recognition, Employee well-being, Turnover intention

**Paper Type:** Conceptual Paper

## **Introduction**

In current globalization situation, the competition trend in worldwide stimulates the organizations to sustain a competitive advantage both domestically and internationally (Audretsch, Lehmann, and Wright, 2014). To be competitive and to sustain in the market, organizations constantly weigh heavily pressure on employees (Standley, 2006). Employees would be the primary element along with most crucial aspect in generating and accomplishing desire objectives of the organizations. To sustain a competitive advantage increases the work load on the shoulder of IT professionals (Rutner, Hardgrave, and McKnight, 2008). IT innovations in today's world may extend the employee's roles to work for longer hours (Hoffman, 2003). Such high work demands in addition to low control over a job may build stress (Tsutsumi, 2005) and this generally led to turnover (Calisir, Gumussoy, and Iskin, 2009). According to (Matteson and Ivancevich, 1987) stress partially effects absenteeism, 5% loss of

productivity and 40% of turnover of employees. IT professionals turnover still remains one of the challenging issues for many organizations (Calisir et al., 2009).

The definition given by (Tett and Meyer, 1993) is widely accepted and used pertinently defined turnover intention as: “the conscious and deliberate wilfulness to leave the organisation” (p. 262). There are two types of turnover i.e. voluntary and involuntary. Voluntary turnover is that when someone leaves his or her own accord while the involuntary is that when a person is fired because of poor performance or wrongdoings. Voluntary turnover intention is high and it has a significant cost (F. C. Bothma, 2012) and negative consequences for any organization (Stanz and Greyling, 2010). Highly skilled employees losing may have disruptive consequences in terms of impaired organizational operational, service delivery and administration (C. F. C. Bothma, and Roodt, G., 2013). It may also affect the costs of employee’s re-hiring and re-training for organizations (Sulu, Ceylan, and Kaynak, 2010).

As outlined by (HayGroup, 2013-2014) where they projected that the turnover will certainly increase, particularly in the developing economies of Asia as well as in Latin America. An additional report of (AONHewitt, 2009-2011) pointed out that Malaysia had a turnover rate of 15.9% in 2011, showing a rise over the last years and considered in the sixth position among Asia Pacific countries. Malaysian Employers Federation (MEF) reported that the highest annual turnover rate has been found in the service sector of IT industries with 75.72% (MEF, 2010-2011; Nasyira, Othman, and Ghazali, 2014). Organizational scholars still continue in their attempts to understand the myriad factors that cause employees to quit their jobs (Poon, 2012).

According to Malaysian Employers Federation (MEF) director reported that the high turnover in IT industry is due to work life balance (well-being) (MEF, 2010-2011). According to (Wright, 2006) employee well-being may ultimately prove to be a more robust predictor for employee’s retention decisions. There is a need of employee well-being interventions (Kaplan et al., 2014), which is the best interest of employers and employees to facilitate the well-being at workplace (Schultz, Ryan, Niemiec, Legate, and Williams, 2015). Among the key factors, recognizing employee’s achievements through the facility of career development opportunities turns into locally and globally improved performance (Atambo, Kabare, Munene, and Nyamwamu, 2012). Organizations should make an effort to recognize their best employees so as to represent the expected behavior, commitment, loyalty, retention (Gary, 2008). It is arguable that different compensations in terms of rewards and recognition can affect both employee commitment and employee well-being (McGuire and McLaren, 2009).

According to (Rahman, Naqvi, and Ramay, 2008) retaining employee effects higher customer satisfaction, quality enrichment and also have a significant enhancement in organizational knowledge. This paper is proposing one of mediating variable “employee well-being” to minimize the turnover intention among IT Executives of Malaysia. A very little attention has been given to employee well-being as a mediator and it can be safely assume that it will be helpful for employers to retain their employees for a longer period of time.

### **Literature Review**

This paper highlights core issues in context of employee rewards and recognition, employee well-being and turnover intention of IT executives in Malaysia. In this literature, the role of information technology (IT), employee rewards and recognition, employee well-being and turnover intention have been critically reviewed.

### ***Role of Information Technology (IT) in Malaysian Context***

Globalization nowadays is seen based on two different miracles in which it firstly leads to the firm disintegration, but, on the other hand, becomes the stimuli for a bonding process

(Abecassis-Moedas and Grenier, 2007). This bonding process aims to reorganize production activity in the industry by stimulating the advance method of Information Technology (Ouedraogo and Boyer, 2010). In IT, a wide range of information processing and computer applications is engaged. A variety of researchers have employed many definitions. Here, IT has been defined as an entire industry applying computers, networking, software and other equipment for information management regarding security mechanisms to store, process, retrieve, and protect the company's information (Indika, 2011). It also becomes one of the backbones of any industry for the confidential information protection of the companies. Conversely, the unavailability of IT can lead all important data of a company to be easily conceded by attackers and hackers (Julita, 2011). Principally, the services of IT purposely are for the productivity acceleration in a company, business process automation, effective connection with valuable customers and even information provision. All of these are managed in databases (Julita, 2011). In the 21st century, a worldwide concept of commerce gradually develops as national markets evolve from local to regional networks (Salleh, Yaakob, Arumugam, Yusof, and Ali, 2012). As informed in (WTO, 1999), the increase of exports of merchandise IT products share over 1990's took place from 8.8% to 13.1%. Considering this account only IT imports from the sum of 39 developing and developed countries intensely increased 2.5 times in a short period between 1992-2000 (Salleh et al., 2012). In terms of productivity and economic boom, a number of studies have shown positive and significant impacts of IT investment in the firm and country level (Bosworth and Triplett, 2001; Dedrick, Gurbaxani, and Kraemer, 2003; Jorgenson, 2001).

In Malaysia since independence era, economic progress has been becoming the upshot of a fundamental framework and industrialization strategies. The intention of the Malaysian Plan and vision is for the establishment of a progressive, prosperous and united nation in this case through an achievement with an energetic and sustainable rate of economic development (Ramlan, Ahmed, and Pointon, 2007). In order to reach the growth rate of 9 %, Malaysia, ICT sector came to be the consistently fastest growing industry; this thing will keep on to be a top five paying industry (MOSTI, 2013/2014). The ICT share in the country Gross Domestic Product (GDP) was reached to 6.7% in 2013 while the exports and imports of ICT service significantly increased (MOSTI, 2013/2014).

### ***Rewards and Recognition, Employee Well-Being and Turnover Intention***

Employee recognition is defined as the general acknowledgement or confirmation of a given occurrence or performance (Georgellis, Lange, Ileana Petrescu, and Simmons, 2008). Among the key findings, recognizing the employee's achievements through the facility of career development opportunities turns into locally and globally improved performance (Atambo et al., 2012). Organizations should make an effort to recognize their best employees so as to represent the expected behavior, commitment, loyalty, retention and (Gary, 2008). To make it clearer, it is important to design and restructure an innovative training and development efforts in order to generate a committed workforce and teamwork (Gary, 2008; Georgellis et al., 2008). Rewards and recognition must be given to employees based on their contributions and achievement of professional and personal milestones (Pfeffer, 1998). The rewards can be monetary rewards for instance bonuses or salary increment while the recognition can also be in a different form such as official personal acknowledgment (e.g. newsletter), plaques or honorary ceremonies (Grawitch, Gottschalk, and Munz, 2006). Recognition and reward are the key motivational tools that significantly contribute to job satisfaction, reduce stress and increase organizational effectiveness (Browne, 2000). A specific type of employee recognition is one of the healthy key workplace factors and it is also found out that 70%, organizational costs are related to labor (Pfeffer, 1998). Organizations need to be familiar about the nature of

reward and compensation while implementing policies. Recognition and reward of employees also lead to retain the current employees.

Rewards and recognition are the one of the best criteria offering to employees at workplace to increase the retention (Kwenin, Muathe, and Nzulwa, 2013; Sutherland and Jordaan, 2004). Lack of recognition and reward systems will positively contribute towards turnover intention (Raleigh, 1998). According to (De Gieter and Hofmans, 2015) rewards has a significant relationship with turnover intention and reduce the turnover intention. A various studies have found that recognition for performance is not given will directly lead to job turnover (Hausknecht, Rodda, and Howard, 2009; Hayes et al., 2006; Lu, While, and Barriball, 2005; Takase, Maude, and Manias, 2005; Tourangeau and Cranley, 2006). By recognizing and rewarding, it increases employee's moral, satisfaction and self-esteem as well as a positive impact on employee well-being (Browne, 2000; Van Vegchel, De Jonge, Meijer, and Hamers, 2001). Thus, we assume that:

P1: Rewards and recognition are motivational tools which contribute more towards employee well-being and retentions

### ***Employee Well-being and Turnover Intention***

“Well-being in the workplace” is generally a new concept of management and various competing definitions are exist (Dewe and Kompier, 2008). In recent years, workplace well-being has increasingly attracted researchers and practitioners (Meyer and Maltin, 2010). Previous studies more focused on ill-health consequences and very less attention has been given to positive employee well-being (Schaufeli, 2004; Wright and Cropanzano, 2000). Employee well-being is significant to investigate, not only employee's “optimal functioning” but also in view of improving health, happiness and betterment in his life (Schaufeli, 2004). Well-being is a subjective conception experienced through the pleasant emotions as in self-evaluated happiness, through engaging in interesting and fulfilling activities, and generalized feelings of satisfaction with life (Cartwright and Cooper, 2014).

Interestingly, the relatively low correlation between well-being and personal income is found which indicating how material wealth of itself does not make people happy (Myers, 2000). The workplace comes to be an important part of employee's life to determine his or her life and well-being in the community (Harter, Schmidt, and Keyes, 2003). Employees with average adults spends their quarter or third of waking life at work (Harter et al., 2003). Employee well-being is also the core interests of organizations to get benefit in terms of generating products and profits. Recent survey clearly shows that most of the employees see or desire a meaningful, enjoyable and socially useful work in their organizations (Avolio and Sosik, 1999; Wrzesniewski, McCauley, Rozin, and Schwartz, 1997).

It is explained in (Vandenberg and Nelson, 1999) that organizational commitment, job satisfaction, and well-being at work are the predictors of the coming out of turnover intentions. A study by (Wright and Bonett, 2007) revealed a noteworthy impact of psychological well-being on job satisfaction and negative impact on turnover intention relationship. Having fulfilled their well-being in the workplace, employees might be more productive, positively contributing to the organization's goals, and making intentions to leave minimized (Harter et al., 2003). As suggested by (Robertson and Cooper, 2011), an employee well-being has a significant contribution to the enhancement of productivity and organizational performance. Hence, it also enhances customer service, profitability, and minimizes employee turnover (Amin and Akbar, 2013). Based on above justification, hence it is assumed that:

P2: Employee well-being conclusively proves to be a strong predictor of employee retention.

### **Proposed Conceptual Framework**

Based on an extensive literature review, a conceptual framework has been developed to examine the relationship between rewards and recognition and turnover intention while employee well-being acts as a mediating factor among the IT executives of Malaysia. Figure 1 depicts the proposed conceptual framework of the study. This is hypothesized that employee rewards and recognition has a negative relationship with turnover intention and employee well-being mediates the relationship between rewards and recognition and turnover intention.

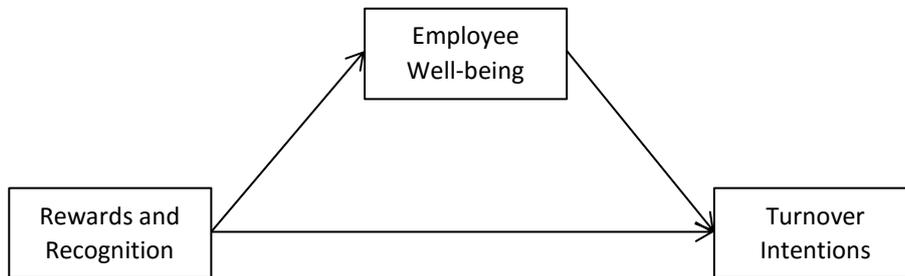


Figure 1: Proposed Conceptual Framework

### Proposed Methodology

This study will examine the relationship of rewards and recognition, employee well-being and turnover intention. The focus of the study is to conduct a survey among IT executives in Malaysia among IT industries of software development companies. Data will be collected through a structured questionnaire. The collected data will be analyzed with the help of a statistical tool SPSS (Statistical Packages for the Social Science) and the AMOS by using techniques of structural equation modeling.

### Scale Measurement

Measurement scales of this study have been given below to test the each scale and its relationship.

#### *Rewards and Recognition*

Rewards and recognition can be measured by adopting the measurement scale of (Vandenberg, Richardson, and Eastman, 1999) with five items of Likert scale ranging from (1 strongly disagree to 5 strongly agree). The example of the items is “I am satisfied with the amount of recognition I receive when I do a good job”, “Generally, I feel this company rewards employees who make an extra effort”.

#### *Employee Well-Being*

Employee well-being is generally considered as comprising of happiness, health and relationship-oriented element (Boxall and Macky, 2014; Grant, Christianson, and Price, 2007). Additionally this study (Boxall and Macky, 2014) has related the concept of happiness with global job satisfaction and whereas health and relationship-oriented has been complemented with the concepts of stress and work life balance respectively. In this study, we are focusing on job satisfaction and work life balance as employee well-being dimensions.

Employee well-being will be measured on two scales likewise job satisfaction and work life balance.

#### *Job Satisfaction*

Job satisfaction will be measured on four items from (Macdonald and MacIntyre, 1997) adopted. As a sample, the items include as “I feel good about working at this company”, “On the whole, I believe work is good for my physical health”. The items are scored on a five point Likert scale ranging from 1 strongly disagree to 5 strongly agree.

### **Work life Balance**

Work life balance will be measured on five items from (Boxall and Macky, 2014) adopted. As for the item is concerned, it will be “After work, I come home too tired to do some of the things I’d like to do”, “My family or friends dislike how often I am preoccupied with my work while I am at home”. The items will be ranging from “1 Never to 5 very often”.

### **Turnover Intention**

The turnover intention measure is based on five items from (Ganesan and Weitz, 1996) adopted. It included items related to the three cognitions of the thought of quitting, search, and the intention to quit. As, for instance the items will be “I do not think I will spend my entire career with this organization”. The items based on five Likert scale ranging from (1 strongly disagree to 5 strongly agree).

### **Conclusion and Future Work**

In current era of globalization, the trend of competition stimulates worldwide and enforcing government and organizations to sustain a competitive advantage domestically and internationally. In this regard, all the organizations depend on human capital to fulfil their objectives while ignoring the interest and well-being of employees, which in turn enhance stress and lead to turnover intention. According to the Malaysian Employer Federation (MEF) executive director the main factor behind turnover in Malaysia is work life balance. Additionally, this study enhances the empirical literature by integrating rewards and recognition and employee well-being with the turnover intention.

This conceptual framework will be tested among the executives of IT software industries. As for analysis and relationship of variables, structural equation modelling will be used to validate the proposed framework.

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# Innovation Diffusion Attributes as Predictors to Adoption of Green Fertilizer Technology among Paddy Farmers in Perak State

**Sobia Mannan\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*  
Email sobiamannan@gmail.com

**Shahrina Md Nordin**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Shameem Rafik-Galea**

*Department of English, Faculty of Modern Languages and Communication*  
*Universiti Putra Malaysia, Malaysia*

*\*Corresponding Author*

## **Abstract**

**Purpose:** The aim of this study is to explore the impact of innovation attributes on green fertilizer technology (GFT) adoption among paddy farmers in Perak, Malaysia.

**Methodology:** The study employed the quantitative approach by using survey method. The respondents consisted of 366 paddy farmers from IADA Seberang Perak, IADA Sungai Manik and IADA Kerian in Perak, Malaysia.

**Findings:** From the analyzed data, this study found that only compatibility has an impact on GFT adoption among farmers. Hence, the technology can be compatible to increased yielding varieties of paddy farm production and thus rice farming can result to increased income of farmers and also lead to increased supply of food production.

**Implications:** The finding of this study has several implications for policy makers in the agricultural sector.

**Originality:** This study is conducted to investigate the impact of innovation attributes on GFT adoption among paddy farmers. Two main analysis techniques were used in this study were 1) Descriptive statistics and 2) Inferential statistics. Descriptive statistics was used to examine the level of every variables meanwhile inferential statistics was used to investigate the impact of innovation attributes on GFT adoption among paddy farmers.

**Keywords:** Diffusion attributes, Adoption, Green Fertilizer, Paddy Farmers, Perak

## **Introduction**

Malaysian paddy rice has always been the main commodity and major staple food for the nation. The current research is to study on innovation diffusion and adoption rate in the context of Malaysian paddy farming. In Malaysia, paddy is produced mainly by small holders with an average farm size of about 1.06 hectare. The total paddy production at the national level increased from 1.7 million tons in 1985 to 2.1 million tons in 1995 while average yield per hectare per season increased from 2.7 tons in 1985 to 3.2 tons in 1995. However, the Malaysian government pays special attention to paddy farming because of its strategic value. There are approximately 300,000 paddy farmers involved in paddy cultivation (Man and Sadiya, 2009).

Some are small holders but some of the farmers work in granary areas. The granary areas of rice production called Integrated Agricultural Development Authority (IADA). There are eight granary areas under IADA namely, i) Muda Agricultural Development Authority (MADA) in Kedah ii) Kemubu Agricultural Development Authority (KADA) in Kelantan iii) KemasinSemerak Project (PKSM) in Kelantan iv) North-West Selangor Project (PBLs) in Selangor v) SeberangPerai IADA in Pulau Penang vi) Kerian Sungai Manik IADA in Perak vii) SeberangPerak in Perak viii) KETARA in Besut, Terengganu. According to Ministry of Agriculture and Agro-based industry, IADA as the main paddy producer that meets 72% demand of the country (MARDI, 2010). Based on FAOstat(FAOstat, 2015) the yearly production of rice stands at 2.7 million metric tons which is not sufficient for the country. Sustainability of paddy plantation is hence essential in Malaysia as it is recognized as staple food for the majority of Malaysian. The average production of paddy per hectare including non-granary area is 3.6 tons per hectare (DOA, 2011) which is much lower compared to achievement of the granary area.

Technology could become one of the main elements to further develop this sector. There has been a dazzling array of new technologies that has profoundly affected the nature of farming (Cochrane, 2000). Adoption of key technologies however remains low in many Asian countries, despite large demonstrated profit from technologies such as efficient and timely fertilizer application, organic composting and reduced tillage planting techniques. Various government agencies facilitate the growth and enhancement of the agricultural sector which includes Malaysian Agricultural Research Development Institute (MARDI) which was established in 1969. Furthermore, MARDI is responsible for the development of technologies towards rapid advancement in the paddy sector. MARDI also plays an important role in Transfer of Technology (TOT). Hence MARDI supports the development of new technologies to increase farm income and farm profitability ([www.mardi.gov.my](http://www.mardi.gov.my)).

Innovation is an idea that is new to individuals or unit of adoption (Rogers, 2003) which is meant to enhance the quality of processes or any commodity. Innovation diffusion is a process where innovations are communicated through different communication channels over time. The first element of diffusion of innovation theory is attributes of innovation that helps to decrease uncertainty about the innovation and increase rate of adoption. It consists of five characteristics of innovation: Relative advantage, Compatibility, Complexity, Trialability and Observability. As mentioned earlier, production is low as the demand is high in the country. Only 72% of rice is being produced in Malaysia, while yield is still lower than those under comparable conditions elsewhere. The main challenges in agriculture are the inefficiencies of new technologies among farmers. On the other hand the commercialization of agricultural technologies, modern farming practices and also the cost of production is considerably high due to this farmers are not able to adopt innovations. The overall objective of this study is to analyze the impact of innovation attributes on Green Fertilizer Technology (GFT) adoption among paddy farmers in Perak.

## **Literature Review**

### ***Diffusion of Innovation***

Diffusion research also looks into how agricultural innovations spread from farmer to farmer (Mary and Robert, 2002). Amongst the first researchers i.e. (Roger, 2003) sought to explain why one farmer would know about an innovation and adopt use of certain pesticides while his neighbor does not know. Everett Rogers (Roger, 2003), has primarily studies the dynamics of the diffusion of innovation.

The diffusion of innovation attracts studies from multidisciplinary perspective (Carter *et al.*, 2001; McGrath and Zell, 2001). The studies mostly stem from Rogers' (2003) Diffusion of Innovation (DOI) theory, he defined the diffusion of innovation theory as the process by which

an innovation is communicated through certain channels over time among the members of social system. DOI tends to describe the pattern of adoption; explain the mechanism and helps in predicting the success of new innovations adopted (Roger, 2003). Rogers' well established theory is hence incorporated into the framework of this study.

### ***Attribute of Innovation***

Rogers (2003), described the innovation-diffusion process as “uncertainty reduction process” (p232), as he proposed attributes of innovation that helps to decrease uncertainty about the innovation and increase rate of adoption. It consists of five characteristics of innovation which influences their rate of adoption: Relative advantage, Compatibility, Complexity, Trialability and Observability. He noted that there is a lack of research on the effect of the perceived characteristics of innovations on the rate of adoption and innovation that can further be changed or modified by users.

### ***Relative Advantage***

Relative advantage as “the degree to which an innovation is seen as better than the idea it replaces or supersedes (Roger, 2003, p. 229). The elements of relative advantage in diffusion of innovation theory are cost and social status motivation aspects of innovation. Diffusion scholars have found relative advantage to be one of the best predictors of an innovations perception of adoption. The relative advantage of an innovation is positively related to adoption. Furthermore, other researchers (Joo and Kim, 2008; Miller and Meek, 2004; Liao and Lu, 2008) had done studies on the relative advantage of IPM practices found that additional IPM practices benefits such as economic profitability, decreasing production cost and effort saving influence farmers' decision. In the case studies described by Robertson et al., (2012), also reported that intangible benefits listed by farmers were the ability to conduct on farms trials, increased knowledge of field variability and increased confidence in decision making. Another motivation factor in the diffusion process is the compatibility attribute.

### ***Compatibility***

Compatibility refers to the degree to which an innovation is perceived as consistent with the existing values, past experience and needs of potential adopters (Roger, 2003) (p.15). In the past studies, compatibility appears to have a significant impact on willingness to adopt and awareness of technologies, for example a study by (Sarel and Marmorstein, 2003) showed significantly positive relationship between compatibility and perception for adoption. Compatibility is closely related to the concept of relative advantage in that they both are viewed in the context of current practices. Farmers will be wary of radical innovations that differ significantly from those with which they are familiar and comfortable (Robertson, *et al.*, 2012). Thus, compatibility is an important part of innovation.

### ***Complexity***

Complexity is the degree to which an innovation is perceived as relatively difficult to understand or use (Roger, 2003). A low level of complexity lead to higher adoption rate or complexity that increases the rate of rejection (Roger, 2003; Sarel and Marmorstein, 2003). Al-Ghaith *et al.* (2010) noted that perceived complexity was the most significantly related factor affecting adoption. (Teo, 2003) also identified complexity to be an important factor in the adoption. The authors argued that when the innovation was perceived to be highly complex, users tend to perceive them to be highly useful even though they experience a certain degree of difficulty in using it.

***Trialability***

Trialability, on the other hand, refers to the degree to which an innovation may be experimented on a limited basis (Roger, 2003). Previous studies Rogers (1995), described new ideas that can be tried on the part of the plan are generally adopted more rapidly than innovations that are not separable. According to Kolodinsky *et al.*, (2004) sometimes trialability provides farmers the ability to evaluate innovation benefits. Consequently, if farmers are given the opportunity to try the innovation certain fears of the unknown and inability to use can be reduced. Studies indicate that prior experience with technological innovation might increase the adoption (Hausman and Stock, 2004). Findings from Gardner and Amoroso (Gardner *et al.*, 2004) showed the importance of trialability as a variable affecting the perceived adoption.

***Observability***

The last element observability is the degree to which innovations are visible to others (p.16). Limthongchai and Speece (2003) stated that observability is hard to establish in a market that is dominated by an established technology. However, problems related to low observability are readily overcome by group based efforts around on-farm trials. Robertson *et al.*, (1995), previously raised the major constraints to adoption of new technologies are unlikely to be related to observation and subsequently awareness of the innovations local existence.

***Green Fertilizer Technology (GFT) Adoption***

Adoption is the relative ability with which an innovation is adopted by members of a social system (Roger, 2003). An extensive part of the adoption literature has focused on technology adoption by paddy farmers in developing countries. In a study of Adimiharja (Adimiharja, 2009), paddy production can be improved by optimizing the technologies (FAOstat, 2015; Mubyarto, 2002; Darajati and Wahyuningsih, 2008; Sjakiret *et al.*, 2015). Technology adoption by farmers is crucial to increase agricultural productivity (Abebawet *et al.*, 2013). A specific part of this literature has focused on the adoption of fertilizer, and has been reviewed by (Zaim *et al.*, 2013). Past research have focused on the role of markets in fertilizer adoption (Banful, 2011; Pan and Christiaensen, 2012). While others have explored the role of fertilizer profitability (Dufloet *et al.*, 2009). The adoption of an innovation is influenced by innovation attributes. Pennings *et al.* (1992) stated that technology innovation risk is the possibility technology innovation failure caused by technology characteristics, inefficiency information delivery. Cooper (1999), outlines seven critical factors in product innovation as the new product development “blockers” to avoid repeating the same mistakes. Saaty and Luis (2013) divided technology innovation risk in to technology risk, market risk, organizing risk and environmental risk.

### Research Framework

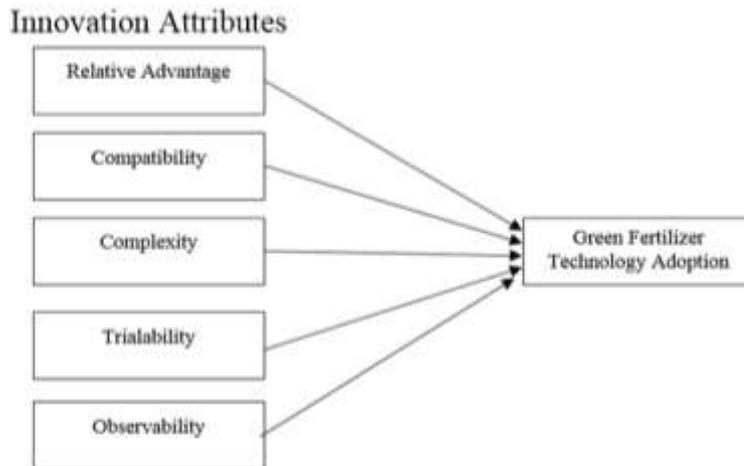


Figure 1: Research framework

Based on the above framework, five hypotheses are proposed.

*H1: There is a positive impact of relative advantage on GFT adoption.*

*H2: There is a positive impact of compatibility on GFT adoption.*

*H3: There is a negative impact of complexity on GFT adoption.*

*H4: There is a positive impact of observability on GFT adoption.*

*H5: There is a positive impact of trialability on GFT adoption.*

### Methodology

Consistent with the aim of the study “to investigate the impact of innovation attributes on GFT adoption among paddy farmers in Perak”, this study hence, adopted quantitative research approach, and survey type questionnaire to fulfil the aim of the study. This study focused on the paddy farmers which are from three granaries: IADA Seberang Perak, IADA Sungai Manik and IADA Kerian. A total population from these granaries is 15,375. Based on the Krejcie and Morgan (1970), sampling table, the sample size that should be taken from 15,375 population is 366. Thus, sample size for IADA Kerian is 218, IADA sungaiManik is 63 and IADA Seberang Perak is 85 which is shown in table 1.

Table 1. Summary of sample size

Granaries	Stratified population	Calculation	Sample Size
IADA Kerian	9,391	$(9,391/15,753)*366$	218
IADA Sungai Manik	2,700	$(2,700/15,753)*366$	63
IADA Seberang	3,662	$(3,662/15,753)*366$	85
Total	15,753		366

### Results and Discussion

The initial analysis for this study is descriptive statistics. First, this study describes frequency and percentage of respondents’ demography as presented in table 2.

Table 2. Summary of frequency and percentage of respondents’ demography

Variable		Frequency	Percentage (%)
District	IADA Kerian	217	53.1
	IADA Seberang Perak	86	21.0
	IADA Sungai Manik	63	15.4

Gender	Male	351	96
	Female	15	4
Age	<25years old	12	3.3
	25-30 years old	10	2.7
	31-40 years old	59	16.1
	41-50 years old	103	28.1
	51-60 years old	117	32.0
	>60 years old	65	17.8
Education Level	No school	7	1.9
	primary school	101	27.6
	secondary school	239	65.3
	Diploma	19	5.2
Farming Experience	1-10	102	27.9
	11-20	74	20.2
	21-30	85	23.2
	31-40	56	15.3
	41-50	36	9.8
	More than 50	13	3.6

### **Reliability Test**

Table 3 shows the summary result of the Cronbach's coefficient alpha which range from 0.70 to 0.90. The score of Cronbach's alpha 0.60 is considered to be poor, 0.70 is considered to be acceptable and the score over 0.80 is good (Sekaran, 1992). Therefore, the instrument used is internally consistent and reliable.

Table 3. Reliability Statistics

Dimension/Scale	Items	Cronbach's Alpha
Relative Advantage	4	0.861
Compatibility	3	0.836
Complexity	5	0.874
Observability	2	0.811
Trialability	4	0.756
GFT Adoption	3	0.724

### **Descriptive Analysis**

In this section, descriptive analysis was conducted using Statistical Package for Social Sciences (SPSS) to examine the mean and standard deviation to measure the level of innovation attributes (Relative advantage, compatibility, complexity, trialability and observability) and GFT adoption. Table 4 shows the descriptive analysis for each of the variables. The total average score for relative advantage is  $m=4.19$  ( $SD=.54$ ). The finding indicates that the farmers believe that new fertilizer technologies can improve crop quality. Meanwhile, the total average score for compatibility is  $m=4.00$  ( $SD=.64$ ), Respondents of this study are believe that new fertilizer technologies are completely compatible with their current entire situation and also fit into their work style and work schedule. The findings of complexity illustrates that using green fertilizer technologies are often frustrating if the technology is complex or difficult to understand, mean score is 2.70. The total average score for observability is ( $m=4.05$ ,  $SD=.58$ ), Respondents of this study however see what others do using new fertilizer technologies. Farmers also believe new technologies are productive. The average mean score for all components in trialability is 3.706 while the standard deviation is 0.629. Respondents of this study however would like to be permitted to use new fertilizer technologies on a trial basis. The findings of GFT adoption

represents that respondents are eager to adopt new fertilizer technologies. The total average score for observability is  $m = 3.89$  ( $SD = .591$ ).

Table 4. Summary of Descriptive Analysis of all Variables

Variables	Mean	SD	N
Relative Advantage	4.191	0.542	366
Compatibility	4.009	0.643	366
Complexity	2.706	0.866	366
Observability	4.054	0.582	366
Trialability	3.706	0.629	366
GFT Adoption	3.891	0.591	366

### Multiple Regression Test

The statistical result of the analysis allowed this study to answer the stated objective. The model which includes relative advantage, compatibility, complexity, observability and trialability explains 25.5% of the variance on GFT adoption. From these variables compatibility makes the most significant contribution ( $\beta = 0.184$ ,  $p < 0.05$ ) to the dependent variable (GFT adoption). However, relative advantage ( $\beta = 0.009$ ,  $p > 0.05$ ), complexity ( $\beta = 0.039$ ,  $p > 0.05$ ), observability ( $\beta = 0.032$ ,  $p > 0.05$ ) and trialability ( $\beta = 0.035$ ,  $p > 0.05$ ) showed there was no significant contribution to the dependent variable (GFT adoption). The details of the findings are presented in table 5 and 6.

Table 5. Model summary of Multiple Regression Analysis

Model	R	R-Square	Adjusted R Square	Standard Deviation
1	0.505 <sup>a</sup>	0.255	0.239	0.51631

Table 6: Coefficient Table for Multiple Regression Test

Model	Beta	Sig
Relative Advantage	0.009	0.884
Compatibility	0.184	0.002
Complexity	0.039	0.416
Observability	0.032	0.576
Trialability	0.035	0.510

Dependent Variable: GFT adoption (\* $p$  value  $< 0.05$ )

### Conclusion

A number of conclusions can be made based on the data analyses. This study is conducted to investigate the impact of innovation attributes on GFT adoption among paddy farmers. Two main analysis techniques were used in this study were 1) Descriptive statistics and 2) Inferential statistics. Descriptive statistics was used to examine the level of every variables meanwhile inferential statistics was used to investigate the impact of innovation attributes on GFT adoption among paddy farmers. From the analysis that has been done, hypotheses 2 is accepted and hypotheses 1, 3, 4 and 5 are rejected. Hence, the technology can be compatible to increased yielding varieties of paddy farm production and thus rice farming can result to increased income of farmers and also lead to increased supply of food production.

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# Moulding Workers' Mindset and Behavior: A Case of Lubricant Blending Plant in Malaysia

**Zulkipli Ghazali**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

Email: zulkipli\_g@petronas.com.my

## **Abstract**

**Purpose:** The present research aims to identify the work-related values, attitudes and behavioral patterns of the workers and highlights their primary motivation of work. As every organization needs people in order to function, a far-reaching understanding of the motivation for work requires some attention be directed towards the question of why people behave as they do on the job. The determinants of employee work behavior and the consequences of such behavior for an organization must be understood.

**Design/methodology/approach:** A qualitative data gathering through group interview session has been chosen. This method is quick and convenient in collect data from several people simultaneously. It is practical for investigating the workers' experiences and to examine not only what they think about the current situation, but how they think and why they think that way. In total, 18 participants were involved. Group interview session reaches the parts that other methods cannot reach, revealing hidden transcripts for instance individual voices of dissent that often remain untapped by conventional data collection techniques such as survey questionnaires. Semi-structured interviews with key informants on a one to one basis were carried out to further confirm the information gathered during the group interview sessions. Complementing the interviews, questionnaires were administered to 45 lube plant staff and the workers. The questionnaires were used to appraise the perceived management styles of supervisors and preferred work values of the workers.

**Findings:** The study highlights while primary motivation of work would be money, personal time and attention from the immediate superior was cited by workers as most rewarding and motivational for them. Factors such as fair reward system, leadership qualities, culture of partnership, and career progression underlie the workers' mindset and behavior.

**Practical implications:** The study highlighted a range of factors that influence workforce motivation in the organization of a lube blending plant in Malaysia. The need for job satisfaction, career advancement, and recognition for achievement were among the voices of the workers. The findings obtained from the voices of the workers have shown that reward system, leadership qualities, culture of partnership, and career progression would be the appropriate organizational levers to mitigate mindset and behavioral change among the workers of the lube blending plant. Thus, it is imperative for organizations to take heed of the above that can influence employees' mindset and behavior and the underlying organizational values.

**Originality/value:** This study supports the previous studies that have been conducted on employees' motivation.

**Research limitations:** This study looks at the perspective of the workers. The findings will be more complete by comparing the management perspectives on the factors that shape the workers motivation.

**Keywords:** motivation; reward system; leadership qualities; culture of partnership; career progression

**Paper type:** Research Paper

### **Introduction**

Managers cannot avoid the concern with the behavioral requirements of an organization. Every organization needs people in order to function. A broad understanding of the way in which organization function requires some attention be directed towards the question of why people behave as they do on the job. The determinants of employee work behavior and the consequences of such behavior for an organization must be understood. Given the ever-tightening constraints placed on organization by foreign and domestic competition, management has to look for ways to improve and sustain the level of organizational effectiveness and efficiency. One of the options is to draw full benefits from the organizational resources including human resource. This is attainable through management's ability to motivate its employees to direct their reasonable efforts towards the goals of the organization. New approaches and greater understanding of behavior at work and the performance of the employees are required to deal with the complexities of contemporary organizations (Daft, 2014).

In this regard, there is a need to uncover the black box that explains the state of current performance level of the employees in the organization. The contributing factors that affect performance, among others are the quality of social relationships among the employees, power distance and perceptions of justice (fairness) to name a few (Nohria, Groysberg, and Lee, 2008). Perceptions of fairness indicate that employees' interests are protected, serve a relational purpose when employees make comparisons between self and others. There is a need for an alignment between the various elements of the organization. The importance of alignment between the company's competitive strategy, structure, and values should not be underestimated. In this respect, the appropriate fit between the internal social environment and the firm's culture, structure, strategy, and process is crucial. Thus, it is imperative for organizations to take heed of their employees' mindset and behavior and the underlying organizational values.

A case in-point is the management of one of the lube blending plant in Malaysia. The company is currently undertaking various initiatives for organizational improvement and performance. Apart from addressing the technical dimensions of the plant, the management, at the same time is also looking into the mindset and behavioral dimensions of the workforce for increased performance and productivity. The initiative is in line with many organizations that have voiced the idea that their human resources differentiate them from their competitors. Indeed, getting people to do their best work, even in trying circumstances, is one of managers' most enduring challenges. Towards that end, a mindset and behavioral study is performed to ascertain and comprehend the present attitudes, values, and behavior patterns among members of the plant workforce. The results of the study serve as a guide in planning for initiatives and interventions. The lube plant management consists of permanent staff employed by the company. However, large majority of the skilled and semi-skilled operatives in the plant are contract employees hired by a manpower agency appointed by the company.

### **Objectives**

The present study seeks to understand the various forms of organizational factors for workforce motivation in the organization of a lube blending plant in Malaysia. The primary objective is to identify the various problems relating to work and physical working conditions, work-related values and attitudes of the contract workforce. Further, it examines the factors that influence their motivational drive that can be formulated as intervention strategies and initiatives for mindset and behavioral change.

## **Research Methodology**

### ***Group Interviews***

For the qualitative data, a group interview session in the form of group setting workshop were conducted on 17th and 18th September 2013 at the premise of the lube blending plant. Group interview was used as quick and convenient way to collect data from several people simultaneously. It is practical for investigating the workers' experiences and to examine not only what they think about the current situation, but how they think and why they think that way (Morgan, 1997; Stewart and Shamdasani, 2014). In addition, the group interview is an effective technique for exploring the attitudes and needs of the workers. In this sense, interviews reach the parts that other methods cannot reach, revealing hidden transcripts for instance individual voices of dissent that often remain untapped by conventional data collection techniques such as survey questionnaires. It highlights cultural values or group norms that are useful for studying dominant cultural values and examining work place culture. A comfortable setting with refreshments and circular sitting arrangement was used to establish the right atmosphere. In order to capitalize on the workers' shared experiences, homogeneity within each group was emphasized. The interviewees of the workshop consisted of 18 contract workers from the plant. These employees are hired by a contractor appointed by the company to operate the lube production plant. The interview session was conducted in the multi-purpose area in the plant. The researcher acted as the moderator of the workshop. The moderator began the session by welcoming and thanking the participants. The moderator introduced himself and explained his role, the study in general, the purpose and objectives of the group interview and the selection criteria of the participants. The participants were briefed on the session's itinerary, format of the interview, and set the ground rules. The participants were also informed that there is no right or wrong answers and that their opinions are important. Full participation from all is the utmost important.

### ***Other data collection methods***

Following the group interviews, semi-structured interviews with key informants on a one to one basis were carried out to further confirm the information gathered during the group interview sessions. Complementing the interviews, questionnaires were administered to the lube plant staff and the workers. The questionnaires were used to appraise the perceived management styles of supervisors and preferred work values of the workers. These constructs are operationalized using three dimensions of cultural values namely individualism/collectivism, power distance, and masculinity/femininity (Hofstede, 1984; Rose, Kumar, Abdullah, and Ling, 2008).

### ***Demography of Contract Workers***

A basic knowledge of the background information of the personnel forms a useful start towards understanding their ensuing behavioral pattern. The demographic characteristics of the personnel will be utilized for in-depth comparison of the behavioral dimensions studied.

### ***Gender***

A total of 47 workers (50% response rate) responded to the survey. Majority (87%) of the respondents are male and the remaining 13% are female. The male dominant statistic reflects the nature of the factory work. The female workers are mainly doing administrative works.

***Age***

Large majority (93%) of the respondents are between 21 to 40 years, indicating young group of workers. This young group of employees poses distinctive challenges to management. They are energetic, have large drive and enthusiasm. They strive in challenging environment but require a lot of attention and feedback. The balance (7%) are more than 40 years of age.

***Marital Status***

Majority (51%) of the *employees* are still single. The remaining respondents (47%) indicated that they are married and one respondent (2 percent) is divorced.

***Number of Children***

Among those who are married, 47% have children. Close to 24% of them have three to five children and 23% had less than three children. The remaining 53% have no children yet. The young contract workers are having young children, either not yet in school, in pre-schools or primary schools.

***Highest qualification gained***

The highest qualification gained ranges from primary education to certificate / diploma. Generally, this represents lower education levels achievement. The statistics show that large majority (83%) received secondary level education (both lower and upper secondary). Certificate/Diploma holders constitute 15% of the personnel followed by another 2 percent who received primary level of education. The rather lower academic qualification among these contract workforce reflects the levels of occupation in the factory floor namely line-leaders and operative workforce that emphasize skills and factory work experience.

***Monthly Salary***

The salary of the contract workers ranges from less than RM1,000 to a maximum range of RM3,000. The average salary is RM873 per month. Large majority (53%) of the respondents received between RM1,001 to RM2,000 per month. Another 45% of the respondents were paid lower than RM1,000 per month. One of the respondents (2 percent) was paid between RM2,001 to RM3,000 a month. The statistics revealed a relatively low monthly salary among members of the contract workers.

***Monthly Allowances***

The entitlement of monthly allowances varies according to the occupation of the respondents. Statistics shows that 19% of the respondents do not have monthly allowances. Large majority (77%) received allowances ranging from less than RM100 to RM300. Another 4 percent were paid monthly allowances between RM301 to RM500.

***Monthly Overtime Payment***

The entitlement to monthly overtime work depends on the available work load to meet market demands of the lubricants. About 34% of the respondents received less than RM100 monthly overtime payment. Another 32% received overtime payment ranging from RM101 to RM300. Additional 30% were paid monthly overtime between RM301 to RM500. Only one respondent claimed receiving between RM501 to RM700. On the other hand, one respondent did not have overtime work. The monthly allowances and overtime payment provide additional income to these lower groups of salaried workers.

***Distance Travel to Work***

The statistics show that large majority (72%) of the respondents live nearby the workplace (a distance less than 15km. The other 28% travel a distance of more than 15km daily.

***Wife / Husband Occupation***

Only small percentage (13%) of the respondents' spouses is working. The balance of the respondents' spouses is either not working (40%) or the respondents are single (47%). The working spouses are employed either in private (8.5%) sector or public sector (4.3%). The balance 2 percent (1 respondent) is self-employed. It shows that most of the respondents are sole breadwinner to the family.

***Length of Service***

Large majority of the contract workers (59%) are newly recruited by the contractor. They have been in the organization for not more than two years. The balance 41% has been with the organization for more than three years. This is due to high employee turnover. As the employees are young and single, their mobility is high to seek for more attractive wages in the nearby factories. As such, training, guidance and instruction are crucial to majority of the contract workers as they are new to the work environment.

**Results and Findings*****Group Interviews Session***

The group interview session was conducted in Bahasa Malaysia for the convenient of the participants. The following question was put forth to the interviewees during the group interviews session.

***What are the most pressing issues and problems affecting the workers?***

The participants were required to write a minimum of five (5) responses, each on a piece of card. They were given 10 minutes to do so. Next, every participant was requested to hand over one written response (one card) to the moderator. These cards were flashed to all participants one at a time and posted on the wall. By agreement of the participants, those cards that contain comparable responses or statements were grouped to similar category. In this process, few categories were developed and identified. Following that, another batch of cards was collected and posted to the wall according to the relevant categories. Similar process was followed until all the cards were posted to the appropriate categories. Subsequently, suitable theme for each category was consensually designated and named by the participants. Reward and remuneration, workers' welfare, benefits, leadership, teamwork and communication, work culture, work environment, and talent management are the major concerns voiced by the plant staff and the contractor's employees. It is evident that their concerns are not entirely on the intrinsic factors but also factors that relate to their work environment (extrinsic) as well (Trompenaars and Coebergh, 2014).

The interviewees highlighted their discontent about their current salary, bonus, allowances, and the company's contribution towards employees' provident fund (EPF). Accordingly, salaries do not commensurate with the work experience and that was one of the reasons for high turnover. Coming from the working class people, their concerns were profoundly echoed as below:

*Have been working for quite sometimes in the plant, but salaries are the same with new employees. That is why many people left.*

*Low salary*

*No bonus*  
*Did not get the appropriate allowances*  
*Increment does not commensurate with the increase in living cost*  
*Outstanding payment of EPF contribution by the employer*

This is the root-cause of the dissatisfaction that translated into negative behavior patterns among the workers. The main reason for working is to earn money. The money from compensation, salary, bonuses, benefits or remuneration pays the bills, provides housing, gives children clothing and food, sends teens to college, and allows leisure activities. To underrate the importance of money and benefits as motivation for people who work is an oversight. Fair benefits and pay provide a living wage for these employees. Fair living wage is the most important extrinsic factor that prevent dissatisfaction. It is a factor in the equation for mindset and behavioral change among the workers.

The benefits workers receive for his welfare are often a significant reason for them to stay with the company. Fostering personal happiness and growth among the workers pays in terms of higher productivity and greater loyalty. The workers felt that they are valued by the company. It also provide good image for the company. The workers' concerns on the state of their welfare were clearly illustrated in the following statement:

*My welfare as a worker is neglected and are not well taken care*  
*There is no canteen for us to take our meals*  
*No recreational and sport activities*  
*Annual leaves has been reduced from 15 days to 12 days . . .*  
*No appropriate programs to close the rank between workers and Bosses . . .*  
*The prayer room provided for the workers is not comfortable*

Other factors such as teamwork, communication, work culture, and work environment form important component that relate to the environment in which the job is performed. This is commonly referred to as the hygiene factors. Respondents highlight their dissatisfaction for the lack of teamwork between operatives and management staff, poor communication, lack of engagement to name a few. Perfect examples of the concerns voiced by the employees include:

*No teamwork between staff and operatives*  
*Big gap between management and operatives*  
*Supervisor unreceptive to views and opinion of employees*  
*No proper channel of communication*  
*Do not know where to voice our work-related problem*  
*Supervisors do not appreciate the workers*  
*Safety is not given significant emphasis, many hazards at workplace*  
*Workers' toilets are dirty and no proper maintenance*  
*Environment at the work areas are not comfortable*

Respondents voiced their dissatisfaction about the way their welfare were neglected by the company. Amenities such as canteen and rest areas were not available, the room to perform prayers is uncomfortable, annual leave has been reduced from 15 days to 12 days, and no recreational activities to close rank between management and workers. The situation is worsen by the wanting leadership behaviour and the lack of respect of the leaders towards the workers as perceived by the workers.

*Boss to fully involves subordinates in decisions related to their work*  
*Develop close personal relationships with subordinates*  
*Mutual respect between supervisors and workers*  
*Treat us as human beings*

Another motivational factor that is not up to scratch was highlighted by the workers that is the unavailability of proper career progression opportunities for them and their preference for performance-linked reward. A number of respondents highlighted such feelings:

*Promotion must be based on skill and work experience*  
*To develop KPI*  
*Workers are haunted by dismissal*

Close to the heart of the workers is the question of job security and career progression. The open responses received clearly depict their concerns. Opportunities should be given to the workers to learn new skills or advance in the organization. By and large, the voices of the workers from the group interviews session illustrate the authenticity of the two-factor theory developed by Frederick Herzberg that relates to the fundamental principle of how the work environment influence the behaviours of the workers at work (Mausner and Snyderman, 1993). Firstly, motivation factors that contribute to job satisfaction include among others recognition, promotion and growth or advancement opportunities. Secondly, hygiene factors that prevent job dissatisfaction such as leadership, teamwork and communication, work culture, physical work environment, salary and remuneration. These factors relate to the environment in which the work is performed.

#### ***Quantitative Data: Survey Questionnaire***

It is interesting to note that the hygiene factor formed major concern of the contract workers. With the help of survey questionnaires, an organizational culture scan is done. The aim is to assess the cultural values of the workers. The results highlight cultural incompatibility between the perceived management style and the preferred work related values of the workers. Work culture and values of the workers were gauged along the organizational cultural dimensions namely individualism-collectivism, power distance, and masculinity-femininity.

#### ***Individualism versus Collectivism***

The Individualism-collectivism aspect concerns the extent to which the society emphasizes and encourages the role of the individual as opposed to the role of the group. In an individualist society, people largely have a self-concept of being independent rather than a dependent member of a group, with personal and self-interest being more important than group interest. There is also more emphasis on individual achievements, individual rights, individual needs and self-actualization. In collectivist societies, on the other hand, people belong to groups and there is a strong emphasis on social ties. This form of orientation attaches significance to group membership and bonds between individuals. There are numerous implications of individualism-collectivism in management. It influences matters such as rewards, responsibilities, achievement and decision-making. Management practices in individualistic societies, for example, typically promote personal achievements and individual responsibilities.

#### ***Power distance***

Power distance deals with inequalities between people and is concerned with dependence relationships in a society. In small power distance cultures, inequality in society is minimized,

in contrast to large power distance cultures where inequality is accepted by members of the society. In organizations, inequality of power is manifested and is significant in various aspects of management. It determines how close or how distant subordinates feel from their managers, leadership styles, decision-making, respect for elders, the meaning of status differences and participation. It has been claimed that in the low power distance countries, subordinates are relatively unafraid to voice disagreements with their managers and prefer greater involvement in their jobs. In large power distance countries, subordinates tend to behave submissively in the presence of a manager, reluctant to express disagreement with their managers and expect the managers to be accountable for decision-making and responsibility.

**Masculinity versus femininity**

Essentially, societies with masculine characteristics tend to admire values such as competitiveness, assertiveness and ambitiousness. In these societies, one might expect the individuals to strive aggressively for performance and achievement. In contrast to this, feminine societies favor caring-for-others, relationships with people, nurturing, quality of life, non-material and less tangible outcomes. They are, thus, more motivated by social needs, a supportive environment and cooperation.

The results show that the workers are largely oriented towards high femininity and collectivism culture. They stressed the importance of cohesion within the organizational members and they give higher priority to meeting the company’s goals over their individual objectives. They strived to have good working relationships, avoiding any forms of criticisms, making group decisions, equality, and often polite, cultured and well-mannered when interacting with others. On the contrary, the superior’s behavioral characteristics or styles of management were more towards individualistic and masculine. The difference between employees’ preferred work values and perceived management styles is further reflected in the power distance attribute. There is a certain degree of difference in the power distance orientation between the immediate superior and the preferred values of the subordinates. High power distance culture prevailed among the immediate superior that implies a highly autocratic behavioral characteristics of management practices. On the contrary, the subordinates have preference for moderately low power distance culture where they prefer a participative kind of management practices and relationship oriented supervision.

Table 1. Power Distance

Work Culture and Values	Reliability Statistics (Cronbach’s Alpha)	Workers	
		Management Style (Mean)	Work Related Values (Mean)
Individualism / Collectivism <sup>1</sup>	0.882	2.96	4.04
Power Distance <sup>2</sup>	0.929	2.72	3.46
Masculinity / Femininity <sup>3</sup>	0.923	2.89	4.48

Note <sup>1</sup>: Scale 1-5, ranging from (1) strongly disagree to (5) strongly agree  
 The higher the score, the higher the degree of *collectivism*.

Note<sup>2</sup>: Scale 1-5, ranging from (1) strongly disagree to (5) strongly agree  
 The higher the score, the lower the *power distance*.

Note<sup>3</sup>: Scale 1-5, ranging from (1) strongly disagree to (5) strongly agree  
 The higher the score, the higher the degree of *femininity*.

**Discussion**

Whatever your personal reasons for working, the bottom line, however, is that almost everyone works for money. Whatever you call it: compensation, salary, bonuses, benefits or

remuneration, money pays the bills. Money provides housing, gives children clothing and food, sends teens to college, and allows leisure activities, and eventually, retirement. To underplay the importance of money and benefits as motivation for people who work is a mistake. Fair compensation is the cornerstone of successful company that recruits and retains committed workers. If you provide a living wage for your employees, you can then work on additional motivation issues. Without the fair, living wage, however, you risk losing your best people to a better-paying employer. On similar tone, the most important motivational aspect of work for people would be money, personal time and attention from the immediate superior was cited by workers as most rewarding and motivational for them at work. Based on the study the following could be considered for organizational improvement. The synthesis of the study revealed that the workers are guided by four basic drives. They are the drives to acquire, bond, comprehend, and defend. These drives underlie the workers' mindset and behavior (Cameron and Quinn, 2005; Gibson, Ivancevich, Donnelly, and Konopaske, 1991; Nohria et al., 2008; Schein, 2010). The study suggests that each drive is best met by a distinct organizational lever below.

### ***Reward system***

There is a critical need to relook at the contractual agreement pertaining to reward system and other related monetary matters. This is the root-cause of the dissatisfaction which is translated into negative behavior patterns among the workers. The main reason for working is to earn money. The money from compensation, salary, bonuses, benefits or remuneration pays the bills, provides housing, gives children clothing and food, sends teens to college, and allows leisure activities. To underrate the importance of money and benefits as motivation for people who work is an oversight. Fair benefits and pay provide a living wage for these employees. Once this is done, then mitigation initiatives on misalignment and other motivational issues as revealed in this study can be implemented. Fair living wage is the most important motivational recipe for mindset and behavioral change among the workforce in sustaining organizational improvement and performance.

### ***Leadership qualities***

People skill and interpersonal skill among the staff in management level are crucial. In this respect, some rooms for improvement can be made basing on the input from the study that has been conducted. Leaders and managers have to be more involved in the operations in the plant and their presence must be felt by the workers. Moreover, they have to engage with their subordinates often. The engagements should go beyond the work related matters. For instance, the leaders and managers should be involved in social and get-to-gather activities. The aim is to strengthen friendships and this will facilitate team alignment. Building trust is an essential aspect of leadership. With trust comes respect. Leaders and managers must act on their principles, give clear directives, mean what they say, and uphold high ethical standards to all decisions. Workers notice this behavior. In building trust, the leaders and managers must engage with their workers in fair, honest and predictable behavior. Give workers a respectful hearing. Promises should be fulfilled and credits should be given when due. Keeping the lines of communication with the subordinates open also builds trust.

### ***Culture of Partnership***

It is proposed that current organizational practices be further enhanced to improve working environment, sense of belonging and loyalty, the sense of partnership, and the level of satisfaction of the workers towards the job that they are performing. Enhancement in the following areas possibly will be beneficial:

- Continuous and clear feedback regarding employees work performance and progress

- Information about organization's status, policies, goals, progress and performance is conveyed to all employees clearly
- Leisure and recreational facilities and activities
- Rewards and recognition schemes
- Foster reliance / friendship among co-workers
- Value collaboration and teamwork
- Encourage sharing of best practices

### ***Career Progression***

Close to the heart of the workers is the question of career progression. The open responses received clearly depict their concerns regarding their career progression. Opportunities should be given for employees to learn new skills and advance in the organization.

### **Conclusion**

Through group interview session, various problems relating to work and physical working conditions, work-related values and attitudes of the contract workforce were identified. It draws attention that the hygiene factor formed major concern of the contract workers. This is further reinforced by the organizational culture scan survey questionnaires. The aim is to assess the cultural values of the workers. The results highlight cultural incompatibility between the perceived management style and the preferred work related values of the workers. The study highlighted a range of factors that influence workforce motivation in the organization of a lube blending plant in Malaysia. The need for job satisfaction, career advancement, and recognition for achievement were among the voices of the workers. The study has shown that reward system, leadership qualities, culture of partnership, and career progression would be the appropriate organizational levers to mitigate mindset and behavioral change among the workers of the lube blending plant.

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# Association between Psychosocial Factors at Work and Prevalence of Upper Musculoskeletal Systems Disorders: A Pilot Study

**Paras Behrani\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*  
Email: behraniparas@yahoo.com

**Ahmed Shahrul Nizam**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*\*Corresponding Author*

## **Abstract**

**Introduction:** Upper Musculoskeletal Disorders are one of the major cost occurring disorders in workplace. Previous longitudinal and cross sectional studies indicate the association of physical factors are associated with the upper musculoskeletal disorders (UMSDs). The goal of current study was to conduct a pilot study to examine association of psychosocial factors with upper musculoskeletal disorders (UMSDs).

**Objective:** Conduct a pilot test. This is the initial step will help in identifying the critical issues for the main study. The focus here is limited to see the association of psychosocial factors and work related upper musculoskeletal disorders (WRUMSDs).

**Methods:** 34 operational workers completed the self-administrated questionnaire. The questionnaire is a combination of Nordic musculoskeletal questionnaire and QPS: General Nordic questionnaire for psychological and social factors at work.

**Conclusion:** It is safe to conclude that there is significance relationship has been found between psychosocial factors and WRUMSDS at this pilot level and broader samples will be taken in future for the main study.

**Keywords:** Upper musculoskeletal disorders, psychosocial factors, work-related

## **Introduction**

Preventing WRUMSDs can notably disturb or create discomfort in activities of the important body regions performance because upper extremities such as shoulder, neck, hand and arm are vital parts of the body (Alipour, 2008). WHO characterized WRUMSDs as complex or multi-factored to assess that various risk factors (psychosocial, individual, physical characteristics, socio-cultural and work organization) contributed to these ailments (Organization, 1985). Additionally, WRUMSDs are major cause of disability in the working population. Health consequences due to work-related stress have a great concern in ensuring health and safety because the resulting health consequences from work-related stress effecting employees at large (Bergsten, Mathiassen, and Vingård, 2015). Musculoskeletal pain has strong association with psychosocial factors. Factors like decision making, decision latitude, work demands, perceived stress and psychological distress. Monotonous work, high perceived workload and unsatisfactory job contributes to WRUMSDs (da Costa and Vieira, 2010).

Upper musculoskeletal disorders have a severe burden at workplace. Discomfort in the upper body parts like neck, shoulder, arm, hands/wrists been comprehensively researches and multiple

reasons and causes been sought in the occurrence of this discomfort(Thiese et al., 2015). Assessing the factors effecting the upper musculoskeletal disorders been prioritized and different ways been used to come up with the practical preventive measures. Burden of UMSDs on industrialized world is difficult to comprehend (Armstrong et al., 1993).

Most comprehensively used tool to assess the musculoskeletal discomfort the Nordic musculoskeletal questionnaire (Kuorinka et al., 1987) been used for this study. It's been widely used as one of the effective self-administered questionnaire. The standardized Nordic musculoskeletal questionnaire has often been used in industry and in general public and effectively collects information about the pain intensity as well as other factors affecting the individuals (Kuorinka et al., 1987). Using for particularly for this study again needed a validity and reliability test, keeping in view that this is going to be for different group of study and different cultural adaptation for this questionnaire has to be retest in terms of language and validity and reliability.

### **Materials and methods**

Samples for this study was obtained from the operational workers I.e. Technical workers in an oil and gas processing plant. Main focus was those who were working in confined work space and those who were working on monotonous pace for longer period.

The questionnaire is a combination of Nordic musculoskeletal questionnaire (Kuorinka et al., 1987) and QPS: general Nordic questionnaire for psychological and social factors at work (Elo et al., 2000). Subjects were asked to fill up the questionnaire. Each respondent chooses the options from (1- 5) using Likert scale. Questionnaire was highlighting three major areas for assessing the UMSDs complaints.

First part was dictating the pain intensity within three different time paces; 1Pain experienced within past week, 2: Pain experienced within the 12 months and third was checking the intensity of discomfort in these areas which was making that person to stop/in able to do particular tasks.

The complete Nordic musculoskeletal questionnaire was used for assessing the pain intensity in subjects. For the musculoskeletal symptoms the complete NMQ used targeting the musculoskeletal symptoms in the 6 different parts of upper body (neck, shoulder, arm, wrists/hands, elbows). NMQ can be used for different occupational groups (Kuorinka et al., 1987) and helps in assessment of UMSD complaints within the targeted subjects of this study.

General Nordic questionnaire for psychological and social factors at work was modified and used for the assessment of psychosocial factors. QPS Nordic is standardized tools for assessing the psychosocial factors at work (Wännström, Peterson, Åsberg, Nygren, and Gustavsson, 2009). It consists of multiple choice questions to assess psychological and social factors at work like control and demand, monotonous work, leadership, organizational commitment, social interactions at work. Part 3 consists of questions about ergonomic condition at work place. Bearing in mind the essence of the study, less focus is given to the ergonomic and physical factors.

### **Results**

Table 1 shows the baseline demographics of the study participants. A total of 34 respondents took part in the survey.

Table 1. Baseline demographics of workers

Demographic Variable	M+/-sd or %(n)
Age, years	42.5
Gender	Men 88.2(30) Women 11.8(4)
Education	Diploma/polytechnic: 41.2(14)
Shiftwork	Yes:47.1(16) No:52.9(18)
Working days	5 days 58.8(20)

**Upper Musculoskeletal Disorders complaints**

Table 2 shows the UMSD conditions of the study participants. Total 34 subjects took part in the survey. Mainly focusing on the previous 7 days experience of any pain. Keeping in mind about the previous pain intensities in targeted areas.

Table 2: Pain experienced in 7 Days

	Yes (%)	No (%)
Neck	11(32.4)	23(67.6)
Shoulder	4(17.6)	28(82.4)
Elbow	1(2.9)	33(97.1)
Hand/Wrists	5(14.7)	29(85.3)
Upper back	14(41.2)	20(58.8)

The questions were designed with yes or no options to respond while targeting these five areas of upper musculoskeletal system (neck, shoulder, elbow, hand/wrists and upper back). Based on the results, most of the participants reported pain in upper back (41.2%) and in the neck area (32.4%) during the past 7 days before participating in the study. The results also suggested that pain in elbow were least experienced (2.9%) by the respondents. In this table results are bit different and it shows the more number of participants experiencing/experienced pain in the UMS region. Upper back is been experienced by almost 70% of the participants within the last 12 months, neck (61.8) and shoulder (52.9%) pain also experienced by more than 50% of participants (n=34) whereas elbow (14.7%) and hand/wrists (29.4%) pain experienced by respondents more in 12 months than in recent weeks if compared.

Table 3: Pain experienced in 12 months

	Yes (%)	No (%)
Neck	21(61.8)	13(38.2)
Shoulder	18(52.9)	16(47.1)
Elbow	5(14.7)	29(85.3)
Hand/Wrists	10(29.4)	24(70.6)
Upper back	24(70.6)	10(29.4)

Results about the last section which focused at the difficulty/discomfort or inability to perform tasks or an activities within the past 12 months due to pain in the targeted areas, are quite different although the number of responses is less within this category, but the point to consider here is the discomfort and inability felt by the respondents. Due to the pain in Neck (11.8%) and Upper back (17.6%) the participants are facing difficulties/discomfort in performing certain tasks and activities, which further may leads towards disability in doing work. Pain in elbow (2.9%) and hand/wrists (8.8%) is experienced by few respondents but still is one of the reasons of difficulty in performing certain activities.

From the results obtained it is quite clear that pain in upper musculoskeletal parts is increasing with the time. Participants determined areas of discomforts via standardized Nordic questionnaire. Table 3 is indicating that employees experienced musculoskeletal pain widely in neck, shoulder and upper back within the past 12 months.

As shown in Table 4, within 12 months of musculoskeletal pain few participants reported difficulty in work mainly neck (11.8%), upper back (17.6%) and hands (8.8%). Although the number is small but it can lead further discomfort and inability experienced by employees and which further may increase the number of affected employees.

Table 4: Difficulty /inability in carrying out normal activities during 12 months

	Yes (%)	No (%)
Neck	4(11.8)	30(88.2)
Shoulder	0(0)	34(100)
Elbow	1(2.9)	33(97.1)
Hand/Wrist	3(8.8)	31(91.2)
Upper back	6(17.6)	28(82.4)

Table 5 demonstrating the psychosocial factors considered for this study. The mean score was higher in those with UMSD complaints. These results are positive avenue for continuing the research on targeted area and objectives.

Table 5: Psychosocial Factors predicting outcomes of UMSDs.

Factors	Mean	Std. Deviation
Job demands	2.46	0.429
Monotonous work	2.55	0.392
Control at work	2.23	0.535
Leadership	2.46	0.494
Commitment towards organization	3.97	0.495

Table 6 shows the scales used for measuring psychosocial and work factors, their internal consistency tested via Cronbach's alpha, which ranges from .725 and .945.

Table 6: Questionnaire scales and their internal consistency (N=34)

	Total Items	Reliability
Job Satisfaction	7	0.742
Monotonous Work	11	0.729
Control at Work	8	0.85
Leadership	7	0.756
Organizational Commitment	3	0.907
Ergonomics	3	0.773
Work Conditions	5	0.894
Physical Conditions	3	0.945

Above table shows the reliability and internal consistency of questionnaire used. Generally, the scales seem acceptable if take Cronbach alpha >70 as limit. Almost all of the psychosocial scales used (job demands, monotonous work, control at work, leadership, organizational commitment)

attain the level of reliability limit. However many studies shown positive internal consistency for the QPS Nordic in different work settings and cultural adaptation(Back, Tam, Lee, and Haraldsson, 2009; Bringslimark, Hartig, and Patil, 2007; Wännström et al., 2009). Never the less for the actual/final study few of the scales need to be improve or substituted. Reliability results shows higher Cronbach's alpha, which is satisfactory to conclude the reliability of the results.

### **Discussion**

The purpose of this study was to identify the UMSD complaints within the gas processing operational workers. Several studies identified the association of psychosocial factors in the occurrence of MSDs (Bergsten et al., 2015; Lourenço, Carnide, Benavides, and Lucas, 2015; Macfarlane et al., 2009).

Work related psychosocial factors seem to have association with MSDs factors like monotonous work, job satisfaction, social support and, high or low job demands leads towards MSDs risk.

The purpose of the study was to conduct a pilot test before going for the final study. The modified instrument used here is widely used in different occupational settings as well as in preliminary research of biomedical too (Elo et al., 2000; Kuorinka et al., 1987; Wännström et al., 2009).

Conducting a pilot study is considerable for a better research protocol, which enables the researchers to further clarify any challenges faced and sought clarity for the questions asked (Cargan, 2007; Litwin, 1995).pilot studies are crucial for understanding cross cultural application of already validated instruments(Van Teijlingen, Rennie, Hundley, and Graham, 2001).

Developers of Nordic questionnaire indicated that the questionnaire's validity was good even with small sample size. Psychosocial factors evaluated comprised job demands, monotonous work, control at work, leadership and organizational commitment. Results obtained on the frequency of exposure to the above mentioned psychosocial factors on a 5 point Likert scale ranging from 1 to 5, which was from 1 never and to 5 frequently.

The evaluation was done by using statistical package for social sciences SPSS (IBM.com).

Results from the present study open a positive avenue for further research on the focused industry and subjects.

In a previous study the validity and reliability test is meeting the required standards (Finne, Christensen, and Knardahl, 2014). Research identified that there are different perceptions and beliefs, about the causes and consequences of psychosocial factors which subsequently predict psychological well-being and improved performance. Personality factors and individual psychological differences have not been widely research for adequate results (FEUERSTEIN, 1996)

Despite a significant body of research documenting the association between psychosocial risk factors and WRUMSDs among operational workers of gas processing, there is limited research with regards to the operational workers' population in Malaysia. Hence, this study aims to explore the association of psychosocial risk factors in developing WRUMSDs and to investigate the relationship between psychosocial risk factors in the workplace and sustaining WRUMSDs prevention among workers in general.

Our results agree on the presence of UMSD complaints in the targeted group. Although the sample size was small but the presence of symptoms has identified.

Although studies are heterogeneous when it comes to the prevalence of UMSDs(Laberge and Ledoux, 2010; Widanarko, Legg, Devereux, and Stevenson, 2014)

The study is focused on the association of psychosocial factors association with work related upper musculoskeletal disorders(UMSDs) and data will be collected to elucidate some of the

targeted psychosocial factors. An effort will be made to further identify the core effects of psychosocial factors in the main study.

The strength of the study is the application in untouched area in regards of UMSD (operational workers in gas processing). However, the study was not conducted on large sample so some confounding is possible.

Several limitations were present in this study, since this was a pilot study so the number of participants were limited, and causal relationship was not identified because of the short lap of time. Which can be further examined in final study.

### **Conclusion**

This work is limited to pilot study, and therefore can be extended to get more reliable and precise results, and to investigate the predictive role of different psychosocial factors in the development of WUMSDs among Operational workers of gas processing industry of Malaysia. Overall the findings of this pilot study enhanced understanding of psychosocial work factors on the development of musculoskeletal discomforts within the working population.

For getting a complete picture, broader samples will be needed for the main study. Most important about this pilot study is it has given us a track and information towards improving the method and designs for the main study. It can be concluded that the results obtained from this study support the idea about the association of psychosocial factors with upper musculoskeletal disorders

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# Intention to Purchase Safer Car: an Application of Theory of Planned Behavior

**Khairil Anwar Abu Kassim**

*Faculty of Business and Information Science, UCSI University, Malaysia  
International University Malaya Wales (IUMW), Malaysia*

**Lawrence Arokiasamy**

*International University Malaya Wales (IUMW), Malaysia*

**Mohd Hafzi Md Isa**

*Malaysian Institute of Road Safety Research*

**Chieng Heng Ping\***

*Faculty of Business and Information Science, UCSI University, Malaysia*

*\*Corresponding author*

## **Abstract**

**Purpose:** This study is employed to explore the behavior of consumers with regards to safer car purchasing. The study has three objective: firstly, to evaluate the effect of attitudes towards consumers' behavioral intentions to purchase safer car; secondly, to evaluate the effect of government's and car manufacturers' policy on car safety towards consumers' behavioral intentions to purchase safer cars; and thirdly to evaluate the effect of social pressures towards consumers' behavioral intentions to purchase safer cars.

**Design/methodology/approach:** This study employed Theory of Planned Behaviour (TPB) as main concept behind the research theoretical framework after extensive reviews of various related theories from previous studies. The research framework proposes three independent variables: attitude, subjective norms and perceived behavioral control and dependent variable: intention to purchase safer car. This study utilized survey questionnaires of 500 respondents as the instrument of research to gather primary data from the participants. Finally, the multiple linear regression used to provide the generation of conclusion based on the characteristics of the data.

**Findings:** After all the assumptions have been fulfilled, the multiple linear regression analysis was performed. The regression analysis yielded a multiple correlation coefficient (R) of 0.749 which means that there was strong relationship between the mean score of PI and the three of predictor variables (ATT, SN and PBC).

**Practical Implications:** Utilizing TPB as the theoretical and conceptual frameworks for this study on safer car purchasing has been proposed. The developed instrument has also been analyzed and appeared reliable with good fit model. Furthermore, the overall regression model was significant. It is hoped that the findings highlighted in the paper will be useful for policy makers, car manufactures and other stake holders to assist in setting priorities with regards to the purchase intention of safer car in Malaysia.

**Originality/value:** To date, with the best knowledge from the study, there is no research has been conducted in the area of car safety with applying Theory of Planned Behavior. Most of the study conducted focus on willingness-to-pay for safety equipment which objectively

looking into product, not the purchasing behavior. This research going to be the first study conducted in in this manner.

**Research limitations:** The study has challenges on defining the line between safe and safer car. Because it was a first study that explored TPB in safe car manner, the justification has to be made based on local understandings and establish concept. The ground basis of understandings on safety of the car need to be introduced prior to answering the questionnaire.

**Keywords:** ASEAN NCAP, Car Safety, Purchase Intention, Road Traffic Accident, Theory of Planned Behavior.

**Paper type:** Research Paper

### **Introduction**

Globally, Malaysia is recorded as 17<sup>th</sup> most dangerous road in 2014. It's recorded 30 fatalities from 100,000 population (The Star, 2014). The world recorded 1.25 million fatalities from road traffic crashes (WHO, 2015). In 2009, road traffic fatality recorded during that time was only 1 million people (WHO, 2009). The World Health Organization (WHO) has suggested that the workable counter measure to improve the current condition is for the vehicle sold in the country to meet minimum safety standard (WHO, 2015). In Malaysia, Motorcyclist recorded for 63% of total deaths in 2014. Meanwhile, the car occupant fatalities is deliberate as the second in the statistic after motorcyclist which recorded at 19%. Pedestrian followed by and 8% of total road fatalities.

Since 2009, the level of car safety has been elevated through regulation-based and consumer-based approach (Khairil Anwar et al., 2015). The car occupant survival in 2014 shows a result of 141 lives saves which indicated in the statistics. 1399 car occupant fatalities has been recorded in 2013 compare to only 1258 in 2014. Although it is not definite, the Malaysia Government interventions has showed some results.

Car have more flexibility to improve its safety and perseverance compare to motorcycle. Volvo has announced its vision for 2020 where no one will be killed or critically injured in a new Volvo car (VOLVO, 2014). That shows how technology has advanced and ready for future, but the problem lies on the readiness of consumer acceptance. Therefore, the study is important to understand the customer behavior in regards to their purchase intention of safe car. Nevertheless, it is the role of policy maker and product planner to offer consumer not only safe car, but affordable.

The study believes that by understanding automotive consumerism based on consumer, car manufacturer and policy makers will create new knowledge that leads to better sales for safer cars in Malaysia. Thus, this paper aims to propose a conceptual framework on the application of Theory of Planned Behavior (TPB) to predict consumer intention to purchase safer car, conduct multiple regression analysis, and present the findings.

### **Theoretical and Conceptual Framework**

There are numerous theories addressing human behavior. One of the most widely researched models predicting behavioral intentions is Theory of Planned Behavior (TPB). It was developed based on the extension of the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975). The TRA is a social-psychological model which claims that a person's actual behavior in performing certain action is directly guided, as a central factor, by his or her own behavioral intention, which in turns is jointly determined by subjective norms and attitude towards the behavior (Fishbein and Ajzen, 1975).

TPB is an important social cognitive model that aims to explain variance in consumer behavior

(Ajzen, 1991) and has been proven to be successful in doing so in many studies (Liao et al., 2007; Kaiser, 2006). While the TPB can be considered as the most influential theory in health psychology (Zemore and Ajzen, 2014), it has also been validated in the context of pro-environmental behavior (Whitmarsh and O’Neill, 2010). TPB has also been used to study safety related behaviors e.g. helmet use among motorcyclists (Ali et al., 2011), and occupational health-related behavior (Colemont and Van den Broucke, 2008).

In addition, previous studies have shown that TPB provides an excellent framework for identifying predictors of intention to purchase automobile related technologies e.g. autonomous (Kelkel, 2015) and environmentally friendly vehicles autonomous (Afroz et al., 2015; Hong et al., 2013; Emsenhuber, 2012; Moons and De Pelsmacker, 2012). In the context of safer car, TPB can be considered as an appropriate behavioral model to be utilized. Thus, this study proposes the conceptual framework as illustrated in Figure 1.

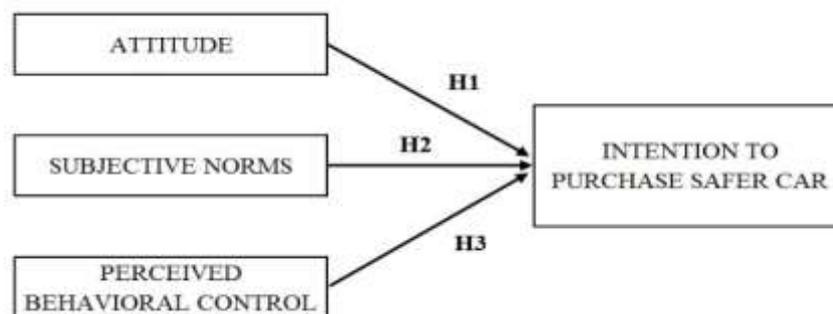


Figure1: Conceptual Framework

***Attitude towards Purchasing Safer Car***

The TPB proposes that behavior is affected by intention, which in turn, is affected by attitude towards the behavior. Attitude refers to the degree to which an individual has a favorable or unfavorable evaluation of the given behavior. It is hypothesized that individual will develop a positive attitude toward the behavior if he or she believes that the specific behavior will produce a good outcome (Ajzen and Fishbein, 1980).

Although there is no established study on behavioral intention to purchase safer car with respect to attitudinal factor, there are other related studies on automobiles applying TPB that can be referred. Many researchers reported consumers having very positive attitudes towards purchasing other automobile related features such as autonomous (Afroz et al., 2015) and electric vehicles (Kelkel, 2015; Emsenhuber, 2012; Moons and De Pelsmacker, 2012). Therefore, the hypothesis for this construct is proposed as follows:

H1: There is a positive effect between attitude and intention to purchase safer car.

***Subjective Norms***

Subjective norms refer to perceived social pressure from other persons on whether or not to perform the specific behavior (Ajzen, 1991). Empirical studies have shown that social influence from family and friends has an effect on vehicle purchasing intentions (Kelkel, 2015; Moons and De Pelsmacker, 2012).

Rogers (1995) also highlighted the importance of mass media and external communication in influencing intention towards a product, which can be considered as part of social norms. Moons and De Pelsmacker (2012) have also included this element into their study which can be considered for safer car as well. Thus, the hypothesis for this construct is proposed as

follows:

H2: There is a positive effect between subjective norm and intention to purchase safer car.

### ***Perceived Behavioral Control***

Perceived behavioral control refers to the factors that may impede the performance of the behavior (Ajzen, 1991) which can be categorized into two components. The first part is self-efficacy which can be defined as an individual's self confidence in his or her ability to perform a behavior.

The second part, on the other hand, termed as facilitating condition, refers to availability of resources needed to engage in a behavior (Tan and Teo, 2000). In other words, the perception about how difficult it is to perform the given behavior is subject to affordability and availability of that particular product (Ajzen, 1991).

In the case of electric vehicles, another form of PBC i.e. government incentives in the forms of tax and sale reductions, and fuel policy were also considered (Hong et al., 2013). Therefore, for this study, the element of government incentives and also manufacturer's safety priority were included as well. Taking that into consideration, the hypothesis for this construct is proposed as follows:

H3: There is a positive effect between perceived behavioral control and intention to purchase safer car.

### **The Instrument and Multiple Regression Analysis**

In order to confirm the results authentication, the research instrument has to be valid and reliable (Ary et al., 2002). Reliability involves repeated administration of the research instrument in order to ensure that same results are generated when this instrument is used multiple times. Validity, on the other hand, is the ability of the instrument to represent the characteristics of the intended measurements accurately.

### ***Development of the Instrument***

This study utilized survey questionnaires as the instrument of research to gather primary data from the participants. Surveys are the most popular data assortment instrument as data can be composed easily from large population in cost operative manner. This tool also allows the researcher to collect data from large sample size (Leedy and Ormrod, 2012).

The questionnaire comprised of two main parts. The first part contains all the measurement items of the four constructs arranged in random order whereas the second part covers the demographic profiles. It was constructed in both English and Malay languages in order to ensure that respondents with different first languages could understand all the items.

All the construct domain and measurement items were adapted from a comprehensive review of past studies (Kelkel, 2015; Hong et al., 2013; Emsenhuber, 2012; Moons and De Pelsmacker, 2012). Due to the different context of the study, most of the items were not taken directly in the existing literatures but were modified. New items were developed as well following the guideline by Ajzen (2013) in constructing TPB questionnaire, based on exploratory qualitative study. Table 1 summarizes the list of adapted and new items for each respective construct.

Table 1: Four main constructs and adapted items used for questionnaire

Construct	Literature Source
Attitude (ATT) [5 items]	ATT1 (Kelkel, 2015) ATT2 (Moons and De Pelsmacker, 2012) ATT3 (Kelkel, 2015; Moons and De Pelsmacker, 2012) ATT4 (Kelkel, 2015; Moons and De Pelsmacker, 2012) ATT5 (Exploratory study)
Subjective Norms (SN) [6 items]	SN1 (Kelkel, 2015; Moons and De Pelsmacker, 2012) SN2 (Kelkel, 2015; Moons and De Pelsmacker, 2012) SN3 (Exploratory study) SN4 (Moons and De Pelsmacker, 2012) SN5 (Exploratory study) SN6 (Exploratory study)
Perceived Behavioral Control (PBC) [5 items]	PBC1 (Moons and De Pelsmacker, 2012) PBC2 (Ajzen, 2013) PBC3 (Hong et al., 2013) PBC4 (Hong et al. 2013) PBC5 (Exploratory study)
Intention to Purchase Safer Car (PI) [3 items]	PI1 (Emsenhuber, 2012) PI2 (Emsenhuber, 2012) PI3 (Emsenhuber, 2012)

### ***Multiple Linear Regression***

Prior to conducting multiple regression analysis, the collected data must be checked and fulfill several conditions. Firstly, it is necessary to check the assumption of linearity in which the relationship between dependent and explanatory variables in the population where the samples were drawn must be linear. Second is the assumption of normality. It specifies that for any specific value of the independent variable, it has corresponding value in the independent variable that must be normally distributed about the regression line. As multiple regression involves more than one predictor, this means that the residuals from regression must be normally distributed.

Third is the assumption of non-multicollinearity which states that there should be no correlations among the independent or explanatory variables. Multicollinearity means several of the predictors are highly correlated with one another. If a pair of predictor variables is strongly correlated, only one of the variables is useful in explaining the variation in the dependent variable. Fourth is the assumption of equal variance or sometimes called homoscedasticity which requires equal variance in the value of dependent variable for any corresponding predictors. The mean may be different, but the variance must be the same.

Partial regression plots were used to check linearity between each predictor (Attitude [ATT], Social Norms [SN] and Perceived Behavioral Control [PBC]) and the dependent variable (Purchased Intention [PI]). Figure 1, 2 and 3 illustrate the linear relationship between the independent and dependent variables.

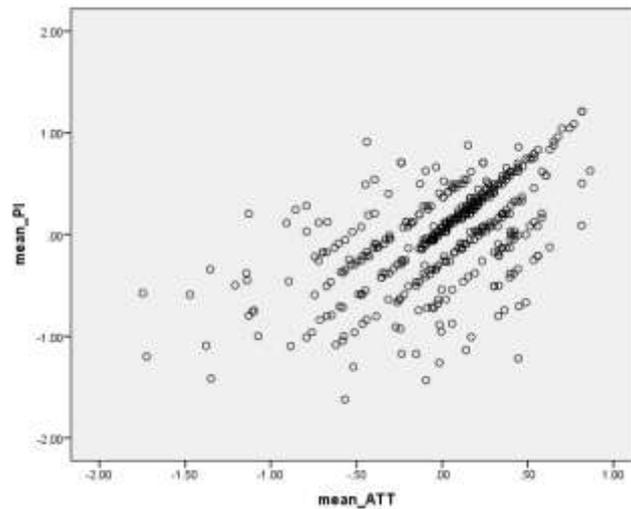


Figure 2. Partial regression plot between men score of purchased intention and mean of attitude

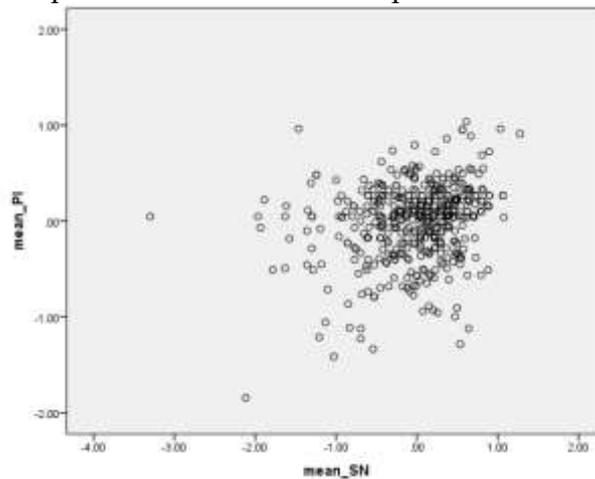


Figure 3. Partial regression plot between men score of purchased intention and mean of attitude

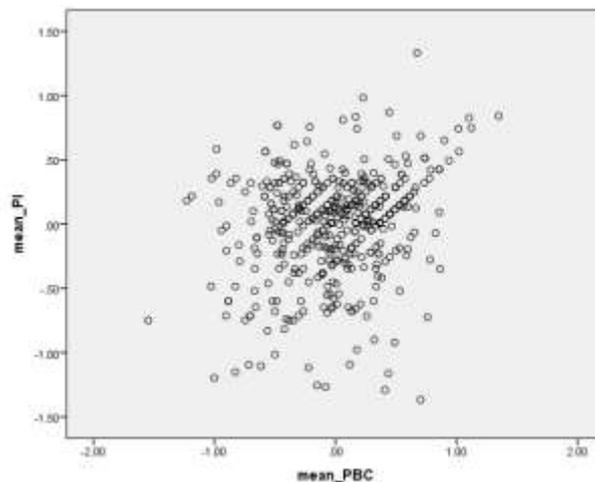


Figure 4. Partial regression plot between men score of purchased intention and mean of attitude

As for normality assumption, the distribution of mean score on PI was checked. Based on the central limit theorem, as sample size (n) gets larger, distribution is closed to the normal distribution. Based on Figure 4, the histogram shows that there is a bell-shaped indicating that

the error terms are normally distributed. It can be confirmed by looking at the skewness of the distribution in Table 2. The skewness value of -1.233 means that the distribution of the mean score of PI is normally distributed.

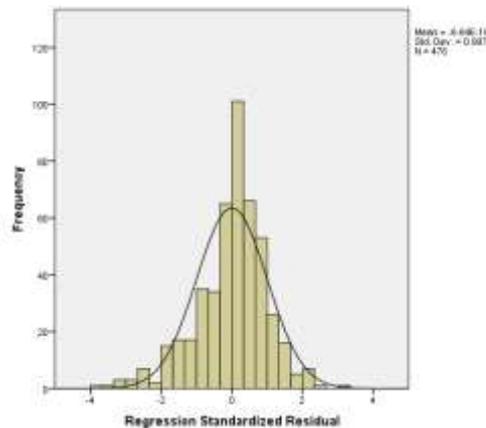


Figure 5. Histogram on mean score of purchased intention

Table 2: Normality assumption based on skewness

	N	Skewness	
	Statistic	Statistic	Std. Error
Mean score PI	500	-1.233	0.109

### Findings

Based on Figure 5 below, it shows that all the points are randomly scattered and there is no pattern at all. This indicates that the errors have a constant variance. Therefore, homoscedasticity assumption is satisfied.

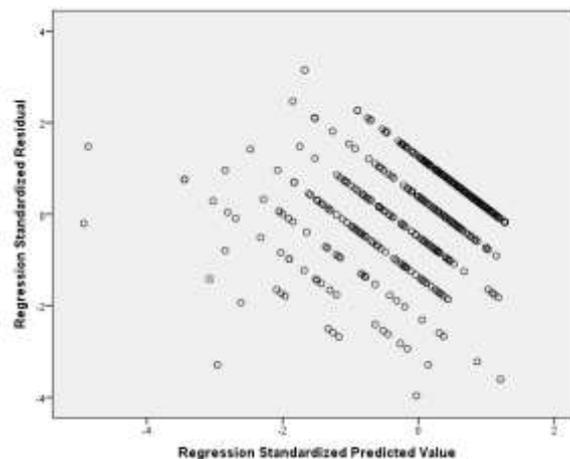


Figure 6. Scatter plot on mean score of purchased intention

Table 3 shows the value of tolerance and variation inflation factor (VIF) value for purchases intention to buy safe car towards attitude, social norm and perceived behavioral control. The result shows that there is no multicollinearity exists in the model since all the tolerance value is greater than 0.1 and VIF value is less than 10 respectively.

After all the assumptions have been fulfilled, the multiple linear regression analysis was performed. The regression analysis yielded a multiple correlation coefficient (R) of 0.749 which means that there was strong relationship between the mean score of PI and the three of

predictor variables (ATT, SN and PBC). Based on Table 5, the value of  $R^2 = 0.561$  indicates that 56.1% of the variation in PI is explained by ATT, SN and PBC. The balance 43.9% is explained by other factor. The overall regression model was significant since the significance value (0.000) in the Table 4 is less than 0.05 with F-Ratio of 201.100. The standard error of the estimate is 0.3800 which is low indicates that the error is quite small.

Table 3: Collinearity statistics

Variable	VIF	Tolerance
ATT	0.732	1.367
SN	0.760	1.316
PBC	0.680	1.470

Table 4: ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.102	3	29.034	201.100	0.000
	Residual	68.146	472	0.144		
	Total	155.248	475			

Table 5 shows the parameter estimates of the regression which represent the regression coefficients or slope of each predictor variable. The t statistics indicate the significance of the constant and each of the parameter estimates. The regression model has a constant of 0.014 and is not significant at the 0.05 level ( $p=0.939$ ). Parameter estimates for ATT, SN and PBC are 0.651, 0.519 and 0.2 respectively. The significance values in the Table 5 for the three variables are less than 0.05 indicates that they are important elements that contributed on PI.

Table 5: Multiple Linear Regression Analysis

Model	Unstandardized Coefficients	Standardized Coefficient	t	p-value	R	R Square	Std. error of estimate
	Beta	Beta					
(Constant)	0.014		0.077	0.939	0.749	0.561	0.3800
ATT	0.651	0.535	15.008	0.000			
SN	0.159	0.189	5.398	0.000			
PBC	0.200	0.185	5.002	0.000			

All of this information implies that the model has a good fit. Equation (1.1) shows the result of estimated final regression model function between mean score of PI and the predictor variables.

$$\hat{Y} = 0.014 + 0.651X_1 + 0.159 X_2 + 0.2 X_3 \quad (1.1)$$

Where;

$\hat{Y}$  = The fitted mean score of PI

$X_1$  = Mean of ATT

$X_2$  = Mean of SN

$X_3$  = Mean of PBC

### Conclusions

Utilizing TPB as the theoretical and conceptual frameworks for this study on safer car purchasing has been proposed. The developed instrument has also been analyzed and appeared reliable with good fit model. Furthermore, the overall regression model was significant. It is hoped that the findings highlighted in the paper will be useful for policy makers, car manufactures and other stake holders to assist in setting priorities with regards to the purchase intention of safer car in Malaysia.

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# Conflict of Interest: Engaging with Alatas' Ideas in the Sociology of Corruption

**Khalidah Khalid Ali**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia.*

Email: khalidah\_kh@petronas.com.my

## **Abstract**

**Purpose:** Conflict of interest emerges in various forms including biased judgment, direct competition, misuse of position/abuse of power and violation of confidentiality. Corruption, a form of conflict of interest is mostly associated with abuse of power and has long become a fabric of society in poor and developing nations including Asia. Malaysia is of no exception although significant initiatives have been taken to fight against this contagious disease. This paper primarily aims at creating awareness to drive public consciousness that corruption is a sinful crime and an act of social injustice. It also attempts to retrospectively engage readers with the ideas of corruption, generated and perceived by a renowned socio-political scientist, Prof. Dr. Syed Hussein Alatas, in his famous masterpiece, *The Sociology of Corruption* (1975) when Malaysia was transforming from an agro-based to an industrial economy from 1970 onwards.

**Design/methodology/approach:** As a methodology, this paper uses secondary data and applies content analysis. The units of analysis include relevant texts, journal publications as well as selected online resources. Arguments from multidisciplinary viewpoints are derived after analyzing corruption from sociological and ethical perspectives.

This study also applies intertextuality in the process of analyzing Alatas' text on sociology of corruption.

**Findings:** While leadership is pertinent, societies evolve and modernism with industrialization contributes to corruptive practices. Recognizing the significant institutional initiatives that have been taken by the government to fight corruption, it seems impossible to totally eradicate it. Although a society accepts the fact that corruption cannot be totally erased, it cannot also be allowed to become a common practice. Literally, corruption no longer needs to be kept a secret. Truth demands corruption to be revealed; be it through whistleblowing and legal actions to uphold social justice although the fight against corruption has its own dilemma. The society at large must be made aware of this pressing issue so that the public will eventually develop a high degree of consciousness within a healthy value system to fully realize that it is a wrongful and unethical act.

**Practical implications:** Corruption indeed involves morality and economic trade-offs where there is constant tension in trying to separate the 'person' from the "business" decision. Impactful initiatives must continue to be undertaken to minimize corruption within a society as it will stifle a nation's progress in the long run. While material wellbeing is important and inequality of wealth distribution is bound to co-exist within a competitive society, moderate lifestyles and non-extravagance should be promoted in all aspects of life.

**Originality/value:** This paper will add to the limited local discourse studies on corruption within societal contexts.

**Keywords:** Conflict of interest, Corruption, Public sector, Malaysia, Ethics

**Paper type:** Literature Review and Research Study

## **Introduction**

Corruption is a controversial subject, yet it happens everywhere, be it in the civil services or the private sector. Corruption, in literal sense, is a form of conflict of interest; “a conflict that occurs when a personal interest interferes with a person’s acting so as to promote the interests of another when the person has an obligation to act in that other person’s interest” (Khalidah *et al.*, 2014). In organizational contexts, conflict of interest arises when employees at any level have private interests that are substantial enough to interfere with their jobs or duties. When their interests lead them to act, it is detrimental to their employers’ interests.

## **Objectives, Methodology and Significance of the study**

Corruption, ethics and integrity have become important issues in the practice and theory of politics, public administration, law, economics and society nowadays. Gunna Myrdal in his Asian Drama identified corruption as a serious bottleneck for Asian development (Habibul Haque, 2004).

Assessing from the criticality of the corruption issue, this paper therefore aims to create awareness and develop public consciousness on corruption as a sinful crime and an act of social injustice. It thrives to initially introduce readers to the concept of conflict of interest and its classifications before discussing corruption within societal contexts. It will continue to retrospectively engage readers with the generated ideas and perceptions of corruption as showcased by a renowned South East Asian sociologist/socio-political scientist, Prof. Dr. Syed Hussein Alatas, in his famous masterpiece, *The Sociology of Corruption* (1975). This text was published when Malaysia was transforming from an agro-based to an industrial economy to sustain socio-economic progress and prosperity. It has been specially selected due to its wide, yet comprehensive coverage on corruption from societal dimensions. It is hoped that his ideas will be a source of reference and a piece of invaluable literature in the study of corruption while Malaysia is striving to combat this social disease.

As a methodology, this study uses secondary data and applies content analysis. The units of analysis include relevant texts, journal publications as well as selected online resources. Arguments from multidisciplinary viewpoints are derived after analyzing corruption from sociological and ethical perspectives. This study also applies intertextuality as a methodology in the process of analyzing Alatas’ text on sociology of corruption. Intertextuality is the reference to or application of a literary, media, or “social text” within another literary, media, or “social text.” One form of intertextuality is a brief or prolonged reference to a literary text in the second literary text (Schulze and Ramirez, 2007). The reader will realize this approach as we analyze Alatas’ text in this qualitative study.

As a contribution, this paper will add to the limited local discourse studies on corruption within societal contexts. Next, we shall discuss the types of conflict of interest and actions taken by the Malaysian government to fight against corruption since independence.

## **Literatures and Discussion**

### ***Conflict of Interest: A Classification***

Conflict of interest is a popular topic discussed at business ethics courses in higher learning institutions. The wake of 21<sup>st</sup> Century saw the collapse of giant American corporations such as Enron, World.Com and Tyco International due to conflict of interest scandals involving top management. In Malaysia, the Perwaja Steel, Bank Bumiputra, Bank Islam and Port Kelang Free Trade Zone cases are among the high level conflict of interest cases that have charted history in the banking and manufacturing sectors; not to mention the civil services (Khalidah *et al.*, 2014).

Contemporary literatures highlight that there are several kinds of conflict of interest including biased judgment, direct competition, misuse of position or abuse of power and violation of confidentiality (Boatright, 2012; Velaquez, 2006; Shaw, 2011). Biased judgment may be related to professionals failing to observe some code of ethics. For example, professional accountants do not merely examine a company's financial statement but they are also responsible for its accuracy in compliance with generally accepted accounting principles (GAAP). In another case, direct competition occurs when an employee is competing with his or her own employer. For example, A is a female employee at XYZ Cake House and opens another bakery while in service at XYZ Cake House.

Next, misuse of position or abuse of power happens in various situations and scenarios. Corruption, in most cases, falls under misuse of position or abuse of power cases. Mahathir Mohamad (1986) has defined it as "giving something to someone with power so that he will abuse his power and act favouring the giver." Violation of confidentiality, another form of conflict of interest, happens when the duty of professionals such as lawyers, accountants and others precludes the use of information acquired in confidence from a client to advance personal interests even if the clients' interests are unaffected.

In today's competitive global world, largely facilitated by information and communication technology, creative and innovative practices such as money laundering and insider trading are new forms of corruptible acts; not to mention gift giving and acceptance which have long become business norms. Gift giving and acceptance may be deceiving although they are commonly regarded as goodwill for establishment of long-term relationships in the world of business. Much as gift giving is an acceptable practice to many business people, it may end up as an act of bribery under most circumstances.

While we note that there are various classifications of conflict of interest cases as outlined above, indeed they involve morality and economic trade-offs whereby there is constant tension in trying to separate the 'person' from the business decision (Khalidah *et al.*, 2015 pp.16). This is also referred to as the agency problem in the study of management (Note: The Law of Agency or Agency Theory specifies the duties of persons who agree to act on behalf of another party and who are authorized by an agreement so to act; for example the employment agreement between an employee and employer. Refer Velasquez, 2006 pp.36).

In other words, the challenge is how to set aside personal interests when executing job responsibilities. For example, being the branch manager of a commercial bank, Mr. A has the power within his authority to approve customers' loans. He is also expected to comply with the loan application guidelines as a responsibility within the bank's governance mechanism. However, a personal agenda arises when Mr. A is obligated to approve Mr. B's loan application that does not meet the bank's guidelines after accepting a kickback or token money from Mr. B. This is certainly a clear case of breach of trust and an abuse of power. Mr. A is already paid a salary by the bank to perform the task effectively. Being an employee, he should be responsible for ensuring that the organization benefits from the loan transaction instead of gaining personal interests by accepting kickbacks. However, he chooses to be opportunistic and uses his position and power to his personal advantage. Aptly, this is a glaring corruptive case of misuse of position.

### ***Corruption and Malaysian Government's Initiatives***

The Malaysian government's initiatives to fight corruption had been a long way. Anti-Corruption Unit (ACA) has been set up in the Prime Minister's Department as early as 1959 after Malayan Independence. Malaysia's Anti-Corruption Agency was found in 1967. Till date, the Malaysian Anti-Corruption Commission (MACC) has been set up to investigate cases of corruption.

In April 2009, Prime Minister Datuk Seri Najib Razak introduced the Government Transformation Programme (GTP) and National Key Result Areas (NKRAs) with two main objectives, first, to transform the government to be more effective in its service delivery and be accountable for outcomes that matter most to the *rakyat*; and second, to help Malaysia move forward to become an advanced, united and just society with high standards of living for all. Rightly so, eradication of corruption through effective enforcement has been appropriately listed as one of the six NKRAs to sustain public sector integrity.

When tabling budget 2010, Datuk Seri Najib also announced that Whistleblower Protection Act would be formulated to encourage informers to expose corrupt practices and other misconducts. This act was formally introduced in Dec, 2010 as one of the legal measures in the implementation of the National Key Result Areas (NKRA) to eliminate corruption. The move would provide immunity to informers from civil or criminal charges. Whistleblowers will be rewarded accordingly as an incentive to encourage public participation to fight corruptive acts within the Malaysian environment (The malaysianinsider.com). In 2014, Malaysia participated in the Transparency International study on perception of public sector corruption. Based on the Corruption Perceptions Index, Malaysia, on the international front was ranked 50<sup>th</sup> out of 175 nations with a score of 52 out of 100. In the same year too, she was regionally ranked as the third least corrupted nation among the ten countries in the ASEAN region, after Singapore and Brunei (Hafsah, 2014).

Referring to the Transparency International Corruption Perceptions Index 2014, it is noted that not one single country gets a perfect score and more than two-thirds score below 50, on a scale from 0 (highly corrupt) to 100 (very clean). To reiterate, Malaysia scored 52/100. Analysis seems to highlight that although corruption is a problem for all countries, a poor score is likely a sign of widespread bribery, lack of punishment for corruption and public institutions that do not respond to citizens' needs (Refer Transparency International Corruption Perception Index 2014 retrieved online on 4<sup>th</sup> October, 2015).

Interestingly, an earlier local study was conducted in 2002 to gauge the corruption situation in Malaysia. The government had commissioned Universiti Kebangsaan Malaysia (UKM) to conduct a survey on "Public Perception of Corruption" in Malaysia (Siddiquee, 2010). The results of this survey were alarming. It revealed that 30.5% of the students interviewed had no qualms accepting bribes if they had the power and opportunity. With regards to values and attitudes, 15% of the respondents had no aversion to giving bribes to get what they want, while another 15.7% have known of individuals who had resorted to paying bribes to be let off for offences they had committed (Refer *Institut Integriti Malaysia's* article entitled "NIP-Enculturating Ethics, Noble Values and Integrity in Malaysian Society).

Much as commendable efforts have been undertaken within the private and public sectors to promote an ethical society, Lesson 10 of PAD190 Principles of Public Administration (2011), retrieved online listed the following issues which challenge public sector ethics and integrity:

- Corruption and bribery among public servants
- Misuse of public fund
- Malpractices in administration activities
- Inefficiency in delivering services
- Lack of initiative, motivation, commitment and performance among public employees
- Lack of accountability among public servants

Referring to the above, corruption and bribery top the list of issues to be addressed in the public sector. Assessing from these information, it is implicative that corruption remains as a pertinent issue to be addressed in Malaysia.

Recognizing this fact, to be addressed in the Malaysian society within today's competitive global environment, this paper will continue to retrospectively relate the ideas of the late Prof. Dr. Syed Hussein Alatas on the sociology of corruption. As a discourse, it will analyze Alatas' views which may represent his own consciousness about corruption, at the time when Malaysia was steadily transforming into an industrial nation beginning 1970s. His ideas and theorization will be a significant source of reference and literature in the study of corruption while Malaysia is striving to combat this social disease.

### **Sociology of Corruption (1975): An Engagement with Alatas' Ideas**

Professor Syed Hussein Alatas is a prominent South East Asian sociologist and a Muslim Malay political scientist. He wrote about corruption as far back as in the 1960s. Sociology of corruption is a field that will have his signature, addressing provocative issues such as why corruption remains outside of the field of sociology and who charts the sociological agenda? Alatas, in his attempts to theorize corruption has advocated that a sociologist studying the phenomenon of corruption has to be fully conversant with the history, the culture, the language and the circumstances of at least one rich and complex instance from which he can derive his data and test his theories (pp1). In addition, he or she has to continuously sustain observation of the phenomenon over a long period to test the validity of certain generalizations on the nature and function of corruption.

In a corrupt society, dualism in the activity of state institutions is the most pronounced. By this, it means that there is the official and unofficial "back door" or "underground" procedure. The nature of corruption has become more sophisticated as the nation evolves but the association between corruption and crime is a well-known phenomenon. Corruption is a form of crime in itself and it should be treated as such. For example, licenses and permits can be obtained by offering grafts or token money to the person responsible for issuing them even though an applicant does not meet set standards and requirements. Tax assessors understate actual assessments at the request of the tax payer to fulfil his personal interests rather than contributing towards national interests. In return for the "service" as well as to show appreciation and gratitude, the tax payer then pays some cash to the tax assessor.

In all cases, corruptive practices will involve two parties who are willing to take risks. There will be an offer and acceptance but in chronic cases of power abuse, the provider of some services will exercise his control to threaten the customers or clients by openly suggesting that he/she will not undertake the job if no token money is given although, in reality, he/she is holding a salaried position out of responsibility and accountability to perform the said jobs or tasks for the customers or clients. Indeed, corruption is atrociously humiliating for the customers or clients and a clear violation of human rights and justice principles.

Interestingly, Alatas' *Sociology of Corruption* (1975) does not aspire to give specific concrete solutions to the corruption problem. In fact, the prevention of corruption discussed in this text refers to general conditions. Quoting from the author's words, "*A solution meant for any particular country has to be preceded by intensive case study with the co-operation of the government concerned. It has to go into details pertaining to the administrative, economic, political, social, cultural, philosophical and ethical aspects of corruption as found in the particular country under study*" (pp7).

While acknowledging that many problems have repeated themselves throughout history, Alatas, in his masterpiece, has made special mention of the great Chinese reformer, Wang An Shih (A.D. 1021-1086). In his extremely instructive attempt to advocate the eradication or rather elimination of corruption (Habibul Haque, 2004), Wang was convinced of the two ever recurrent sources of corruption i.e. bad laws and bad men. According to Wang, history has proven impossible to secure proper government by merely relying on the power of the law to

control officials when the latter are not the right men for their job. “*It is equally futile to expect efficient government if, having the right men in their proper positions, you hedge them about by a multitude of minute and harassing prohibitions*” (pp8). Wang further classified human beings into two groups- the morally mediocre and the morally high. The morally high will not be affected by changes of fortunes but the danger comes when the mediocre gains control of the government. They will then display all kinds of corruptive actions throughout the hierarchy. Alatas has also made a special mention on an Islamic scholar, Abdul Rahman Ibn Khaldun (A.D. 1332-1406), a scientific historian, sociologist as well as a student of corruption. Ibn Khaldun attempted to explain the causes of corruption and the reasons for the failure of reformers although some have succeeded. He has precisely considered in his analysis that the root cause of corruption is one’s passion for luxurious living within the ruling group. They have to practice corruption in order to meet the expenditure on luxury. The other reasons were further effects generative of further corruption. Hence, they were the consequences or side effects of corruption of the ruling group, bringing about economic difficulties and this induced further corruption. In other words, the cycle repeats!

Alatas, in his book, has also discussed corruption within Asian context but revealed that there has not been any continuity in the development of theory and analysis. While he has acknowledged that corruption has relatively received little attention from social scientists, in most instances, this pressing issue is discussed with other subjects such as crime and public administration. Studies have not dwelled upon conceptual and causal analysis, what more to classify the types and degrees of corruption (Note: Refer to some works of Noggles (1962), Wertheim (1965) and Laswell and Rogow (1963) as cited by Alatas in *Sociology of Corruption*).

Recognizing this gap, Alatas’ works attempted to classify corruption in three categories; (i) acceptance of gifts (ii) extortion (iii) nepotism. To elaborate, (i) when a public servant accepts a gift or gifts from a private person with an objective of inducing him to give special consideration to the donor or the person offering the gift; (ii) extortion i.e. demanding such gifts or favours in the execution of public duties; (iii) nepotism i.e. appointment of relatives, friends or political associates to public offices regardless of their merits and the consequences of these actions on the public. These three phenomena are not completely identical but they have one common feature i.e. they lead to subordination of public interests through fulfillment of private interests, hence violating the norms of duty and welfare, “accompanied by secrecy, betrayal, deception and a callous disregard of any consequence suffered by the public” (pp12). Alatas was more concerned about corruption and its total effects on a society which has made graft the “oil that makes the administrative machinery operate quickly” (pp22).

The effects of extortive corruption are many. Graft demands will become a burden to the public since the extra cost will be passed to consumers. It is some kind of illegal taxation which goes into the pockets of the demander and eventually leads to inefficiency of the civil service as a whole. It spreads very quickly, bringing with it negligence and inefficiency and it may come in different forms. The habit of doing something illegal and subversive becomes transferred to wider circles if the practice is not effectively unrestrained. Corruption undermines respect for the constituted authority, deprives a government of public support and alienates public loyalty to government’s aims and objectives.

When extortive corruption becomes widespread within an administration due to previous conditions of corruption, it will become a norm or culture. Corruption is not restricted to the acts of specific decisions. It is a process involving attitude build-up, deliberate planning, historical antecedents, social mobility, group affiliation and other sociological factors (pp25). Hence, it is pertinent for corruption issue to be seen holistically whether in objectivity contexts or in relativistic terms.

In addition to this, Alatas was also referring to the works of Andreski (1966) within the Latin American context and further reaffirmed that even after considering the total effect of corruption from economic, administrative, political or judicial perspectives, “no stretch of sociological imagination could ever succeed in suggesting that it has some positive function in development, except in the development of exploitation, inequality and moral and legal disorder” (pp30). The costs of corruption will distort the whole economy since important decisions are determined by ulterior and anti-social motives regardless of the consequences to the community (Andreski, 1966).

Alatas, in his theory of the dynamics of corruption then divided corruption into three stages to counteract his arguments with those people who have suggested some positive functions of corruption. He further advocated that they seem to view corruption positively because they did not link their analysis with the different stages of corruption to see the negative consequences of corruptive acts. The first stage is where corruption is relatively restricted without affecting a wide area of social life. Almost everything the public requires is available without recourse to graft or nepotism. At this stage, corruption is restricted to a section of the upper circle in the government service and in big business. The second stage is where corruption becomes rampant and everyone has to pay graft or he or she must have influential connection before any service is provided. Finally, the third stage of corruption is when it becomes self-destructive, having destroyed the fabric of society (pp35).

Alatas advocates the interplay of corruption with other factors since corruption in itself is not responsible for destructive effects. At this stage, one has to include the cause and effect relationship of corruption. Corruption stimulates further corruption and this phenomenon develops greater corruption and causes an even greater increase in corruptive cases. The theory of corruption, advocated by Alatas requires that a preceding state of corruption be present and responsible for the conditions that follow. This is initiated by the high rank officers and well to do businessmen who are not affected by economic difficulties. Usually, the succession from the stage of restricted corruption to the widespread and deep-rooted stage originates from these groups. When corruption at this high level has gone on for some time, society will feel the effect through disproportionate declines in state revenues despite substantial tax collections. Consequently, there is decline in currency value and rise in price of goods and services. In sum, corruptive practices of the upper and influential classes will generate conditions for general corruption (pp36) and consequently affect the economy and society at large negatively. It floods the entire state apparatus including centre of power, immersing everything in its path with its tides (Habibul Haque, 2004).

Interestingly, Alatas even identified the causes of corruption as follows: (i) the absence or weakness of leadership in key positions capable of inspiring and influencing conduct which mitigates corruption. (ii) the weaknesses of religious and ethical teachings (iii) colonialism since an alien government will not be loyal to curb/inhibit corruption within the society (iv) lack of education (v) absence of a conducive environment to promote anti-corruptive behaviour (vi) when a value system is undergoing radical change, corruption appears as a transitional malaise (vii) the state of society. Corruption in a bureaucracy reflects the total society. Although these seven factors by themselves will not be able to explain the corruption phenomena, their importance lies in the fact that they help to explain the elements within the matrix and frameworks of the causes of corruption.

Alatas (1975) acknowledged that modernization with industrialization and rapid social changes invite corruption, so do in an already corruptible environment. In addition, the most important factor in the dynamics of corruption is the moral and intellectual stature of the leaders in the society. Following these, he listed down the following conditions to mitigate corruption (i) positive attachment to the government and a spiritual involvement in national progress from

both the public and the bureaucracy (ii) efficient administration and proper structural adjustment of government machinery to avoid any possible sources of corruption (iii) favourable historical and sociological conditions (iv) The functioning of an anti-corruption value system (v) inspiring leadership of a group with high moral and intellectual standards (vi) an educated, intellectually driven society which is able to assess and follow the course of events, including awareness on the causes of corruption . The listed conditions of corruption as above may be linked to each other to see the pattern of relationships in the causal nexus of corruption.

Alatas has indeed developed a comprehensive and structured theoretical approach to explain corruption as a general or rather universal topic within societal context. He has made significant cross-references to compare the nature of corruption with other nations although his prime aim is most likely to relate corruption within the Malaysian environment, with particular focus on the Malays themselves since his analysis is mainly in the context of the administrative authority or civil service (i.e. significantly represented by the Malay ethnic group); not to mention businesses at large.

To conclude this sub-section, while leadership is pertinent, societies evolve and modernism with industrialization contributes to corruptive practices. Corruption is seen to be rampant because people are obsessed with riches, wealth accumulation and luxurious lives. Money makes the world go round. Materialistic lifestyles drive unlimited desires and people lose their senses. Ibn Khaldun spotted the root cause of corruption a long time ago in the 14th Century; the craze for luxurious living makes the ruling class within a society corruptible. People know that corruption is a wrongful act but they will still take the risks to commit it due to worldly desires to lead luxurious lives. This is the “short cut way” to be rich. Only dignity and *taqwa* will make the difference among Muslims to be involved or otherwise.

Quoting a relevant Quranic verse, “*But seek, with that (wealth) that Allah has bestowed on you, the home of the Hereafter, and forget not your portion of lawful enjoyment in this world; and do good as Allah has been good to you, and seek not mischief in the land. Verily Allah likes not the Mufsidan (those who commit great crimes and sins, oppressors, tyrants, mischief makers, corrupters)*” (AlQuran, Surah Al Qasas 20:77). While inequality is bound to exist within a competitive society, moderate lifestyles and non-extravagance should be promoted in all aspects of life. This is the “Golden Mean” of Aristotle (384-322 BC) and it is also widely preached in most religions, not to mention in Islam.

### **Conclusions**

This paper mainly aims to drive the consciousness on corruption as a sinful crime and an act of social injustice. It strives to initially introduce readers to the concept of conflict of interest and its classifications before introducing corruption within societal contexts. The paper next engages readers with the ideas of corruption, generated by a renowned socio-political scientist, Prof. Dr. Syed Hussein Alatas, in his famous masterpiece, *The Sociology of Corruption* (1975), at a period when Malaysia was transforming from an agro-based to an industrial economy, emphasizing on manufacturing as the primary economic activity to sustain progress and prosperity.

Malaysia’s industrialization has been aggressively implemented since 1970s. Recognizing Alatas’ viewpoint that corruption becomes rampant with modernization and industrialization, significant institutional initiatives have been taken by the government to fight corruption. However, it seems impossible to totally eradicate it. Although a society accepts the fact that corruption cannot be totally erased, it cannot also be allowed to become a common practice due to its negative socio-economic consequences. Literally, corruption no longer needs to be kept a secret as advocated by Mahathir Mohamad (1986, pp48). Truth demands corruption to

be revealed; be it through whistleblowing and legal actions to uphold social justice although the fight against corruption has its own dilemma. The society at large must be made aware of this pressing issue so that they will eventually develop a high degree of consciousness within a healthy value system to fully realize that it is a wrongful and unethical act (Mahathir, 1986). Recognizing corruption as wrongful and condemning it as a sinful act is not enough. Indeed, serious impactful initiatives must continue to be undertaken by the Malaysian government and citizens at large as a social responsibility, including whistleblowing and enforcement of legality to minimize corruption within a society because it is a contagious disease which will stifle a nation's progress in the long run. While material wellbeing is important and inequality of wealth distribution is bound to co-exist within a competitive society, moderate lifestyles and non-extravagance should be promoted in all aspects of life.

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# The Impact of Ethical Climate on Organizational Commitment: A Study of Malaysian Higher Learning Institutions

**Kum Lung Choe\***

*Faculty of Business and Finance,  
Universiti Tunku Abdul Rahman, Kampar Campus, Malaysia  
Email: choekl@utar.edu.my*

**Yuen Onn Choong**

*Faculty of Business and Finance  
Universiti Tunku Abdul Rahman, Kampar Campus, Malaysia  
Email: choongyo@utar.edu.my*

**Luen Peng Tan**

*Faculty of Business and Finance  
Universiti Tunku Abdul Rahman, Kampar Campus, Malaysia  
Email: tanlp@utar.edu.my*

*\* Corresponding author*

## **Abstract**

**Purpose:** This study aims to examine the relationship between ethical climate and organizational commitment.

**Design/methodology/approach:** Data were collected from higher learning institutions from various locations in West Malaysia. A partial least square structural equation modeling was employed to test the proposed research model.

**Findings:** The results showed that all three dimensions of ethical climates were significantly related to organizational commitment. Benevolence and principle were positively related while egoism was negatively related to organizational commitment.

**Originality/value:** Organization commitment plays an important role in order to retain the most potential and talented academic intellectuals. Even though many researches were conducted to study the antecedents of organizational commitment, there is relatively less being studied from the perspective of ethical climate. Ethical climate is able to shape every employee morality of work behavior.

**Keywords:** ethical climate; egoism; benevolent; principle; organizational commitment

## **Introduction**

In this era of globalization, organizations are getting more and more concerned about ethics related issues (Singhapakdi, Sirgy, Lee and Vitell, 2010). Every employee is the key person who plays significant roles to accomplish every task. Ethical climate is able to shape every employee morality of work behavior (Wang and Hsieh, 2012). Ethical climate is defined as employees' common perceptions of what is considered ethically correct behaviors and how ethical situations should be dealt with in an organization (Victor and Cullen, 1988). Organizations that do not evaluate and attempt to positively affect the ethical climate of their

organizations may cause negative consequences related to the profitability and viability of their businesses (Khan, 2012). Above all else, unethical behaviors that do not receive punishment will cause other organizational members to think that unethical behavior is acceptable. On the other hand, ethical climates of an organization are not only linked directly to the positive behaviors of employees but also a range of negative work behaviors (Moore and Moore, 2014). Negative work behaviors may create potential issues like tardiness, high rate of absenteeism, social loafing, high turnover rate, decreases in job satisfaction and organizational commitment (Cullen *et al.*, 2003).

Ethical issues are not only significant problems for many companies, but they are also issues that are increasingly crucial in many higher learning institutions (Moore and Moore, 2014). Higher learning institutions are no longer immune from ethical scrutiny; rather, they have been managed like any other business organizations. They are as well subject to competition for students and financial achievements (Ongong'a and Akaranga, 2013). Society is seen as the stakeholder in large that eventually creates a competitive environment in order to retain the best intellectuals. Not all higher learning institutions have created ethical awareness among the academic staff (Namagembe and Ntayi, 2012). This could lead to low sensitivity towards ethical issues among academic staff (Moore and Moore, 2014).

The role of higher learning institutions in the development and stipulation of manpower required for political, economic, social and technological advancement is important in every nation around the globe. The important people behind nurturing and educating the future's manpower are nonetheless the most skilled and specialized intellectuals (Ongong'a and Akaranga, 2013). Organization commitment plays an important role in order to retain the most potential and talented academic intellectuals. Mowday, Porter, and Steers (1982, p.27) defines organizational commitment as "the relative strength of an individual's identification with an involvement in a particular organization" (Mowday *et al.*, 1982).

This study aims to examine the relationship between ethical climates towards organizational commitment in Malaysian higher learning institutions. The significance of ethical climates has become the main issue for organizational commitment (Cullen *et al.*, 2003). With this research, Malaysian higher learning institutions could better understand how ethical climates influence organizational commitment of academic staff.

### **Organizational commitment and Ethical Climate**

Organizational commitment is known as a person's investment toward the organization. It is similar as non-vested retirement benefits, accrued vacation and job security that accrue over time when employed under the organization (Becker, 1960). Organizational commitment is also broadly defined as the employees' connection to or interest in an organization that they were employed (Mowday *et al.*, 1979). Such commitment can be broken down into three factors: 1) positive association with the organization's missions and values; 2) eagerness to contribute towards the achievement of organization's goals; and 3) strong affiliation with organization's identity (Porter *et al.*, 1974).

Ethical climate is a type of organization climate that have moral consequences in organizational policies, practices and procedures (Mulki *et al.*, 2008). It is the summation of ethical perceptions of all members of a particular organization. However, since individual employee is engaged in providing his / her perception on the ethical climate, ethical climate is therefore measurable at the individual or psychological level (Cullen *et al.*, 2003). There are three attributes of ethical climate which are benevolence, egoism and principle (Victor *et al.*, 1993).

#### ***Benevolence***

Benevolence is based on moral philosophy of utilitarian in which the decisions and actions are to generate the greatest good for the greatest number of people (Victor and Cullen, 1988). It

has the expectation that each and every one of the organizational member's well-being is well concerned regardless of internal or external. Organizations that are practicing benevolent climates tend to have a local caring environment (Moore and Moore, 2014). If an organization is perceived to embrace local caring environment, the employee will tend to have higher commitment to the organization due to the positive affect of encouragement among the organization (Cullen *et al.*, 2003).

Decision makers usually look for alternative that maximizes joint interests even though it might result in lower satisfaction of individual needs (Weber, 1995). Benevolent individuals usually make decisions based on option that provides the greatest good for the greatest number of people (Wimbush and Shepard, 1994). In other words, employees would prefer to see that their organizations provide sincere interest for the well-being of others (Cullen *et al.*, 2003). Hence, it is expected that benevolent climate will positively relate to organizational commitment.

Hypothesis 1:

There is a significant positive relationship between benevolence and organizational commitment.

### ***Egoism***

Egoism refers to behavior that maximizes and concerns primarily with self-interest (Victor and Cullen, 1988)3]. Individuals who perceive to be working in an egoistic climate tend to make decisions based on their self-interests without giving much consideration on the needs and interests of others (Moore and Moore, 2014). Whereas from the organization point of view, maximizing return on investment or market share is their ultimate interest. In order to reach their objective, they tend to cross the boundaries or even to the extent of hurting other people (Cullen *et al.*, 2003).

The thought of making a decision by ignoring the interest and the needs of others comes directly from the individual themselves. Although egoism is a weaker cause in motivation, it is, however, the most important cause in organizational commitment (Martin and Cullen, 2006). Egoistic individuals focus on personal gains and do not care about the well-being of others. As a consequence, egoism is expected to negatively relate to organizational commitment.

Hypothesis 2:

There is a significant negative relationship between egoism and organizational commitment.

### ***Principle***

Principle refers to making a decision by conforming to deontological standards like duty and obligations. Principle is based on moral philosophy of deontology in which the actions and decisions are taken by following the rules, procedures, laws, and codes (Victor and Cullen, 1988). It is one's desire to do the right thing regardless of the outcome of action. Employees working under the principled climate are not interested in whose interests are affected. They will most likely make decision based on rules and codes when faced with an ethical dilemma (Moore and Moore, 2014).

Principled climate represents the application of rules, laws, and standards. Organization develops principle climates are likely to be congruent with internalized professional values and norms, which should lead to greater level of organizational commitment. Employees are more likely to develop higher level of commitment when they can identify the values and standards of their organizations (Weiner, 1982). Hence, it is hypothesized as follows:

Hypothesis 3:

There is a significant positive relationship between principle and organizational commitment.

### **Research Instrument**

The research instrument is conducted by using self-administered questionnaire that comprises two sections: Section A and Section B. Section A consists of five questions pertaining to respondent demographic details such as gender, age, marital status, ethnic group and working experience, while, Section B consists of 51 questions on benevolence, egoism, principle and organizational commitment. The questionnaire was adopted from Victor *et al.* (1993): Ethical Climate Questionnaire (ECQ) revised edition in which benevolence consists of 10 items, egoism consists of 14 items, principle consists of 12 items, whereas there are another 15 items used to measure organizational commitment developed by Mowday *et al.* (1979). All items are measured using five-point Likert scale ranged from 1 representing strongly disagree to 5 indicating strongly agree.

### **Data Collection Procedure and Samples Characteristics**

The target respondents for existing study are academic staff in both public and private higher education in Malaysia. All data were collected from five private universities and five public universities in Malaysia. The selection of the University was based on the judgmental sampling technique which was chosen according to top ranking universities in Malaysia. A total of 800 surveys were distributed to ten universities through the effort of well-trained research assistants. Out of 800 surveys, only 325 sets of questionnaire were collected. Only 244 sets of questionnaire are usable and the remaining of questionnaires is incomplete and discarded from the data analysis. This has yielded 30.5% of response rate. The sufficiency of samples is confirmed by using G\*Power software with the setting of 0.95 power, effect size of 0.15 and three predictors: benevolence, egoism and principle. Hence, the minimum samples needed to test the structural model are 119 samples. Thus, the sample collected in existing study is sufficient enough to measure the structural model.

Based on table 1, the majority of respondents were female (n=137, 56.15%). Respondents were categorized into four age groups: less than 35 years old (n=50, 20.50%), 35 to 44 years old (n=106, 43.44%), 45 to 54 years old (n=46, 18.85%) and at least 55 years old (n=42, 17.21%). Most of the respondents are married (n=134, 55%). In terms of race, 54.10% (n=132) of respondent are Malay and followed by Chinese (n=72, 29.51%) and Indian (n=40, 16.39%). Meanwhile, 40.16% (n=98) of respondents have more than 10 years working experiences, 41.39% (n=101) of them have between more than 5 years and 10 years working experiences and the remaining of respondents have at most 5 years working experiences (n=45, 18.44%).

### **Data Analysis**

A partial least square structural equation modeling was employed to test the proposed research model. The software of SmartPLS 3.0 was used to test model in order to examine each hypothesis highlighted in previous section of existing study. The two stage analytical procedures were used to test the measurement model and structural model (Anderson and Gerbing, 1988). Prior to two stage procedures, it is necessary to do model specification by graphically draw out the inner model and follow by outer model (Hair *et al.*, 2014a). The outer model or measurement model should be tested to ensure sufficient validity and reliability is established before moving to inner model for examining the proposed logical relationships displayed in the structural model. The measurement model could be measured by running PLS Algorithm, whereas the structural model could be examined by using bootstrapping technique with 500 re-samples (Hair *et al.*, 2014b).

**Assessment of Measurement Model**

To assess the measurement model, it is important to examine the construct validity which is inclusive of convergent validity and discriminant validity as well as reliability (Hair *et al.*, 2013). In order to measure convergent validity of the measurement model, there are three items needed to fulfill: indicator loadings of at least 0.7 threshold value, average variance extracted (AVE) of minimum value of 0.5 and composite reliability value of 0.7 or above (Gholami *et al.*, 2013). Based on the table 2, most of indicator loadings were above the 0.700 cutoff values (Hair *et al.*, 2014b). However, a handful of low loadings indicators were removed from the indicator such as one item from benevolence variable (B3), and five items from principle variable (P8, P9, P10, P11 and P12). Although, some indicators with below 0.700 loadings were retained in this study, loadings fall between 0.500 and 0.700 can be remained as long as the AVE of the construct is more than threshold value of 0.500 (Hair *et al.*, 2009). In terms of AVE, all construct AVE value have surpassed the recommended minimum value of 0.500 (Henseler *et al.*, 2009; Tenenhaus *et al.*, 2005) which the value of AVE for latent construct were ranged from 0.509 to 0.678. Lastly, the composite reliability for each construct is also established as each of latent construct composite reliability has achieved the threshold value of 0.700 (Chin, 2010; Hair *et al.*, 1998). The fulfillment of all the three criteria: indicator loadings, AVE and composite reliability are met. Thus, the convergent validity of the measurement model is deemed to be established. Succinctly, it is agreed that all indicators are adequately and sufficiently measured for the same construct accordingly.

Table 1: Convergent Validity of Constructs

Construct	Item	Loading	AVE <sup>1</sup>	CR <sup>2</sup>	CA <sup>3</sup>
<b>Ethical Climate</b> Benevolence	B1	0.787	0.531	0.910	0.898
	B2	0.780			
	B4	0.583			
	B5	0.739			
	B6	0.750			
	B7	0.732			
	B8	0.752			
	B9	0.718			
	B10	0.696			
	Egoism	E1			
E2		0.539			
E3		0.712			
E4		0.793			
E5		0.738			
E6		0.758			
E7		0.783			
E8		0.759			
E9		0.754			
E10		0.739			
E11		0.748			
E12		0.708			
E13		0.674			
E14		0.715			
Principle	P1	0.559	0.509	0.873	0.890
	P2	0.555			

	P3	0.554			
	P4	0.836			
	P5	0.865			
	P6	0.926			
	P7	0.575			
<b>Organizational Commitment</b>	OC1	0.568	0.678	0.969	0.965
	OC2	0.728			
	OC3	0.726			
	OC4	0.709			
	OC5	0.852			
	OC6	0.832			
	OC7	0.883			
	OC8	0.907			
	OC9	0.924			
	OC10	0.883			
	OC11	0.724			
	OC12	0.870			
	OC13	0.897			
	OC14	0.852			
	OC15	0.910			

1= Average Variance Extracted, 2 = Composite Reliability, 3 = Cronbach Alpha

Table 3 shows the results of discriminant validity test result. In order to test the discriminant validity, it could be measured by examining the square root of AVE of each construct where it should be higher than the correlation within it and with other latent construct (Fornell and Larcker, 1981). Succinctly, the element in principal diagonal is higher than the off-diagonal elements of respective low and column (Chin, 2010). Based on the table 3, it is indicated that each square root AVE is the highest value as compared to other correlation value in the same column. Further to this, the indicator loadings of each construct are posited at least 0.1 higher than other indicator loadings of other construct or cross loadings (Hair *et al.*, 2013). Thus, this is confirmed that discriminant validity of the measurement model is sufficiently achieved.

Table 2: Discriminant Validity of Constructs

	1	2	3	4
1. Benevolence (B)	<b>0.723</b>			
2. Egoism(E)	0.714	<b>0.645</b>		
3. Principle (P)	0.531	0.432	<b>0.561</b>	
4. Organizational Commitment (OC)	0.694	0.482	0.392	<b>0.618</b>

### Assessment of Structural Model

The bootstrapping has been used to assess the structural model by first evaluating the R<sup>2</sup>. The R<sup>2</sup> for the structural model is 0.571. In other words, the three exogenous variables: benevolence, egoism and principle are able to explain 57.1% of the endogenous variable variances. As shown in table 4 and figure 2, the benevolence is significantly related to organizational commitment ( $\beta=0.436$ ,  $p<0.05$ ). Similarly, the results also revealed that egoism and principle are significantly related to organizational commitment with  $\beta=0.273$ ,  $p<0.05$  and  $\beta=0.159$ ,  $p<0.05$  respectively. Hence, all of the proposed hypotheses are supported. It is also recommended to examine the effect size which is able to inform the researchers about the size of effect instead of whether the effect is existed between exogenous variable and endogenous variable (Sullivan and Feinn, 2012). The effect size for benevolence, egoism and principle on

organizational commitment are considered medium level in accordance with Cohen’s (1988) guideline: 0.02 (small), 0.15 (medium) and 0.35 (large). Other than this, the blindfolding procedure is used to examine the predictive relevance of the structural model (Henseler *et al.*, 2009; Chin, 1998). However, there is one condition of testing predictive relevance which it can only be applied to endogenous construct with reflective measurement (Henseler *et al.*, 2009; Tenenhaus *et al.*, 2005). As long as the predictive relevance value is more than 0.00, it has sufficient predictive relevance in existing structural model ( $Q^2=0.208$ ). Addition to this, the relative measure of predictive relevance in predicting the structural model is considered medium level as the  $Q^2$  value is more than 0.15 (Hair *et al.*, 2014b).

Table 3: Summary of the Structural Model

Hypothesis	Path	Standard Beta	Standard Error	t-value	Results	F <sup>2</sup>	Q <sup>2</sup>
Hypothesis 1	B => OC	0.436	0.079	5.505*	Supported	0.133	0.208
Hypothesis 2	E => OC	-0.273	0.070	3.884*	Supported	0.087	
Hypothesis 3	P => OC	0.159	0.173	3.054*	Supported	0.103	

\* p<0.05

## Discussions

### *Benevolence*

Academic staff who believe in benevolence will take the interest of others very seriously; even if it means they have to sacrifice their needs. Increase in benevolent climate will lead to an increase in organizational commitment. This is due to the fact that benevolence is derived from the utilitarian approach with the aim to generate the greatest good for the greatest number of people (Victor and Cullen, 1988). Higher learning institutions that are practicing benevolent climates tend to have a local caring environment. If an institution is perceived to promote local caring environment, the employee will tend to have higher commitment toward the institution due to the positive affect of encouragement on the institution (Cullen *et al.*, 2003). Thus, benevolent climate will produce better cohesiveness among the academic staff which in turn leads to a higher organizational commitment.

### *Egoism*

Self-interest behaviors and attitudes may include lying, cheating, stealing and etc (Wimbush and Shepard, 1994). Therefore, an egoistic climate will tend to yield rather unusual working behavior, lower group cohesion, higher intentions of turnover and lower organizational commitment within their employees. Employees working in an egoistic ethical climate may perceive that their organizations always maximize their self-interests at the expense of other stakeholders (Moore and Moore, 2014). Increase of egoistic climate will reduce employees’ organizational commitment. Thus, academic staff who perceive themselves working in a high egoistic climate tend to have greater self-interests; they are only interested in increasing their own income or promotions. In other words, academic staff will not care about the welfare of others and their interests in their institutions will decrease.

### *Principle*

The political process and law restrictions require manager to focus on the internal processes and structures through task leadership (Cullen *et al.*, 2003). Principled climate has positive relationship with organizational commitment only when it is associated with professional workers such as lawyer, lecturer, and accountant (Shafer, 2009). This is most likely owed to the professional trainings these people have gone through. Professionals are used to adhere to

their own codes of professional conduct. They will perceive their organizations as fair if their organizations have a set of comprehensive rules and regulations that apply across all the members of the organizations. This is how fairness is achieved via procedural justice (Masterson *et al.*, 2000). When academic staff perceive increase in fairness across their institutions, their commitment toward the institutions will increase as well.

### **Implications**

It is important for higher learning institutions in Malaysia to incorporate a comprehensive code of professional conduct (Meyer and Evans, 2005). Almost all institutions implement their own sets of rules and regulations. However, it is not clear if all institutions emphasize on the code of conducts for their academic staff. Academic staff should be trained and constantly reminded on the importance of adhering to their code of professional and ethical conduct. It is equally important to equip them with the right tools to identify and manage ethical risks. Case study and role play can be effective in preparing academic staff in handling various ethical challenging scenarios.

Malaysian higher learning institutions can adopt a bottom-up approach by empowering the members of the institutions. All members inclusive of the academic staff should be given the opportunity to participate in drafting their own professional code of conduct. It takes less persuasion effort from the management to implement the code if it is drafted by the members of the institution (Parboteeah *et al.*, 2010).

Organizational culture forms the basis of ethical conduct in an organization (Militaru and Zafir, 2012). Rules and regulations will not be effective if staff have the intentions to commit wrongdoing. It is therefore pertinent to establish a benevolent culture in which every member of the institution understands the relevance of ethical behavior and the potential impact of their actions on stakeholders. They should be fully aware of the roles they play in upholding their organizational image as well as safeguarding the interests of the stakeholders.

### **Conclusion**

Ethics is no longer a feel good factor for organizations and there is no exception to higher learning institutions. Unethical behaviors of academic staff pose immediate threats to institutions in terms of reputational and compliance risks. On the contrary, higher learning institutions with strong and positive ethical climate can enhance the organizational commitment of their staff.

Little is known about the moderation effect of employee ethical tendency on the relationship between ethical climate and organizational commitment. It is expected that a person with strong ethical tendency will result in much stronger organizational commitment. Future research could focus on exploring an array of possible moderators in addition to ethical tendency (Ohman and Ostman, 2008).

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# An Integrative Framework to Study Malaysian Paddy Farmer's Decision on Adoption of Green Fertilizer Technology

**Nadia Adnan\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*  
E-mail: nadia.adnan233@gmail.com

**Shahrina Md Nordin**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*  
E-mail: shahrina\_mnordin@petronas.com.my

**Imran Rahman**

*Department of Fundamental and Applied Sciences,  
Universiti Teknologi PETRONAS, Malaysia*  
E-mail: imran.iutoic@gmail.com

\* Corresponding author

## Abstract

**Purpose:** Green fertilizer technology (GFT), is the means of improving towards the rising environmental concern. Paddy production using green fertilizer technology potentially allows sustainable development and helps farmers to increase the yield in Malaysia. The main purpose of this paper is to develop a conceptual framework on farmer's strategic decision making.

**Design/ methodology/approach:** A theoretical framework was developed using theory of planned behavior and expected utility theory. The framework was polished based on insights gained farming experts on innovation decision in general and added value on adoption of GFT.

**Finding:** Paddy farmers have largely managed their business by using traditional methods of farming that result in low productivity and low farming income. The main role of paddy farmers is to provide sufficient food supply to the country. Within this agriculture sector, paddy has always been considered as an important commodity because it is the main staple food for the nation. In addition to further progress in this sector, the adoption of GFT has developed to become one of the main components.

**Originality/Values:** The author includes the feedback of Malaysian government, extension services and research centers (MARDI) stimulate paddy farmers to use GFT that increases productivity without damaging the environment. This research paper offers a conceptual framework founded on Theory of Planned Behavior (TPB), Theory of reasoned Action (TRA) and Expected Utility Theory (EUT), to study paddy farmers' decision on adoption of green fertilizer technology. The conceptual framework explicates the adoption decisions as a self-motivated process, presumptuous a composite interaction of groups of variables coming from three different theories. The combination of TPB, TRA and EUT overcomes some limitations that ascend when just one theory is used to examine the adoption decision among paddy farmers in Malaysia.

**Keywords:** Adoption, Decision, Paddy farmer, TPB, EUT, GFT

**Paper type:** Conceptual paper

## Introduction

Investigating agricultural technology adoption decision has long been of interest among social scientist over the past few years (Adesina and Baidu-Forson, 1995; Chaïbi et al., 2011). Number of studies on the adoption decision in agriculture industry has been carried out throughout the world (de Aragão Pereira, 2011). In the context of developed countries, several technologies have been examined, also determine the various factors affecting the adoption decision (Bravo-Monroy, Potts, and Tzanopoulos, 2016; de Aragão Pereira, 2011). However, in developing countries the construction of agriculture decision process in adoption of innovation is ineffectively understood (Jara-Rojas, Bravo-Ureta, and Díaz, 2012; Jochinke, Noonon, Wachsmann, and Norton, 2007). Therefore, understanding this phenomenon is essential to maximize the adoption decision (Knowler and Bradshaw, 2007). To address these issues the major concerns of agricultural economists in Malaysia are a thoughtful way of demonstrating the procedures and significances of decision-making among farmers (Callens, Cherfi, and Boyom, 2014; Conway and Barbier, 2013). The farmers' decision to adopt any innovation has been studied extensively over the decade in Malaysia (and Kasim Mansur; Gallagher and Muehlegger, 2011). While, all these studies have been conducted by the distinct line of research, such as economic, sociology, psychology, agriculture extension and marketing perspective (Bravo-Monroy et al., 2016; Noppers, Keizer, Bolderdijk, and Steg, 2014). Thus, most of the models on the adoption of innovation have inclined to make the decision of adoption (Srivastava, Singh, Tripathi, and Raghubanshi, 2016). Collectively researchers suggested that the adoption decision depends upon the range of the spectrum like socio-economic, agro-ecological, institutional, informational and psychological as well as a cultural factor (Prokopy, Floress, Klotthor-Weinkauff, and Baumgart-Getz, 2008). Based on the previous literature of (Edwards-Jones, 2006) where they suggested there is a need of formal integration of sociologic, economic and psychological variable in the relevant models. However, the researcher believe that this concern should be addressed to get the better understanding from the farmer's decision towards the adoption of innovation (Jara-Rojas et al., 2012). In agriculture industry GFT refers to new seed and fertilizer inputs. Major emphasis on GFT was emerging in the late 1960s as farmers were not aware of the issues related to enhancing farm production through GFT (Pingali, 2012). Globally, including the Asian and Pacific initiative to encourage the Agra- based, environmentally-friendly innovation among farmers named as GFT (Sumathi, Chai, and Mohamed, 2008). The purpose of GFT application is to link agriculture with the environmentally-friendly technology, which contributes to both sustainable agriculture development and increase production (Ghadiyali Tejaskumar and Kayasth Manish, 2012). There are many agricultural commodities in Malaysia that require the application of GFT like rubber, palm oil, coca and paddy. Particularly in this study, the researcher is highlighting the paddy industry because, it is one of the most important agricultural crops beside oil palm and rubber which has been growing in both peninsular and east Malaysia (Fahmi, Samah, and Abdullah, 2013). The Malaysian government authority focuses more on paddy industry, because it is the staple food for the nation apart from palm oil and rubber (Ramli, Shamsudin, Mohamed, and Radam, 2012). While the total annual production of rice stands at 2.51 million metric tons, but this is not up to the consumption mark (FAO, 2012). To enhance the firm production through sustainable mean is the major thrust of the national policies, which can meet with the adoption of GFT, which increase the production without damaging the environment.

There are lots of studies took place, but despite of all the past studies, the research on GFT adoption is limited to address the paddy farmers' intention toward the adoption decision in a Malaysian context (Othman and Muhammad, 2011). Moreover, it has been concluded from those studies that most of the farming community is not able to understand the term "green"

terminology in Malaysia and its importance, which benefit farmers to increase the production without damaging the environment (Kunasekaran, Ramachandran, Yacob, and Shuib, 2011). To make farmers understand about the adoption of innovation this is only possible when their economic and non-economic goal are satisfied (Hezri and Ghazali, 2012). However, the previous research stated that farmer's decision and behavior have been studied by two main different approaches economic and non-economic separately. For instant, if we take purely economic literature of (Austin et al., 1998; Davies and Simonovic, 2011) where he discussed that farmer's adoption decision is based on theory of normative. This theory has assumed that decision can be demonstrated only in a way that farmers maximize the profit. Nevertheless, this literature could not explain the complete complexity of adoption decision among farmers (Austin et al., 1998). Moreover, the model is not producing the maximum profit and failed to recognize the farmer's behavior (Jochinke et al., 2007). Understanding farmers' behavior regarding adoption of GFT requires multidisciplinary considerations. To daze these cautions, this research suggests a better understanding through two different approaches in the field of agricultural economics<sup>3</sup> about farmer's decision and behavior. Primarily, a set of common factors is purely founded on model of economic, where Expected Utility theory (EUT) where the variable of psychological factor explains behavior of farmers for instant to adopt GFT. While, the most relevant theories that has been used by the researcher to understand the farmer's behavior and attitude was developed by Fishbein and Ajzen (1975) Theory of Reasoned Action and Ajzen (1991), Theory of Planned behavior (TPB). The motivation behind this propose work tries to concentrates on GFT adoption among paddy farmers because it helps them to increase the yield and gives them a better understanding on environment sustainability. By rearranging, classifying and integrating the adoption decision based on the generic framework of EUT and TPB. As, Fahmi et al. (2013) given a general view about these variables that may influence the decision of adoption among paddy farmers. A review on GFT adoption is given by (Othman, 2012) but here researchers didn't mentioned the cultural aspect and economical aspect in terms of adoption decision. The framework Wauters and Mathijs (2013) has observed a rising interest by the researcher because of socio-psychological way to study the adoption decision. Whereas, Wauters and Mathijs (2013) argues that this interest has being induced by the growing dissatisfaction of the classical variable in the research study of the adoption. If we look at the research done by (Knowler and Bradshaw, 2007) where they stated that's such variable incline to be irrelevant. Consequently, the researcher tries to bring upon the work from the past and add framework form in order to make better understanding and formulate the research discipline.

### **Theories to Adopt Green Fertilizer Technology among Farmers**

For agriculture development the theories on adoption decision of technology is considered the most effective way to understand farmer's adoption decision. This particular paper researcher is using two different theory expected utility theory (EUT) and theory of planned behavior (TPB) to understand farmer's adoption decision. EUT has been used to study different type of innovation worldwide in the agriculture perspective. One could expect that, since one of the main assumption in EUT is that farmers have an objective to maximize the profit the theory would be used to study innovation that are expected to increase profitability. EUT is not only use for the adoption of innovation that are expected to increase profitability (Wubeneh and Sanders, 2006) but it also explains the adoption of sustainable and conversation techniques. TPB have been used in agricultural economics with at least two objective: Clarify the generic behavior (Beedell and Rehman, 2000; Bergevoet, Ondersteijn, Saatkamp, Van Woerkum, and Huirne, 2004) and government agencies behavior (Beedell and Rehman, 2000) or a specific one (Bergevoet et al., 2004). These theories have been used to explain different type of innovation mainly in developed countries. Construct are categorized in the following group: beliefs;

farmers perception of the innovation, psychological construct, encompassing behavioral intention, attitude, subjective norms and perceived behavioral control; farmers objectives and goals background factor which includes farmers characteristics, household characteristics, farm characteristics, farming context and acquisition of information or process of learning.

### ***Farmers Perception***

The propose work explains the EUT adoption decision include measures of farmers perception as explanatory construct. Whereas, this research tries to incorporate the perception about benefit, risk and cost associated with the adoption of GFT. The other perception group is based on the assumption that what is benefit and how farmer perceive benefit, risk and cost associated with the innovation. The researcher used benefit and cost associated with the innovation as a potential explanatory construct. Their hypothesis was very clear farmers who are more informed about innovation, higher profit and lower cost are more likely to adopt it. The result confirm the proposition. These variable were measured by asking farmers about their perception about profitability of the GFT (benefit), the cost associated with the GFT (cost) and how the GFT as being important to them in the future. Additionally, profitability in the model of Schechter (2007) is based on idea from EUT, where farmers perceptions about risk on innovation considered as another explanatory construct on adoption decision. While, (Martínez-García, Dorward, and Rehman, 2013) also mention that their finding support that this construct plays an important role on adoption, as well as perceived profitability.

### ***Beliefs and Psychological Constructs***

As projected, study based on TRA/TPB uses beliefs factors and psychological factors variables like intention, attitude, subjective norm and perceived behavioral control varying the emphasis in each of them and how they are measured (Burton, 2004). The application of TRA is to explain adoption decision (Martínez-García et al., 2013) used this theory to study farmers who were already engaged in the use of improved grass land management innovation in Mexico. The researcher found that farmer's intention to use the innovation was influenced by salient referents as well as by their own attitude confirming TRA hypothesis. An instance of application of TPB in adoption decision is found in Wauters et al. (2010). The researcher studied on adoption of soil conservation practice (cover crops, grass buffer strips and reduced tillage) by Belgian farmers. Their finding showed that the most important factor regarding adoption was farmer's attitudes toward the soil conservation practice.

### ***Background Factors***

The background factor has been explored in number of studies on adoption and has been summarized by (Gallagher and Muehlegger, 2011). However, it begin with farmer's objectives and goal on EUT and TRA/TPB approach farmer's objective in different ways. The role of TRA and TPB variable is not clear in EUT farmers viewed as having only the objective to maximize the profit. Edwards-Jones, (2006) statuses that utility is difficult to measure profit is usually used as a substitute for this concept. He further elaborate that by adding risk attitude farmers maximize the expected utility of profit rather than the expected profit. As an outcome of this dispute, if GFT has higher expected utility of profit than the old technology adoption among farmers will occur. Farmer role and goal are not clear in TRA and TPB some researcher try to put different variable in their model. For example if we look back the work that had been done in these theories in regard to farmers. Whereas, Burton (2004) used TRA construct attitude and additional related variable to farm objectives to explain two generic farmers behavior in regard to business and environment. Bergevoet et al. (2004) found multiple attitude that influence farmers behaviors. While, TPB explains the commercial behavior of Dutch dairy farmers. He

used farmer's goals instead on farmer intention to adopt in context the model of TPB (Burton, 2004). Then goal were measured based on attitude subjective norm and perceived behavioral control and entrepreneurial behavior as a result of farmers goals (Jara-Rojas et al., 2012; Kunasekaran et al., 2011). Their findings confirmed that goals are one of the cause of farmer's behavior. Furthermore, TRA and TPB model didn't use objectives and goal clearly to determine farmer's behavior. Some researchers like Willock et al., 1999 include these variable in their model to better predict farmer's behaviors towards adoption decision. Their objective were not to used or explain a specific behavior but rather generic ones. Although there are many other farmers perspective and objectives that identified in the past literature. Bergevoet et al. (2004) had given a list of goal and objectives for farmers. However, holding a particular set of goal and values didn't completely explain the farmer's adoption decision.

Furthermore, the role of back ground factor on TRA and TPB models are not clearly used. As Beddel and Rehman (2000) explained, the pledge point of their research is that all variable are not clearly included in the model through their effects on attitudes and intentions. Reimer et.al (2012) found exception about adoption in business management practice among farmers in USA which is based on TRA analysis on an extension of TPB by Fishbein and Ajzen (2010). While, theory of reasoned action claimed that beliefs come from background factor which was based on farmers, farming context and farming characteristics which influence the farmers' beliefs (Wubeneh and Sanders, 2006). In EUT contrasts linked with farmers characteristic, farming context and information acquisition learning or information are expected to influence the farmers decision (Prokopy et al., 2008). There are a number of published papers relating classified to background factor with the decision to adoption but all carries separated approach like socio- economic, agro-ecological, institutional, informational and psychological (Tey, 2013).

Now our goal is to present the justification if there is no explanation why researcher added all these variable. The discussion is based on the past research based on the hypothesis. Farmers experience is needed to be positively related to the adoption (Öhlmér, Olson, and Brehmer, 1998) because it may influence the ability of the farmers to use relevant information. Liu (2013) argues that farmers may adopt the innovation when the low risk involve. In this line the head of the farming community is expected to positively influence the adoption decision (Liu, 2013). Furthermore, the sign on age is unknown experience and older farmers are better understand the characteristics of innovation than young age group of farmers; older farmers are more opposed than younger farmers (Liu, 2013). Moreover, the gender proposition is like male headed farmers are more likely to get information about new technologies than females farmers. According to (Maertens and Barrett, 2013) argument to defend that the education as a variables enhance the ability of farmers to obtain synthesize and respond quickly toward the adoption of innovation. Consequently that is the reason education have a positive sign on the adoption of green fertilizer technology. He also studied the role of farmers' moral and societal concern toward the adoption decision. Mzoughi (2011) studies showed that moral and social concern on adoption decision, whereby the concern related to individual ethics such as satisfaction, their moral concern related whether the farmers thinks that do not feel guilty about his own choice. Though this he does not practice any theory, it transported the disagreement that farmers' moral and emotions effect the adoption decision. Farmer's awareness of a problem that an innovation solve is probable to increase the likelihood of adoption. The adoption decision is not unavoidably made by the head of the household alone but also by other educated old member of the house (Ramirez, 2013). In general the higher educated member of the house may have higher probability to adopt the innovation and other than that family size is expected to have a positive sign on adoption decision (Ramirez, 2013).

The farm liquidity and credit have a significant relationship toward the adoption decision Ramirez (2013). He further claimed that farm liquidity to undertake the risky business is worthiness of household. However, Hayrol Azril (2010), claimed that subsidies on technology adoption have a positive sign toward the adoption decision. The probability to adopt GFT is higher in modern environment than traditional one. Whereas, Hamza (2006) specified that contacted with extension service agent will have a positive effect on adoption decision, because of farmer’s access to information regarding the adoption of GFT. Farmer’s self-assurance in the skill of extension agent have a positive impact toward the adoption (Kassie, Jaleta, Shiferaw, Mmbando, and Mekuria, 2013). He further clarified that farmers may acquire the information from their peers that is hypothesized to be positively associated with the adoption decision. Illustrations of these variables are presented in the table given below are adapted from (Reimer, Thompson, and Prokopy, 2012).

Table 1: Factors that Affect to Influence Farmer’s Decision to Adopt GFT

Farmers Characteristics	Experience
Farmers Characteristics	Risk abhorrence
Farmers Characteristics	Age
Farmers Characteristics	Farmers supervisor
Farmers Characteristics	Gender
Farmers Characteristics	Health/Education
Farmers Characteristics	Awareness of the innovation
Farmers Characteristics	Cultural aspect
House hold Characteristic	Home consumption
House hold Characteristic	Relatives
House hold Characteristic	Family size
Farm characteristics	Farm Size Big/small/ medium
Farm characteristics	Avaibility of innovation
Farm characteristics	Income
Farm characteristics	Land tenure
Farming Context	Credit
Farming Context	Modern environment
Farming Context	Agro climatic condition
Farming Context	Subsidies
Farming Context	Pest disease
Acquistion of awareness and information	Extention service Officer
Acquistion of awareness and information	Participation in on farm trails
Acquistion of awareness and information	Social Network
Acquistion of awareness and information	Member of farmers group association
Acquistion of awareness and information	Framer motivation to adopt GFT

### A Conceptual Framework on Green Fertilizer Technology Adoption

This conceptual framework explains the adoption decision is the active process, a complex interaction among group of constructs as presented in the Figure 1. First and foremost farmer must be aware with the benefit GFT adoption. While awareness term mean that farmers must know that GFT and that it is potentially or practical significant for them. This framework begin with the point where researcher states that information and awareness is an important aspect of adoption decision (Zhou, Herzfeld, Glauben, Zhang, and Hu, 2008).It is documented that there

are many construct prompting farmer's awareness related to gaining of information. Though, it is claimed in the framework is self-motivated, a farmer who is not aware with the GFT innovation may acquire more information and become aware of it. If the farmers are aware of the GFT adoption, they have the option to adopt, partially adopt or do not adopt. Subsequently, for GFT, (Mariano, Villano, and Fleming, 2012) there may be a supplementary step in which a farmers may decide to transform in order to adapt it more closely to his individual condition. The theory of TRA/TPB stressed that intention is the predictor for a specific behavior research also keep it in the same way of postulation. Researcher focal point is farmers intention to adopt the green technology in the study of TRA and TPB attitude, subjective norm and perceived behavioral control instigate behavioral intention researcher also keep it in that way with some changes awareness about the innovation also influence farmers behavioral intention to adopt. According to the theory of TPB (Beedell and Rehman, 2000) normative belief come from the subjective norm, while control belief come from perceived behavioral control. This postulate is illustrated as follows where farmer that has the belief that GFT increases productivity assesses this outcome better if he has the impartial of increase profit. On the other hand the psychological factor coming from the beliefs and awareness will result the positive and negative intention to perform behavior to adopt, not adopt or partially adopt the GFT. Conversely even when there is a positive intention, the adoption may not take place because of the farmer's beliefs, awareness about the benefit and cost. The background factor contain all these variable like characteristic of farmers, household, farm, farming context and acquisition of information/process of learning. Farmers who adopt or trail the green innovation technology, modifies his beliefs and perceptions. The conceptual framework conveys some visions that must be reflected in the adoption studies (Adnan, Vasant, Rahman, and Noor, 2016). The farmer's adoption behavior towards the GFT does not rely only on expected profit; it also depends upon the benefit to adopt GFT. Moreover, Mzoughi (2011) argued that expected profit and risk associated with the adoption of green fertilizer technology are also considered. Farmers may also consider the social factor and other benefits and risks associated with this adoption decision. Furthermore, Mzoughi (2011) strengthened the argument where he observed that social concerns drove farmers adoption decision, where social concern are those which shape behavior in relation to particular group like others farmer in the same region. In this framework it has been noted that farmer may have more than one goal and objectives to account for the decision of adoption toward GFT. So, in this conceptual framework it focuses more on the psychological factor instead of maximizing the expected utility of profit; we need to emphases on the explanation given by the Burton (2004). He recognized the idea that people do not engage in the economically optimum but instead they optimize the social inherent in decision making process. This argument is exemplified by Nordin, Noor, and bin Md Saad (2014) who stated that farmers may have many objectives and goals in terms of adopting innovation. When farmers make decision to adopt GFT they may take into account that innovation helps him to achieve his objectives and goals. Hence, the conceptual framework's propositions are; positive attitude leads to adoption, a positive assessment about how important the decision of other in adoption is subjective norm, positive belief that one has the resources to adopt the GFT it's a perceived behavioral control which increased the possibility toward the adoption of green fertilizer technology. Awareness about psychological construct about the GFT can also lead farmers toward the positive and negative adoption of GFT. Nevertheless benefit, cost and risks are important factors, availability and awareness about GFT. Hence, the important aspect is that what farmer's beliefs, perception at the time of decision to adopt GFT. In the past research on EUT constructs the background factor influence directly the decision to adopt and not to adopt (Abadi Ghadim, Burton, and Pannell, 1999). Under the framework developed by (Abadi Ghadim et al., 1999; Williams et al., 2012) it is hypothesized that the demographic and social

factors like age experience influence the adoption decision with the influence of subjective norm perception and attitude. In the present conceptual framework these factors directly influence the decision but they have an indirect impact on farmer’s perspective and beliefs which gives a positive and negative impact of farmers. A farmer acquires more information about the GFT by adopting or partially adopting his perception and beliefs that are predictable to change as emphasized in the Figure 1. The relevance to process the obtaining information and learning showed by Ghadim and Pannel (1999) where he stressed that innovation has an important aspects for better adoption decision making.

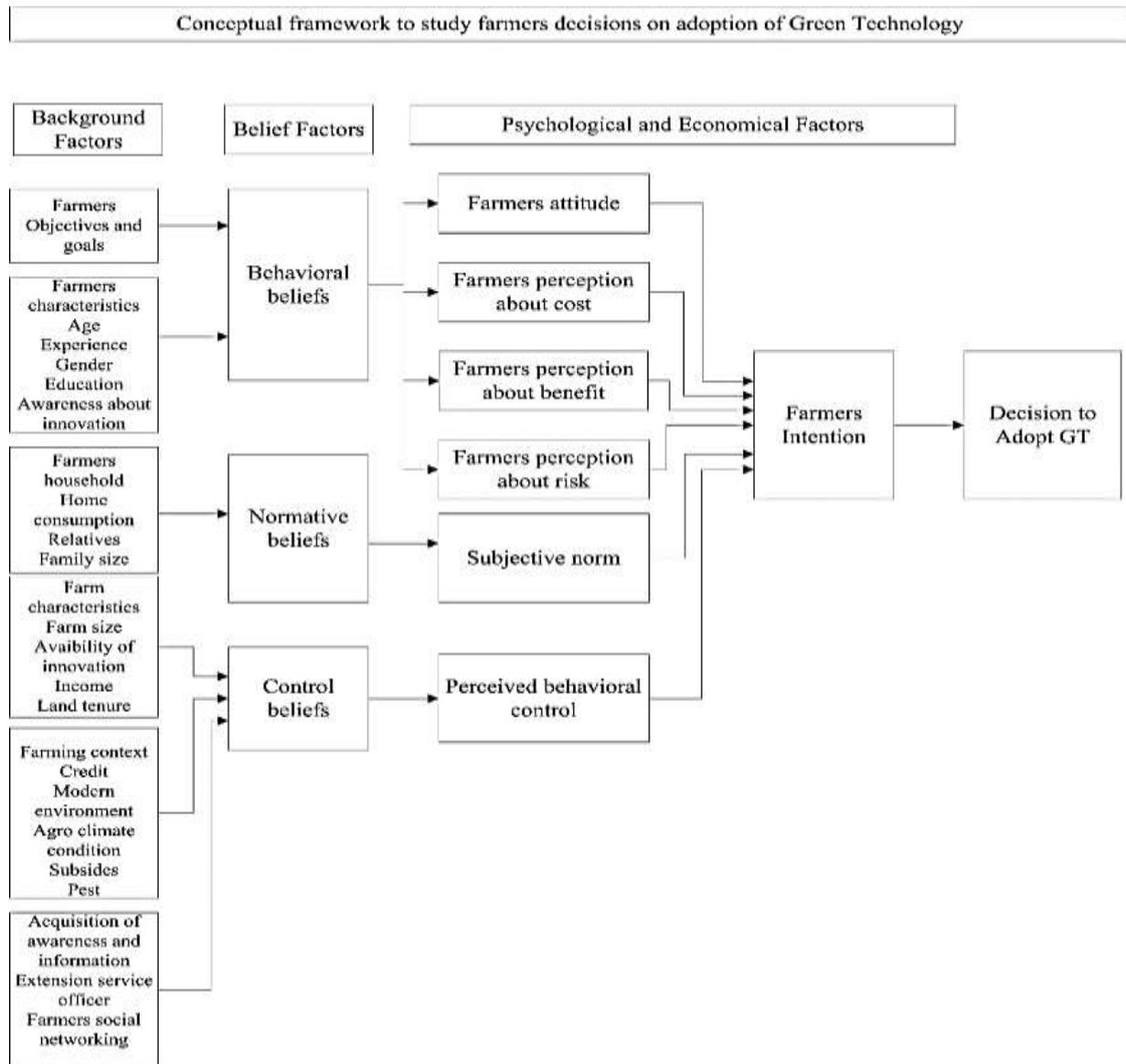


Figure 1. Conceptual Framework

### Conclusion

This study focused on the economic and non-economic factors that influence farmer’s decision to adopt green fertilizer technology. Edward-jones (2006) raised an issue that at least five set of variable that impinge on farmers decision farmers characteristics , characteristic of household, structure of the farm, the broader social environment and the benefit of the innovation to be adopted. Using utility maximization will suggest variable that could improve the understanding

of farmer's adoption decisions. The researcher's concern is more related to farmer's decision on adoption of GFT. In the past research the focus was more on how they should make decision It is very vital to understand farmers decision depend upon the complex factors. Consequently, based on the use of EUT and TPB theories this active framework heightened the adoption decision among farmers based on assortment of variables. Nonetheless, researchers argue that by using only one theory researcher may restrict their finding by not considering the different approach to this adoption decision, especially in Malaysian paddy farming because it is a staple food for the nation. TRA and TPB do not consider clearly the role of actuation and information. Whereas, EUT studies focuses that farmers have just one objective to maximize the profit. The combination of all these theories can help to overcome the restriction. Background factor may generate some controversy with other researcher groups using variables differently. The pledge point of this framework is that those variables have an indirect effect on the farmers' beliefs and perception instead of direct impact as we can see in the study of EUT theory. Lastly including all these constructs and check their relation will be a challenge but we consider that the framework provides a comprehensive view about the adoption decision.

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# Emotional Intelligence and Expatriate Job Performance in the ICT Sector: The Mediating Role of Cultural Adjustment

**Jugindar Singh Kartar Singh**

*School of Business and Management, Asia Pacific University, Kuala Lumpur, Malaysia*

**Nik Hasnaa Nik Mahmood**

*UTM RAZAK School of Engineering and Advanced Technology, Malaysia*

## **Abstract**

**Purpose:** The purpose of this paper is to study the relationship and impact of Emotional Intelligence (EI) on job performance as well as investigate the mediating role of cultural adjustment between the two.

**Design/methodology/approach:** Extensive review of literature was done to acknowledge the emotional intelligence and job performance concept. A quantitative survey was developed and administered to 301 expatriates engaged in the ICT Sector in Malaysia.

**Findings:** The findings of this study revealed that EI has a strong relationship with performance of expatriates. The findings also support the role of cultural adjustment (CA) in mediating the relationship between EI and job performance of expatriates. The findings of this study support the results from some earlier studies and also bring out several new ideas such as the importance of EI and the mediating role of cultural adjustment.

**Research limitations/implications:** The data for this study was collected via a self-reported questionnaire that could be susceptible to bias. Expatriates who failed in their assignment or expatriates who returned pre-maturely to their home country were not included. For future research, a qualitative research design and methodology is recommended to provide a deeper understanding.

**Practical implications:** The findings of this study have significantly contributed to the advancement of knowledge in job performance and cultural adjustment and it is evident that the level of expatriate EI facilitates expatriates job performance and cultural adjustment. The implications are in the areas of expatriate selection, training and support practices. This information enables organizations to better prepare expatriates for expatriate assignments in the ICT Sector in Malaysia.

**Originality/value:** Although prior research has investigated a number of factors that contribute towards success of expatriates, this paper is one of the early empirical endeavors that examined the impact of EI on job performance and the mediating role of cultural adjustment between the two in the ICT sector in Malaysia.

**Keywords:** Expatriates Cultural adjustment, Performance and Emotional Intelligence

## **Introduction**

From a strategic perspective, optimizing the effectiveness and performance of international assignees is a significant HR activity for most multinational firms' (Caligiuri and Tarique, 2006). The implementation of global strategies depends on selecting the right people but global organizations are facing strategic challenges (Dewhurst, Harris, and Heywood, 2012). The essential component in creating such competitive advantage is the human capital that

encompasses competencies and abilities of the workforce (Dewhurst et al., 2012). For competitive advantage, organizations depend on the performance of expatriates (Palthe, 2004). Expatriates may face challenges in intercultural effectiveness in a multi-cultural country like Malaysia and inter-cultural skills and competencies are important (Solomon and Schell, 2009). Having the right people to manage and operate their businesses is a critical success factor in international operations (Dowling, Festing and Engle, 2008). However, many companies find deploying and developing talent in emerging markets to be a major challenge (Dewhurst et al., 2012).

As the competition for international talent picks up steam, companies are increasingly looking to enhance their mobility policies to attract and retain key global talent (KPMG, 2012). The number of expatriates sent by organizations to foreign countries is ever increasing and a survey by Mercer indicated that seven out of ten surveyed multinational employers (70%) were expected to send more employees on short-term assignments in the next two years (O'Neill and Rossier-Renaud, 2012). A survey by Tung (1982) found that more than half of the companies in USA had failure rates of 10% -20%. Based on a survey by KPMG (2012), 55% of the respondents stated that up to 5% of assignees were recalled from the host country or dismissed because of inability to perform effectively. Malaysia is still a difficult place for expatriates to integrate (HSBC, 2012). Failure in global assignments is not only very risky but also costly (Perkins, 2006). Direct costs of expatriation may be as high as three times the domestic salary (Dowling et al., 2008). The indirect costs are harder to quantify but can be more expensive (Dowling et al., 2008).

Prior research on job performance and cultural adjustment has established that several factors such as relational skills, personality and technical skills are important predictors of expatriate success (Templer, 2010; Suutari and Brewster, 1997). Researchers have generally focused on specific issues without examining holistically the impact and relationship of expatriate emotional intelligence (EI) towards performance and cultural adjustment (e.g., Arthur and Bennet, 1995). Despite the growing interest in expatriates, several gaps remain in understanding the relationship between EI, performance and cultural adjustment. It is still not certain whether EI is a determinant of performance in the ICTs sector in Malaysia and whether there is a mediating effect of cultural adjustment in the relationship.

The expatriate population in the ICTs sector in Malaysia is worth studying because this sector is one of the national key economic sectors promoted by the Malaysian government as part of its growth strategy (Immigration in Malaysia, 2013). MSC Malaysia, through its strategic initiatives, is also striving to turn the creative multimedia industry into one of the main engines of growth for Malaysia. Large multinationals such as IBM, Dell and HP have set up their bases in Malaysia. The services sector is expected to register a growth rate of 6.9% in the next 5 years (Khuen, 2015). Malaysia is opening its market towards globalization. In 2014, MSC Malaysia recorded an increase of 9,497 jobs and the total number of jobs stood at 147,568 (MSC, 2014). However, in the ICT sector in Malaysia, the availability of innovative local talents for research and innovation activities is a major challenge and this problem is being addressed by importing foreign talents (PIKOM, 2012). Cultural adjustment in Malaysia can be challenging because Malaysia has multiple regional and local subcultures and the country consists of various races and ethnic groups (Vance and Paik, 2006). Improving the cultural awareness of expatriates is essential for organizations who want to ensure a reasonable return on their investments (Mercer, 2013)

This objective of this paper is to examine how EI can lead to successful cultural adjustment and performance of expatriates' in the ICT sector in Malaysia. A survey involving respondents from the ICT sector in Malaysia was undertaken. A clear understanding of the impact of emotional intelligence on cultural adjustment and job performance would aid decision makers

and human resource professionals in the design of appropriate human resource practices, selection mechanism and training programs.

### **Literature Review**

#### ***Job Performance***

Job performance is the most important factor that leads organizations to remain competitive (Campbell, 1990). However, despite its importance, relatively little is known about the latent structure of performance (Tubre, Arthur, Bennett, and Paul, 1996). Many authors have defined performance and the related parameters (e.g., Campbell, 1990). Campbell (1990) coming from the psychological perspective described job performance as an individual level variable. Borman and Motowidlo (1997) further classified job performance into task and contextual performance. Borman and Motowidlo (1993) stated that contextual performance is becoming increasingly important but Aguinis (2009), argued that both contextual and task performance are important. Research has also shown that expatriates performance is more complex in a global environment than a domestic one (Black Mendenhall, and Oddou, 1991; Suutari and Tahvanainen, 2002).

Based on past research, there is considerable variation in the types of criteria used in evaluating expatriate performance in global assignments (e.g., Suutari and Tahvanainen, 2002). Based on past research (e.g., Campbell, 1990; Borman and Motowidlo, 1993; Caligiuri, 1997), performance dimensions are differentiated between the contextual variables that are prosocial and the contextual variables that are managerial. The first domain proposed by Caligiuri (1997) is technical performance. As stated by Tung (1982), expatriates are sent abroad for high-level managerial jobs and for their technical skills. Expatriates holding technical positions in global assignments must also be able to manage people effectively (Tung, 1994). The second dimension stated by Caligiuri (1997) is the contextual/prosocial dimension. This dimension is important due to significant upheaval in their position where they need to be self-directed and there are more activities that are undertaken to coordinate the activities of peers and teamwork is necessary. The third dimension stated by Caligiuri (1997) is the contextual/managerial dimension. As cited by Earley and Ang (2003), contextual managerial performance includes managerial responsibilities of maintaining good working relationships among employees and representing the organization to customers and the public. The last dimension stated by Caligiuri (1997) is the expatriate specific performance.

In the ICT sector, expatriates play critical roles and their performance should be managed well and efficiently (Suutari and Tahvanainen, 2002). Managing expatriates' performance across cultural boundaries can present particular challenges and requires important considerations and competencies (Vance and Paik, 2006). There are many factors that influence expatriate job performance such as emotional intelligence, technical skills and relational skills (Templer, 2010; Aykan, 2014). Effective performance management on a global scale involves linking individual employee performance to company priorities and strategies as well as being sensitive to cross-cultural differences (Vance and Paik, 2006). Rosenzweig, Gilbert, Malnight, and Pucik (2001) pointed out that performance evaluation should be carefully targeted to the specific role and responsibility expected from the expatriate.

#### ***Cultural Adjustment***

Cultural adjustment is conceptualized as the degree of fit between the expatriate manager and the new environment in both work and non-work domains (Aycan, 1997). Such a fit is marked by reduced conflict and stress and increased effectiveness (Aycan, 1997). Expatriates' cultural adjustment to their new role and environment is of great significance, both to the organization and to the managers themselves (Katsioloudes and Hadjidakis, 2007). As stated by Solomon and Schell (2009), an expatriate cannot succeed in global business today if they do not

understand, appreciate and know how to manage across cultures. The conceptions of expatriate adjustment over time were conceived for the last decades as following a U-shaped curve (Black, 1988). The interest in cultural shock and adjustment was triggered by the Theory of Adjustment (Lysgaard, 1955) where an expatriate going to another country will take some time to adjust and therefore affect his or her performance. Research has found that most people establish patterns for their adjustment in the first six months (Draine and Hall, 2000). Dowling, Festling, and Engle (2008), stated that the U-curve is not normative where some people do not experience the U-curve and individuals can differ in the reaction to the foreign location. Research has also shown that cultural adjustment is sensitive to many stressors (Black et al., 1991; Bhaskar et al., 2005). The adjustment model proposed by Black et al., (1991) is the most influential and often-cited theoretical treatment of expatriate experiences (Bhaskar et al., 2005). Several past empirical studies have tried to identify the factors that have a positive influence on cultural adjustment (Black et al., 1991, Bhaskar et al., 2005). Factors such as past international experience (Bhaskar et al., 2005), intercultural competence (Bhawuk and Brislin, 1992), family adjustment (Rosenbusch, 2010), and awareness of and an application of cross cultural communication (Harris, Moran, and Moran, 2004) have been examined by researchers as antecedents of an expatriate's cultural adjustment in the host country. Despite the contributions of previous studies, there are still some areas of research that need to be explored to fully understand the dynamics of an expatriate's cultural adjustment (Moon, Choi, and Jung, 2012). Research has shown that getting comfortable with the local culture is essential for expatriates who want to optimize their experience working in other countries (Mercer, 2013).

### ***Emotional Intelligence (EI) and Performance***

In a foreign country, psychological stress can have pernicious effects on work performance (Bhaskar et al., 2005). In an unfamiliar environment, expatriates may find themselves in complex relations and experience problems in expressing their feelings and problems (Aykan, 2014). Such stress also affects the emotions of individuals (Aykan, 2014). Expatriates need certain personal characteristics to cope with the rigors of daily life in the foreign environments (Bhaskar et al., 2005). Personal characteristics include EI which is an increasingly popular competency and consulting tool (Mishra and Mohapatra, 2010). O'Boyle, Humphrey, Pollack, Hawver, and Story (2011) argued that there is good reason to believe that EI predicts job performance because it is likely that the ability to recognize emotions in one's self and in others contributes to effective social interaction, as does the ability to regulate one's own emotions. Emotionally intelligent expatriates are able to regulate their own emotion and the emotion of others and use emotional information in decision making to achieve creative and positive performance outcomes (Ashkanasky and Daus, 2002). Other researchers have also argued that EI is an important predictor of performance and work related outcomes (Aykan, 2014; Ashkanasy and Daus, 2005; Goleman, 1998). A number of different viewpoints and theories have emerged about what EI actually is (Neale, Spencer-Arnell, and Wilson, 2009). Researchers and scholars have argued that EI provides a foundation for emotional competencies (Goleman, 1998). Goleman (1998) argued that, in addition to intellectual or technical skills, competencies based on EI plays a strong role in performance. Goleman (1998) argued that it would be foolish to assert that good-old-fashioned IQ and technical ability are not important ingredients in strong leadership. But the recipe would not be complete without EI.

The relationship between EI and performance has received attention by researchers (Gabel, Dolan, and Cerdin, 2005; Mishra and Mohapatra, 2010). Several past researchers found a positive relationship between EI and performance (Mishra and Mohapatra, 2010; Araujo and Taylor, 2012). The findings by Gabel et al., (2005) and Aykan (2014) support the propositions

made by numerous scholars who emphasized the importance of non-technical factors in explaining the effectiveness of international adjustment. Parke, Seo, and Sherf (2015) found that emotion regulation ability enables employees to maintain higher positive affect. Similarly, in a research by Stein and Book (2011), the correlation between EI and performance in a variety of careers has ranged up to .45 attributable to EI with an average of .30. Another research by Aykan (2014) found positive relationships between the EI and contextual performance of employees. Significant correlation was found between the interpersonal emotional component and specific performance (Gabel et al., 2005). Gabel et al. (2005) also found that although technical competencies are important but EI that covers the capacities of empathy, social responsibility and social relations predict better success. Research has also shown that people who are high in EI are also more likely to perceive context-driven emotion patterns and are therefore better able to adapt to these situations than their low EI counterparts (Lillis and Tian, 2009). People who are high in EI are also more likely to perceive context-driven emotion patterns and are therefore better able to adapt (Lillis and Tian, 2009). Cherniss (2000) pointed out a person's ability to perceive, identify, and manage emotions provides the basis for the kinds of social and emotional competencies that are important for success in any job. In order to establish the relationship between emotional intelligence and performance, the following hypothesis was formulated and tested in the present study.

H1: Emotional Intelligence is positively related to performance of expatriates.

### ***Mediating role of Cultural Adjustment between Emotional Intelligence (EI) and Job Performance***

In the host country, expatriates are subjected to uncertainties and as Hofstede (1980) stated, "the forced exposure to alien cultural environment can put people under heavy stress". Based on past research, adjustment is critical for the success of expatriates and the ability to adapt was rated by the Australian managers as the most important selection criterion (Stone, 1991). Support for the relationship between adjustment and performance was found in the study by Kraimer, Wayne, and Jaworski (2001) where one of the important contributions of their study was finding a positive relationship between cultural adjustment and performance. The results of the study by Kraimer et al. (2001) provided initial evidence that expatriates who are well adjusted at work and who are comfortable interacting with host-country citizens are perceived to be higher performers by their managers on task and expatriate contextual performance, respectively. Cultural adjustment may not be a direct indicator of the level of performance but it is likely that performance is affected if the expatriate is not adjusted to living and working in the host country (Selmer, 2002). Past research has identified that maladjustment or inadequate cultural adjustment to be a determinant of low performance of expatriates (Bhaskar et al., 2005; Caligiuri 1997; Kraimer, Wayne, and Jaworski, 2001).

Based on past research, higher EI has been reported to contribute to better cultural adjustment and performance (e.g., Lii and Wong, 2008; Gullekson and Tucker, 2012; Gabel and Dolan., 2011). The results of a study by Koveshnikov, Wechtler, and Dejoux (2014) revealed a significant and positive relationship between EI and expatriates' cultural adjustment. EI enhances the expatriates self-awareness and self-management to control negative impulses and thus enable him/her to handle challenging situations more effectively (Arvil and Magnini, 2007). Research shows that an expatriate with higher EI has better emotional control and mood adjustment (Lii and Wong, 2008). Expatriates with greater emotional resilience competency possess the psychological hardiness that allows them to carry on through difficult challenges (Mendenhall, Stevens, Bird, and Oddou, 2008). Hence, it is likely that expatriates who are high in EI are selected as they are more likely to perceive context-driven emotion patterns and are

therefore better able to adapt to these situations than their low EI counterparts (Lillis and Tian, 2009). An expatriate with high EI is expected to adjust successfully and perform better. Past research revealed that EI is related to interaction adjustment following overall cross-cultural adjustment (Gabel et al., 2011). EI has been established as a predictor of intercultural growth via changes in ethnocentrism, intercultural communication apprehension and international awareness (Gullekson and Tucker, 2012). On the other hand, poor adjustment in the host country manifests itself in intentions to quit the assignment prematurely or foster other forms of input reduction (Bhaskar, et al., 2005). This point towards the importance placed on emotional competencies for achieving both cultural adjustment and performance.

Past research on global assignments reveals the growing recognition of the role played by individual factors and expatriates responses to cultural encounters (Gabel et al., 2005; Bhatti et al., 2013). Although understanding emotions and managing emotions in the workplace have always been at the core of human resource practices, but the development of research on emotional competencies in global settings is limited. Although EI is a relatively recent concept, but it has important implications for the selection and performance management of employees in organizations and this applies to expatriates (Ashkanasy and Daus, 2005). Hence, there is a need to understand and use EI in predicting job performance and cultural adjustment (Lii and Wong, 2008; Gullekson and Tucker, 2012). However, there is little research to link EI, cultural adjustment and performance. Based on the research findings discussed above and logically extending them, it is strongly believed that the relationship between emotional competencies and performance is mediated by cultural adjustment. In order to establish the relationship between EI, performance and cultural adjustment, the following hypothesis was formulated for testing in the present study.

H2: The relationship between emotional intelligence and job performance is mediated by cultural adjustment.

### Methodology and Research Design

#### *Research Design and Conceptual Framework*

This is an explanatory research to establish causal relationships between variables. The emphasis here is on studying to explain the relationships between emotional intelligence, job performance and cultural adjustment of expatriates as shown in Figure 1 below (Saunders, Lewis and Thornbill, 2009).

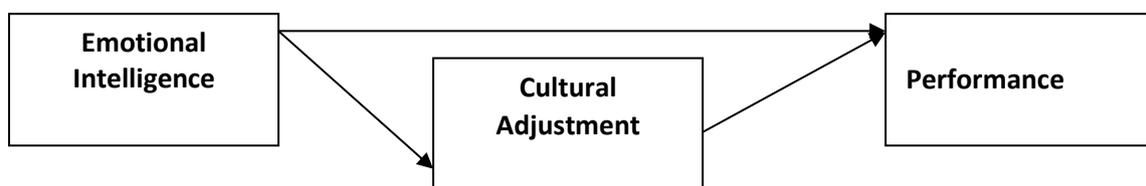


Figure 1. Relationship between emotional intelligence, job performance and cultural adjustment

This was a cross sectional research using survey where the primary purpose was to identify the relationship between the variables. Primary data was collected using a questionnaire as there is no adequate secondary data available. This is a quantitative research where self-administered questionnaires were administered electronically using the internet or delivered by hand to each respondent and collected later (Saunders, Lewis and Thornbill, 2009).

### ***Sampling Technique and Sample Size***

The target population was expatriates working in the ICT sector in Malaysia. Probability sampling method was used where a list of companies' and the population elements was prepared and used as a sampling frame based on list of expatriates provided by ICT companies and various directories of International Business Chambers of Commerce in Malaysia. Email response rates may only approximate 25% to 30% without follow-up (Sheehan, 2001). With a return rate of 30%, 900 target respondents were randomly selected. The initial response rate was low (12 percent) and friendly reminders were sent. A total of 247 questionnaires were received through mail and 71 through direct distribute and collect method. Out of the 318 questionnaires, only 301 questionnaires were usable.

### ***Instrumentation***

Self-administered questionnaire was used to collect virtually all data that was analyzed by computer (Saunders, Lewis, Thornbill, 2009). Four demographic variables (gender, marital status, age and length of stay) were included. The fixed alternative questions required the respondents to choose the best answer based on a five- point Likert-type scale. The questions for the dependent variable were adapted from the study by Caligiuri (1997). Job performance was divided into four dimensions: Contextual/Managerial Dimension, Contextual/Prosocial Dimension, Expatriate Specific Dimension and Technical Performance Dimension. The questions on emotional intelligence were adapted from the study by Goleman, Boyatzis and McKee (2002). For the mediating variable, the questions were adapted from past research by Bhaskar et al. (2005), Black et al., (1991) and Black and Stephens (1989).

### ***Reliability and Validity***

Reliability is the extent to which a variable or set of variables is consistent in what it is intended to measure (Hair, Black, Babin, Anderson and Tatham, 2006). Validity addresses whether the research measures what is said would be measured (Pallant, 2010). The Cronbach alpha coefficient for the dependent variable was 0.920 and for EI was 0.924. The Cronbach's alpha value was above 0.7 and this is considered acceptable (Pallant, 2010). Pilot testing of the questionnaire was done and this provided with some idea of the questionnaire's face validity (Saunders et al., 2009). Experts were asked to comment on the representativeness and suitability of the questions (Saunders et al., 2009). In this study, the results showed a strong correlation value of .722 and this indicates that the scale is measuring its intended concept (Hair et al., 2006).

### ***Data Analyses***

Normality testing, correlation and multiple regression analysis were undertaken. A check for violations of linearity and homoscedasticity was done (Pallant, 2010). Multiple regression analysis was used to test the hypothesis as there was a single dependent variable (Hair et al., 2006). Mediation testing was based on the steps stated by Baron and Kenny (1986). At the first step, the independent variable (IV) must significantly impact the mediating variable. In the second step, the IV must significantly impact the dependent variable (DV). In the third step, the mediating variable must significantly impact the DV. Complete mediation would occur if inclusion of the mediation variable drops the relationship between the IV and DV variable to zero (Hair et al., 2006).

### ***Discussion on Findings***

The sample of respondents included 71% (n=214) male 29% (n=87) female. The majority of the respondents, 57% (n=172) were married. The respondents age included 41% (n=123)

between the age range of 26 to 30 years, 29% (n=87) between the age range of 31 to 35 years and 3% (n=9) above the age of 45 years. The majority of the respondents, 34% (n=102) stayed for more than 3 years. The participants are come from various countries with majority 59 (19.6%) were from India, 47 (15.6%) from Europe, 51 (16.9%) from ASEAN countries, 29 (9.7%) and the rest from other countries.

As shown in Table 1, all the bivariate correlations between (IVs) and the (DV) were positive. The Pearson’s bivariate correlation showed that the correlation between the IVs and DV was supported. The correlation coefficient was high (r=.722). This represents a high positive correlation and suggests that there was a strong relationship between emotional intelligence and performance. An increase in EI will result in a high increase in the performance of expatriates. The correlation coefficient was also statistically significant at the 0.01 level (2-tailed). At the 0.01 level of significance, it means that odds in this case of a chance occurrence were very low.

Table 1. Pearson Correlation coefficient

	PER	EI	CA
PER	1.000	.722**	.628**
EI	.722**	1.000	
CA	.628**	.648**	1.000

PER=Performance; EI = Emotional Intelligence; CA= Cultural Adjustment

Table 2. Overall Model Fit

Multiple R .722
Coefficient of Determination ( <i>R square</i> ) .521
Adjusted R square .519
Standard Error of estimate 5.94994
Durbin Watson 1.806

In Table 2, the relevant values to address issues concerning both overall model fit as well as the stepwise estimation of the regression model are shown (Hair et al., 2006). An ‘R’ value of .722 indicates that the correlation between the IVs and DV is high. The coefficient of determination (R square = .521) means that 52 percent of the variance in the DV was being

Variables	Unstandardized Coefficients		Standardized Coefficients	Stat. Significance	
	B	Std. Error	Beta	t	Sig.
(Constant)	1.466	.153		9.611	.000
EI	.743	.041	.722	18.033	.000

explained by the IVs. The Adjusted R Square of .519 means that it accounted for 52% of the variance in the criterion variable even after taking into account the number of predictor variables in the model. The Durbin-Watson result is 1.806 and this indicates no problem of autocorrelation (Chinna, Karunthan and Yuen, 2013).

Table 3. Variables entered in the Regression Model

Dependent Variable: Performance

In Table 3, the standardized Beta coefficient shows the strength of relationship between an IV and DV (Hair et al., 2006). EI had a strong relationship and gave significant impact to the performance of expatriates. Based on the results shown above, hypothesis H1 was proven. Emotional Intelligence with standardized regression value of .722 is predictive and responsible for explaining the dependent variable.

Table 4. Mediation Testing

Hypothesis Regression Analysis	Analysis/Step	Relationship	R	R <sup>2</sup>	ΔR <sup>2</sup>	Beta	Sig.
H2: EI, CA and PER	Analysis-1	PER on EI	.722	.521		.722	.000
	Analysis-2	CA on EI	.648	.420		.648	.000
	Analysis-3:Step 1	PER on CA	.628	.394		.276	.000
	Analysis-3:Step 2	PER on EI	.752	.565	.171	.543	.000

Hypothesis H2 predicted that cultural adjustment would mediate the relationship between emotional intelligence and job performance. Baron and Kenny (1986) proposed four step approach in which several regression analyses were conducted and significance of the coefficients was examined at each step was done (Table 4). The regression coefficients at step two in Analysis 3 showed that emotional intelligence is significantly and positively related to expatriate performance, thus meeting the condition for mediation. The beta for controlled regulation (**path c**), which was significant in the first analysis, was now still significant when controlling for the effects of the MV. The regression coefficient was reduced at the final step, but remained significant. The change in R<sup>2</sup> for emotional intelligence was .171. This indicated that the IV explains an impact on performance even when the effects of the control variable are statistically controlled. The results of this study based on Baron and Kenny (1986) proposed series of three regressions shows that there is evidence of partial mediating effect. Hypothesis H2 was proven.

### Conclusion and Implications

The purpose of this study was to examine the role of EI on the performance of expatriates and the mediating role of cultural adjustment. The results of this study revealed that EI has an influence on performance of expatriates in the ICTs sector. The results showed that EI attribute is of high importance. Support was found for bulk of the conceptual framework and the research questions that were made in this research study. Higher levels of cultural adjustment will result in better performance through higher emotional intelligence. The findings emphasize the criticality of expatriate performance and cultural adjustment in the ICTs sector in Malaysia. Organizations can strengthen their expatriates' performance and achieve competitive advantage by developing stronger links between emotional intelligence, cultural adjustment and job performance. In general, the findings of the present study found some consistencies with results of prior studies (e.g., Mishra and Mohapatra, 2010; Gabel, Dolan, and Cerdin, 2005; Aykan, 2014). Similarly, the finding by Koveshnikov, Wechtler, and Dejoux (2014) suggests that it may be beneficial for organizations to leverage EI as a factor when selecting employees to go on international assignments.

The findings will also provide theoretical and practical implications for managing expatriates and offer an alternative viewpoint. This research helps to fill the research gaps, hence adds to the literature of expatriates performance and adjustment. This study will be one of the first studies to examine the relationships between emotional intelligence, cultural adjustment and performance of expatriates engaged in the ICTs sector in Malaysia. The evidence from this study contains implications for companies in selecting, training, motivating and providing support to expatriates. Hence, human resource managers should consider EI and cultural adjustment before engaging expatriates in the ICTs sector in Malaysia. Knowledge of Malaysian culture is also necessary and where necessary, training should be tailored based on Malaysian culture. A successful assignment starts with an appropriate selection and training of expatriates and these attributes highlighted in this study should become the key selection criteria and the content and design of the training plan. Organizations can adopt some strategies to improve cultural adjustment and performance of expatriates. Individuals can also adopt strategies to overcome stress and improve cultural adjustment and performance. The findings are also expected to assist in creating foundational solutions to support successful performance by expatriates engaged by organizations operating in the ICTs sector in Malaysia.

There are a number of limitations and issues discussed in this study. Firstly, there are other moderators and mediators such as training that should be examined in future studies. The data for this study was collected via a self-reported questionnaire that could be susceptible to bias. Expatriates who failed in their assignment or expatriates who returned pre-maturely to their home country were not included. The limitations of this study provide directions for future research. For future studies, a more in-depth research on factors that affect performance and cross cultural adjustment of expatriates can be undertaken using the qualitative approach. Similar studies in other sectors can yield further evidence and different findings. In addition, future research can include the mediating impact of organizational support strategies that include support for the expatriates families and compensation. It is also recommended that future research should include assessment from various sources that include family and peers.

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- Universiti Teknologi Malaysia, Kuala Lumpur, Malaysia*

# Playful-Consumption Experience of Videogame-Play Influences Consumer Video-Game Engagement: A Conceptual Model

Amir Zaib Abbasi\*

*Department of Management and Humanities  
Universiti Teknologi PETRONAS,  
Seri Iskandar Tronoh Malaysia  
Email: amir\_zaib\_abbasi@yahoo.co.uk*

Abu Baker Sedek Abdul Jamak

*Department of Management and Humanities  
Universiti Teknologi PETRONAS,  
Seri Iskandar Tronoh Malaysia*

## Abstract

**Purpose:** Several studies have been conducted to investigate the experience or subjective-experience of videogame-play in the context of immersion and game-engagement. But, both the concepts have been used interchangeably and have used similar dimensions to examine the subjective-experience of videogame-play or players' engagement. However, the present study aims to propose a conceptual model on the basis of hedonic consumption experience and consumer video-game engagement.

**Design/methodology/approach:** This study has employed a literature review approach in which the author of the present study has conducted an in-depth literature review and developed a conceptual model.

**Findings:** The study conceptual model suggests that consumers first consume the videogame product in the form of "playful-consumption" and gain experience from their playful-consumption of a videogame which further influences consumers to get engaged in videogame playing.

**Research limitations/implications:** This study warrants future study to validate the study proposition and empirically test the conceptual model.

**Originality/value:** This study is first to contribute in the field of consumer and marketing research, especially in videogame literature through studying the role of hedonic consumption experience as "*playful-consumption*" of a videogame in predicting consumer engagement which is conceptualized as "*consumer video-game engagement*" in this study.

**Keywords:** Experience or subjective-experience, engagement, videogames, hedonic consumption experience, playful-consumption experience, consumer engagement, consumer video-game engagement, conceptual paper.

## Introduction

The video game is one of the most prevalent, commercial and persuasive form of entertainment (Buchanan-Oliver & Seo, 2012). In 2015, Entertainment Software Association (ESA) reported that video games deliver the most value with the percentage of 47 to video-game consumers for their money followed by DVDs 28%, Movies 14% and Music 12%. This is one of the reasons that video game has become the leading form of the entertainment industry that has developed

rapidly (ESA, 2014) and video games attract millions of individuals across the globe (Abbasi, Ting, & Jamek, 2015). Recently, entertainment software association added that now all ages of people play video games irrespective of age and gender, meaning that can be your boss, grandparent, or even your institutional professor (ESA, 2014). Therefore, it has become an essential part of our routine life. With this prominent growth in video game players, the video game business has increased to \$93 billion dollars worldwide, and it is likely to touch \$111 billion dollars in 2015 (Mark D. Griffiths, 2014). Video games now can be played online as well as offline on dedicated gaming consoles, computers, smartphones, and wireless devices.

According to Hirschman and Holbrook, video games come under the broad category of hedonic products because the consumption of such products involves emotive-responses, fantasy, fun, pleasure and multisensory attributes (Abbasi et al., 2015; Hirschman & Holbrook, 1982; Holbrook, Chestnut, Oliva, & Greenleaf, 1984). Consumers consume and use the video game products in the form of “play” on dedicated gaming devices, the internet, computers, hand-phones and wireless devices to experience the hedonic consumption value (Davis, Lang, & Gautam, 2013).

To better understand the term experience in hedonic consumption value, it is important to discuss the notable and pioneer work by (Hirschman & Holbrook, 1982) who was first highlighted the neglected aspects of consumption experience in the subject of consumption and marketing. In his work, he stated that consumer behavior is not limited to purchasing decisions but this field also includes the hedonic elements “*fun, feelings and fantasies*” that come during or after the consumption of hedonic products, which needs to be addressed separately in order to examine the consumption experience (Hirschman & Holbrook, 1982). Ever since, it has become one of the important components to understand consumer behavior. The term experience in management science is defined as “a totally personal occurrence” which is often with significant emotional importance, based on the interaction with stimuli which are in the form of products or services consumed (Lo & Wu, 2014). A study by (Holbrook, 1999), consumption experience can be attained through any activity in which consumers are looking for pleasure, fun, sensory-stimulation, arousal and fantasies.

Following this view point in context of video games, consumption experience can be attained through playing a video game because “*playing a video game is actually to experience a video game*” (Salem & Zimmerman, 2004). Such kind of video-game consumption experience further involves consumers to experience a various kind of hedonic elements associated with video-game play such as emotional-responses, imagination, pleasure, fun and multi-sensory attributes (Abbasi et al., 2015).

Few studies have conceptualized the act of consuming video games or video-game play as “*playful consumption*” because it belongs to the wide-ranging category of innately inspired consumer behavior that is performed for its own sake (Buchanan-Oliver & Seo, 2012; Holbrook et al., 1984). Such perspective of playful consumption becomes mainly important for newer forms of play facilitated by computer-mediated settings for instance videogames (Buchanan-Oliver & Seo, 2012). This phenomenon is new in video-game studies which needs to be investigated as prior studies are scant to explore the role of hedonic consumption experience or “*playful consumption*” in the context of videogames and how it further influences in predicting consumer video-game engagement.

However, several studies have attempted in video-game studies to explain and examine the notion of experience or subjective-experience in video-games. The subjective experience in videogames, has been explicated and measured through the lenses of many theoretical constructs in video-game studies such as flow and psychological-absorption by (Funk, Pasold, & Baumgardner, 2003), presence, engagement and immersion (Brown & Cairns, 2004; Ermi & Mäyrä, 2005; McMahan, 2003), game-flow (Sweetser & Wyeth, 2005), flow and immersion as

potential contributors to assess subjective experience of videogame-play (Ijsselsteijn, De Kort, Poels, Jurgelionis, & Bellotti, 2007), pleasure (Costello & Edmonds, 2009), cognitive-absorption, flow, immersion and presence used to quantify the experience of immersion (Jennett et al., 2008).

There is another concept “engagement” in videogame studies that has often been used interchangeably with immersion to measure the subjective-experience of videogame-play (Hookham, Nesbitt, & Kay-Lambkin, 2016). This has been evidenced by some prior studies by (Brockmyer et al., 2009; Procci, 2015), who have also investigated the subjective-experience or immersion in video games but they termed it as game engagement. A study by (Brockmyer et al., 2009), stated that the following dimensions such as flow, absorption, presence, and immersion are a part of overall game-engagement construct. Another subsequent study by (Procci, 2015) has revised the construct of game-engagement which was given by (Brockmyer et al., 2009). According to (Procci, 2015), flow, presence and immersion are related to the subjective-experience of videogame play as suggested by (Boyle, Connolly, Hainey, & Boyle, 2012; Brockmyer et al., 2009) but, he mentioned in his study that absorption is basically a flow so, better not to include in the construct of game-engagement. The study by (Procci, 2015) has revised the previous construct of game-engagement with a new construct as a revised model of game-engagement in which immersion, presence, flow and involvement are categorized to explain the subjective-experience of videogame-play.

To date, past studies have much debated on explaining and quantifying the subjective-experience of video games (Brown & Cairns, 2004; Ermi & Mäyrä, 2005; Ijsselsteijn et al., 2007; Jennett et al., 2008; Karolien Poels, de Kort, & Ijsselsteijn, 2007). While some other studies have labeled the term subjective-experience of video-game play as game-engagement and gave a new construct to measure players’ game engagement (Brockmyer et al., 2009; Procci, 2015). Recently a study by (Hookham et al., 2016) added that both terms “immersion and game engagement” have been used interchangeably in the following studies (Brockmyer et al., 2009; Jennett et al., 2008; Procci, 2015) to quantify the subjective-experience of video-game play. Another similarity in their studies was noticed that they used similar dimensions such as flow, immersion, absorption and presence to measure the experience of immersion in video games (Jennett et al., 2008) and to measure game-engagement in video-game play (Brockmyer et al., 2009). But the problem with these studies is; they have used the concept of immersion and game-engagement interchangeably in video games to investigate the subjective-experience of video-game play as well as to measure players’ engagement. Moreover, these studies have used similar dimensions to measure the construct.

The present study addresses this problem by following the viewpoint given by (Bowden, 2009) also cited in (Hollebeek, 2011), who has already acknowledged that it is the consumer’s experience with the product which leads consumers to ensue engagement with the product. Another subsequent study by (Malthouse & Calder, 2011) reported that engagement can arise from the experiences that are interactive and co-creative. Such interactive experiences can involve interactions with the main stimuli in form of goods or services available (Brodie, Hollebeek, Juric, & Ilic, 2011) for instance videogames as stimuli in this study, because it is a kind of human-computer facilitated interactions (Buchanan-Oliver & Seo, 2012; Burgoon et al., 1999).

From above studies, we can postulate that it is the experience which further influences consumers to get engaged in an activity. Following this viewpoint in videogame context, this study attempts to propose a unique conceptual model whereby consumers first consume a videogame product in the form of “playful-consumption” and gain experience from their consumption. After their playful-consumption experience of the videogame, consumers get further engaged into the video-game playing. This conceptual model will be very useful to

predict consumer video-game engagement that is instigated through the playful-consumption experience of a videogame.

The proposed conceptual model is new in videogame literature as well as in the field of consumer research because it aims to address the term experience in videogame studies from the context of hedonic consumption experience, which is the field of consumer research as “playful-consumption experience in videogame-play” to predict consumer video-game engagement.

## **Related Work**

### *Conceptual and Proposition Development*

*Consumption Experience:* The term experience was first introduced by (Hirschman & Holbrook, 1982) in the domain of consumption and marketing. Since then, this viewpoint has become an essential element to understand consumer behavior (Addis & Holbrook, 2001). In earlier times, the academicians of marketing and consumer field have considered the concept of consumption in the context of purchasing only like decisions to buy products and services. Holbrook and Hirschman (1982) was the first study who highlighted the experiential aspects of consumption (Hirschman & Holbrook, 1982). Therefore to completely understand the term consumption, it demands researchers to think beyond the act of purchasing the products as the mainly focus of their studies. Similarly, a study has added that researchers must investigate consumption in context of purchase, usage, and disposal (Holbrook, 1995).

Within the domain of marketing and consumer research, past studies have revealed that experiences can arise in several ways such as when customers look for products, when they actually purchase the product or get any service and when customers consume the product or service (E. Arnould, Price, & Zinkhan, 2002; Brakus & Schmitt, 2008; Holbrook, 2000). Among the various kinds of experiences, this study is mainly interested to investigate the experiences that primarily arise from the consumption of video games.

Experience occurs once consumers use or consume the product. Such consumption experiences are multi-dimensional and comprise on several hedonic factors like fantasies, fun and feelings (Hirschman & Holbrook, 1982). Most of the previous researches have conducted on understanding the hedonic consumption of skydiving (Celsi, Rose, & Leigh, 1993), museums (Joy & Sherry, 2003), river rafting (E. J. Arnould & Price, 1993), music and baseball (Holt, 1995). But prior studies on hedonic consumption in the field of consumer behavior and marketing, are still limited in their investigations to examine playful consumption of videogames that occur from the consumption experience of video game products.

However, the notion of experience has been studied in videogame literature by the following studies (Brown & Cairns, 2004; Cheng, She, & Annetta, 2015; Jennett et al., 2008). In these studies, a study by (Brown & Cairns, 2004) was the first one who qualitatively explored the term immersion based on the experiences of the video-game players. This study found that video-gamers experience different levels of engagement with a video-game such as engagement, engrossment and total immersion. The idea of immersion by (Brown & Cairns, 2004) is also slightly demonstrated by (Ermi & Mäyrä, 2005), who categorized immersion into three elements such as sensory-immersion, challenge-based immersion and imaginative-immersion. The findings of the study (Ermi & Mäyrä, 2005) overlaps with the definition of immersion given by (Brown & Cairns, 2004) as imaginative-immersion truly explains the experience video-gamers have in engrossment and total-immersion whereas, sensory-immersion and challenge-based immersion have similar kind of description as in the engagement factor of immersion in the following study (Brown & Cairns, 2004). Another study by (Jennett et al., 2008) who has also followed the concept of immersion given by (Brown &

Cairns, 2004) to further define and measure the term “immersion” quantitatively in video-games literature. In this study, authors have investigated immersion with other concepts like game-flow (Sweetser & Wyeth, 2005), cognitive-absorption (Agarwal & Karahanna, 2000) and presence (Slater, 1999) that have some association to immersion and labeled the construct as game experience questionnaire.

Despite the prior work on experience in videogame literature, past studies are still limited to investigate the role of playful-consumption experience of video-game play in predicting consumer video-game engagement. Therefore, this study aims to propose a conceptual model to examine consumer video-game engagement that is triggered through the playful-consumption experience of video game. This conceptual model is proposed on the basis of the following studies (Brodie et al., 2011; Caru & Cova, 2003; Malthouse & Calder, 2011). According to these studies; engagement is based on the previous experience that a consumer has with the product (Malthouse & Calder, 2011), engagement arises from experiences that are interactive and co-creative and a study by (Caru & Cova, 2003) added that consumption experiences offer consumers a kind of platform to get engaged physically, emotionally, spiritually, and socially in the consumption of the product like video games in order to make the playful-consumption experience meaningful. On this basis, the following study proposition is drawn as

**Proposition#1:** *Playful-consumption experience of the video-game play has a positive influence on predicting consumer video-game engagement.*

#### *Related Work on Engagement in Video Games and Customer Engagement*

According to (Jennett et al., 2008), effective video-games have notable ability to draw players’ attention in games that actually assist players to stick with the video games (Rigby & Ryan, 2011) and games, in turn, make individual’s desire to keep playing (Brown & Cairns, 2004). Such playful-consumption experience of video-games engages the players emotionally (Fullerton, 2008) which in turn leads to learning outcomes (Barab, Pettyjohn, Gresalfi, Volk, & Solomou, 2012) and behavior change (Renninger, Hidi, & Krapp, 2014). Whitton has also added that one of the most important aspects of video games is their potential to stimulate engagement (Whitton, 2010b). Therefore, it is essential to understand engagement in context of video games.

Prior studies on video games, illustrate that engagement is a multidimensional concept, which has been studied in numerous ways for instance; immersion (Adams & Rollings, 2007; Jennett et al., 2008), presence (Lombard & Ditton, 1997), flow (Chen, 2007), fun (Koster, 2005), enjoyment (K Poels, de Kort, & Ijsselstein, 2008) immersion and absorption (Calleja, 2011), flow, presence, absorption and immersion (Brockmyer et al., 2009). Several other studies have investigated engagement in context of video-games but their study viewpoints were different such as (Schoenau-Fog, 2011) explored reasons for gamers to engage in video-games, (Skoric, Teo, & Neo, 2009) investigated game-engagement with scholastic achievement and found insignificant result. A study (Brunborg et al., 2013) has investigated game-engagement as predictor of subjective psychological complaints but results were not satisfactory. Another study was conducted by (Brunborg, Mentzoni, & Frøyland, 2014) in which game-amount was considered as predictor of depression, drinking, academic achievements and conduct problems but the findings were insignificant. Previously video game addiction and video game engagement both were using interchangeably to explain the addictive behavior of game players but in recent findings, these two terms were declared as qualitatively a different phenomenon (Brunborg et al., 2013).

However, several studies have developed instruments in the field of video games in order to measure and understand engagement levels as “*gameplay subjective experience*” (Brockmyer

et al., 2009), measuring engagement while playing video games (Wiebe, Lamb, Hardy, & Sharek, 2014) and assessing video-game player’s experiences (IJsselsteijn, Poels, & De Kort, 2008). The problem with these instruments is; they are merely focusing on measuring the experiences which arise from the video-game play. Besides, studies consider such experiences as determinant of engagement. Another limitation in the previous studies, they were considering engagement as predictor of negative outcomes of video-games and video-game addiction. These limitations motivate the current study to introduce a new construct in the field of video games for measuring the consumption experience and engagement separately. As discussed earlier, this study first focuses on measuring the consumers’ playful-consumption experience of videogame-play then predicting the consumers’ engagement in playing video-games that is caused by the playful-consumption of videogame.

As added by Whitton (Whitton, 2010a), there is no single and more specific definition of engagement, and what factors contribute to the engagement and how it can be measured. This finding motivates the current study to investigate the notion of engagement from a new perspective as “the combination of both psychological and behavioral dimensions” in video games (Patterson, Yu, & De Ruyter, 2006).

From this viewpoint, this study conceptualizes the term consumer video-game engagement from the concept of consumer engagement in marketing, which defines consumer engagement as “it is a psychological state that arises from experiences with a focal product/agent/object and in a focal service relationships” (Brodie et al., 2011). Moreover, consumer engagement is a multidimensional construct, which is defined by (Aksoy et al., 2013) as “cognitive, affective and behavioral” components of consumer engagement which generates different levels of engagement intensity (Brodie et al., 2011).

Following consumer engagement definition in videogames setting, the current study aims to investigate consumer video-game engagement that originates from the playful-consumption experience of videogame-play.

**Proposed Conceptual Model:**

This conceptual model has been articulated on the basis of hedonic consumption experience and consumer video-game engagement. This model argues that consumers first consume the videogame product in the form of “play” and get an experience of the videogame-play and it is their playful-consumption experience which influences them further to get engaged into video-game playing. The concept of playful-consumption experience is derived from the work of (Holbrook et al., 1984) whereas, the notion of consumer-video engagement is conceptualized from the definition of (Brodie et al., 2011).

**HEDONIC CONSUMPTION EXPERIENCE**



Figure: 1 Proposes that video-game consumption experience influences consumer video-game engagement.

**Discussions**

The research work on measuring experience or subjective experience of videogames has considerably increased a decade ago. Some of the studies are investigating subjective

experience from the concept of immersion. While, few studies have named the subjective-experience as game-engagement to examine the players' engagement in videogames. A previous study has mentioned that the theory of immersion and game-engagement have been used interchangeably to measure the subjective-experience of video-game play. The current study reports that experience and engagement are different construct and should be treated in such manner. Therefore, this study attempts to fill a research gap in previous studies (*that quantify the subjective-experience through the concept of game-engagement and immersion*) by proposing a conceptual model on basis of hedonic consumption experience and consumer video-game engagement. According the proposed conceptual model, consumers first involve in the playful-consumption experience of video-game play then their playful-consumption experience further motivates them to get engaged in videogame playing.

### **Contribution and Future Work:**

This study contributes in the following videogame literature (Brockmyer et al., 2009; Brown & Cairns, 2004; Cheng et al., 2015; Ermi & Mäyrä, 2005; IJsselsteijn et al., 2007; Jennett et al., 2008; Karolien Poels et al., 2007; Procci, 2015) who have used the concept of immersion and game-engagement interchangeably and have used similar dimensions to investigate the subjective-experience of videogame-play or player' engagement in videogames. Because the present study addresses that experience and engagement are two separate concepts and should not be used interchangeably. Besides, the current study proposes a conceptual model which explains that it is the consumers' experience which they get from the playful-consumption of videogames that further impacts consumers to get engaged in videogame playing. In addition, this study contributes in the field of consumption and marketing in several ways for instance; investigating the hedonic consumption experience as "*playful-consumption experience*" and consumer engagement as consumer video-game engagement in video-games context. The current study is conceptual in nature that requires another subsequent study to identify the factors affecting the hedonic consumption experience and consumer video-game engagement in order to validate and test the study proposition.

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# Conceptual Understanding of Islamic Housing Loan (Bai-Bithaman Ajil): An Empirical Review

**Maran Marimuthu\***

*Department of Management and Humanities  
Universiti Teknologi PETRONAS  
Seri Iskandar, 32610 Tronoh, Perak.  
Email: [maran.marimuthu@petronas.com.my](mailto:maran.marimuthu@petronas.com.my)*

**Indraah Kolandaisamy**

*School of Business Management,  
Universiti Utara Malaysia, 06010 Sintok, Kedah.  
Email: [indra@uum.edu.my](mailto:indra@uum.edu.my)*

**Khong Yeen Lai**

*Faculty Accountancy Management,  
Universiti Tunku Abdul Rahman  
Jalan Universiti Bandar Barat, 31900, Kampar, Perak.  
Email: [khongyl@utar.edu.my](mailto:khongyl@utar.edu.my)*

*\* Corresponding author*

## Abstract

**Purpose:** This paper offers a conceptual understanding of the Islamic housing loan (Bai-Bithaman Ajil) with a special focus on the operational matters and the factors that affect the acceptance of Bai-Bithaman Ajil.

**Approach:** This paper incorporates relevant findings and issues surrounding the acceptance and implementation of the Islamic housing loan

**Findings:** This paper offer more insights on the challenges faced by Islamic banking institutions to deal with both muslim and non-muslim markets in terms of the marketability of the product especially multi-racial society.

**Keywords:** Bai-Bithaman Ajil, loan, challenges

## Introduction

Bai Bithaman Ajil (BBA) house financing is an Islamic financing concept refers to the sale of assets or goods on deferred payments at a fixed price that includes profit margin to the seller. This concept is commonly used in property or asset financing. Bai Bithaman Ajil (BBA) house financing is the popular concept in countries like Malaysia, Indonesia and Brunei. Customer identifies the asset he wants to purchase and approaches the bank for financing. Under the Bai Bithaman Ajil (BBA) house financing concept, the bank will purchase the asset at cost and sell the same to the customer at cost plus profit on deferred payment basis at the duration and price agreed by both parties payable by fixed installment. The current difference between the fixed-rate Bai Bithaman Ajil (BBA) house financing and the conventional mode is that once the profit rate is fixed in the Bai Bithaman Ajil (BBA) house financing, let say at 7% per annum, it will remain the same for the entire duration of financing. The total cost of financing is known

upfront at the time of the contract and hence there is no uncertainty or Gharar. Bai Bithaman Ajil (BBA) house financing concept enables the customers to plan their cash flow accurately since their payments would not influence by fluctuating interest rate.

On the other hand, the total cost of the property purchased is determined at the time of contract or 'aqad by applying BBA concept. There is no additional or hidden cost that will change the price of the property purchased. Customers will know exactly when the financing will end. Besides, there will be no compounding of arrears and outstanding penalty charges. Presently there is also no additional/penalty charge on outstanding miscellaneous charges

In general, Islamic banks are characterized by the following features:

1. Transactions that is free from the payment and receipt of a fixed or predetermined rate of interest
2. Transactions that are based on profit and loss sharing (PLS) arrangements where the rate of return is not fixed prior to the undertaking of the transactions
3. Business activities and investments that is undertaken on the basis of permissible activities
4. Transactions that is free from elements of gharar (unreasonable uncertainty)
5. Payment of Zakat (alms or taxes) by the bank
6. Transactions that operate through *Shariah*-compliant modes of financing. Another salient feature of Islamic banks is the requirement for the establishment of *Shariah* supervisory boards. These boards are responsible for reviewing, scrutinizing and endorsing the activities and operations of Islamic banks to ensure that their activities are in line with *Shariah* principles.

Islamic banks today represent the majority of Islamic financial institutions, which are spread worldwide. The emergence of Islamic banking was a result of a revival of interest to develop an Islamic economic system as well as the increasing demand from Muslims worldwide for products and modes of investment that are in compliance with *Shariah* principles. The pioneering establishment of Islamic banks had been the catalyst for growth and provided the foundation for the development of the Islamic financial services industry as a whole.

In the ten years since the establishment of the first private commercial bank in Dubai (1974), more than 50 interest-free banks have come into being. Though nearly all of them are in Muslim countries, there are some in Western Europe as well: in Denmark, Luxembourg, Switzerland and the UK. Many banks were established in 1983 (11) and 1984 (13). The numbers have declined considerably in the following years. As a country which population is dominated by Muslims, Malaysia was also affected by the resurgence that had taken place in the Middle East. Many parties were calling for the establishment for an Islamic bank in Malaysia. For example, in 1980, the Bumiputera Economic Congress had proposed to the Malaysian Government to allow the setting up of an Islamic bank in the country. Another effort was the setting up of the National Steering Committee in 1981 to undertake a study and make recommendations to the Government on all aspects of the setting up and operations of Islamic bank in Malaysia, including the legal, religious and operational aspects. The study concluded that the establishment of an Islamic bank in Malaysia would be a viable project from the operation and profits points of view. The conclusion marked the establishment of the first Islamic bank in Malaysia, Bank Islam Malaysia Berhad (BIMB) in July 1983, with an initial paid up capital of RM80 million.

The funding operations are broadly divided into four main types of Islamic bank accounts – current accounts, savings accounts, investment accounts and special investment accounts. These accounts are structured under various *Shariah* principles such as *Mudharabah*, *Wadiah Yad Dhamanah* (trust account), *Musharakah* and others. Apart from funding operations, Islamic banks provide financing facilities to their customers either on a short, medium or a long-term basis in accordance with the various *Shariah* principles. In general, Islamic banks'

financing activities can be divided into several types, such as project financing under the principles of *Mudharabah*, *Musharakah*, Bai-Bithaman Ajil and *Ijarah*. The reports so far received from the Islamic banks reveal that the performance of these banks has been quite satisfactory and it is hoped that they will be able to offer a much better service and reward to their clients than the competing Western banks. With the successful working of the Islamic banks, the Muslim world is again heading towards a new era of financial institutions and equitable socio-economic development. The results so far obtained from the experience of the few Islamic banks look quite baffling. Not only the new PLS accounts are improving the efficiency of capital, but are also contributing towards the betterment of the existing pattern of income distribution.

### **Past Studies**

#### ***Malaysia Dual Banking***

Islamic banking system has emerged as a competitive and a viable substitute for the conventional banking system during the last three decades. It is especially true for Muslim world where presently Islamic banking strides at two separate fronts. At one side, efforts are also underway to cover the entire financial systems in accordance to Islamic laws (*Shariah*). At the other side, separate Islamic banks are allowed to operate in parallel to conventional interest based banks. Iqbal, et al (2005) have found that Islamic banks has spread to all corners of the globe and received wide acceptance by both Muslims and non-Muslims alike. Islamic banks perform the same essential functions as banks do in the conventional system, except that the need for them to carry out their transactions in accordance with the rules and principles of Islam.

According to Iqbal and Molyneux (1995), as one of the most important players in service industry today, Islamic banking is no longer regarded as a business entity striving only to fulfill the religious obligations of the Muslim community, but more significantly, as a business that is ineluctably in need for winning over customers whilst retaining the old ones. This necessitates Islamic banks to really understand the perceptions of their customers towards them in terms of service quality and other patronage factors to secure customers' allegiance.

Bacha *et al.* (2004) state that Malaysia has a truly dual banking system with both conventional and Islamic banks operating side by side. Though each system operates theoretically within its own sphere, it is inevitable that given a common macro environment, the two systems interact. A very substantial conduit connects the two. These being the very large non-Muslim customer base even of the Islamic banking system. Given Malaysia's multi-racial profile, non-Muslim depositors/customers are indeed a very large constituency for both banking systems. The ability of non-Muslim customers/depositors to switch between the two systems means that deposit and financing rates between the systems have to be similar. In a sense, the activity of this non-Muslim customer base would act to arbitrage rate differentials and fund flows. The fact that the Islamic Banking system in Malaysia has moved away from traditional profit and loss financing like *Mudarabah* and *Musyarakah* into instruments that mimic conventional ones. *Murabaha* and Bai Bithamin Ajil (BBA) has made the interface between the systems that much easier.

According to Yakcop *et al.* (2000), in the dual banking system in Malaysia, the Islamic banking system is a full-fledged system with a large number of products, a large number of institutions and an interbank money market. The Islamic banking products offered in Malaysia's dual system are therefore much more sophisticated and cover a wider range of services than the Islamic banking products offered in the conventional plus system. Malaysia's dual system has at least two basic advantages, as follows:-

The range of Islamic banking products in a dual system tend to be wider when compared to the products in a single Islamic system, since in a dual system the Islamic banks have to, willy-nilly, provide all the services provided by the conventional banks. If they do not, then the non-Muslim clients are very likely to shift back to the conventional system. In the case of the Muslim clients, some of them may also shift back to the conventional system. And even in cases of Muslim clients who do not shift back to the conventional system, one can expect them to complain loudly on the inadequacies of the Islamic banks compared to the conventional banks. In a dual system, therefore, the Islamic banks cannot afford to be complacent, since they operate in a competitive and dynamic environment. In the single Islamic system model, on the other hand, the financial institutions would not have a similar incentive to expand the range of the Islamic banking products as the possibility of domestic customers shifting away to the conventional system does not arise.

In addition to a wider range of services, the Islamic banking products in the dual system can also be expected to have a higher level of sophistication compared to the Islamic banking products in the single Islamic system. In the international conventional banking system, innovations are the order of the day. New products come one stream very regularly. In a dual system of banking, such innovations will quickly find their way to the domestic conventional banking system. The Islamic bankers operating in the dual system would have no choice but to create similar sophisticated products on an Islamic basis. This will be an on-going process, whereby the level of sophistication in the Islamic banking system will continuously be upgraded.

Malaysia's overall strategy in the development of Islamic banking, which can be summarized as follows (Yakcob, et al., 2000)

1. The objective was a full-fledged Islamic banking system operating on a parallel basis with a full-fledged conventional system (dual banking system);
2. A step-by-step approach, in the context of an overall long term strategy;
3. A comprehensive set of Islamic banking legislation and a common Syariah Supervising Council for all Islamic banking institutions; and
4. A practical and open-minded approach in developing Islamic financial interests.

### ***Islamic Finance Fundamentals***

Islamic law on commerce is known as *fiqh al-mu`amalat*. Much of the laws, rules and interpretations of *Shariah* take into consideration issues of social justice, equitability, and fairness as well as practicality of financial transactions. In general, the *Shariah* legal maxim in relation to commercial transactions and contracts state, they are permissible unless there is a clear prohibition. In a nutshell, prohibited elements of a commercial transaction must first be removed for it to be *Shariah*-compliant.

### ***Prohibition of riba***

Kamali (2000), there are two categories of *riba* – *riba qurudh* and *riba buyu`*. *Riba qurudh*, in its application to modern financial transactions, occurs through loans. The prohibition of *riba qurudh* relates to any fixed or predetermined rate of return tied to the maturity and the amount of principal (i.e., guaranteed regardless of the performance of the investment). The general consensus among *Shariah* scholars is that *riba* covers not only usury but also the charging of “interest” as widely practiced. However, concept of *Qardh Hasan* refers to the lending activities or loans are still allowed in Islam. This type of lending is a contract of loan between two parties on the basis of social welfare or to fulfill a short-term financial need of the borrower. The amount of repayment must be equivalent to the amount borrowed. It is however legitimate for

a borrower to pay more than the amount borrowed as long as it is not stated or agreed at the point of contract.

In trading commodities of different groups and kinds, such as gold for wheat, or silver for barley; no condition is imposed and free trading can exist, whether there is equality, inequality, promptness or delay. Thus, Islam encourages the earning of profits but forbids the charging of interest. Profit symbolizes successful entrepreneurship and the creation of additional wealth through the utilization of productive assets, whereas interest is deemed as a cost that is accrued irrespective of the outcome of business operations and may not create wealth if there are business losses. Social justice under *Shariah* requires borrowers and lenders to share rewards as well as losses equitably and that the process of wealth accumulation and distribution in the economy is fair and representative of true productivity.

#### ***Prohibition of activities with elements of gharar (uncertainty)***

An element of gharar is considered a normal phenomenon in the market if it is not excessive in the contracts and where the effect on the economy and society is considered minimal. This is accepted by *Shariah* as it would be practically impossible to eradicate this element completely from the market. A large element of gharar in a commercial transaction, on the other hand, is prohibited according to *Shariah* as it may affect the legality of a transaction. Al-Qaradawi (1985) says one of the examples of gharar in the financial market is in conventional insurance. *Shariah* scholars are of the opinion that conventional insurance is not *Shariah* compliant due to the large element of gharar. This is because the policyholder enters into an agreement to pay a certain sum of premium and in turn the insurance company guarantees to pay a certain sum of compensation in the event of disaster. However, the amount of compensation that the company will pay to them is uncertain and it is also dependant on the occurrence of specific events in the future.

#### ***Prohibition of maisir (gambling) activities***

Gambling is referred to as *qimar* or *maisir* in Arabic, which means any activity that involves an arrangement between two or more parties, each of whom undertakes the risk of a loss where a loss for one means a gain for the other, as it is common for gambling activities. The gain accruing from these games is unlawful in Islam, as it diverts the player's attention from productive occupation, and amassing wealth without effort. It is considered an immoral inducement by the person involved in expecting to make a profit at the expense of another party.

In relation to the above, Muslims are also prohibited from having any affiliation to gambling activities including participating, investing or financing any businesses related to, or associated with, the gambling industry.

#### ***Prohibition of the production and sale of goods and services that are prohibited in Islam***

There are a number of drinks and foods that are prohibited in Islam such as alcoholic beverages and non-permissible food like pork. In addition, there are also prohibitions against immoral services such as pornography, prostitution, immoral entertainment and others. In this context, *Shariah* scholars are of the view that any activity relating to these products and services such as processing, producing, marketing, supplying and selling are also non permissible. Therefore, companies, which are involved in or accrue gains from business activities related to these non-permissible activities, would not be deemed as *Shariah* compliant.

#### ***Permitted involve in Al-Bai (Trade Transaction)***

***Al-Bai' Bithaman Ajil (BBA) House Financing***

BBA House Financing is an Islamic house financing facility, which is based on the Syari'ah concept of Al-Bai' Bithaman Ajil (BBA). BBA is a contract of deferred payment sale i.e. the sale of goods on deferred payment basis at an agreed selling price, which includes a profit margin agreed by both parties. Profits in this context are justified since it is derived from the buying and selling transaction as opposed to interests accruing from the principal lent out.

***Al-Ijarah Thumma Al-Bai' (AITAB) Financing***

The term "Al-Ijarah" means hire, lease or rent whereas "Al-Bai'" means purchase. Under the Syari'ah principle, Al-Ijarah Thumma Al-Bai' (AITAB) refers to two contracts undertaken separately which are; Al-Ijarah Contract (hiring); and Al-Bai' Contract (purchase)

Under the Al-Ijarah contract, the hirer (customer) hires the goods from the owner (finance company) at an agreed rental over a specified period. Upon expiry of the hiring period, the hirer enters into the Al-Bai' contract to purchase the goods from the owner at an agreed price. During the period of the agreement, the finance company owns the vehicle. Upon settlement of the hire rentals, the Purchase Agreement will be executed automatically, thus transferring the ownership of the vehicle from the finance company to the hirer. However, in the event of the customer failing to perform his obligation to service the hire rental or performs otherwise from the terms and conditions stated in the agreement, the finance company has the right to exercise reasonable actions to mitigate its losses.

***Principles for Islamic Financial Products and Services***

Kamali (2000) found that the underlying fundamentals of Islamic financial transactions form the basis of the difference between conventional and Islamic financial instruments. Modern Islamic finance began with the emergence of Islamic banking, where products and services are not based on *riba* (interest). As the industry grew, many other financial products in the insurance and capital market sectors were adapted to incorporate *Shariah* compliant aspects. Product innovation has been significant in the Islamic financial services industry over the last decade, resulting in a wide array of Islamic instruments being introduced in the market. *Shariah* compliance rules have been developed for equity, debt and securitization products and are in the process of being extended to structured products and examined for derivatives as well. Rules to determine Islamic-compliant operations have also been developed for the banking, broking, investment management and advisory services.

Islamic equity financing represents a component of the overall capital market activity. Typically, equity-financing is structured through profit-sharing contracts or *`uqud a-lisyitirak*. The two common types of equity financing instruments are *mudharabah* (profit-sharing) and *musharakah* (profit and loss sharing). Significant differences, according to Kamali (2000), however, occur in the area of debt-financing due to the fact that conventional debt-financing is essentially structured upon interest-based lending. Islamic debt-financing is structured through contemporaneous underlying contracts of exchange such as sale and purchase contracts or *`uqud al-mu'awadat*. Common *Shariah* principles that are used in Islamic debt instruments include *murabahah* (trade with mark up or cost plus), *ijarah* (lease financing), *bai` al-salam* (advance purchase), *istisna`* (purchase order) and others. Similarities with the conventional market also exist in *ijarah*, whereby *Shariah* recognizes the different types of leasing such as an operating lease and a finance lease, as long as the aim of the lease is *Shariah* compliant.

Obaidullah (2003) found that Modern banking operations involve "debt-related *riba*" prohibited by the holy Qur'an, in that they borrow and lend against certain specified – paid or

received - revenue. These operations also involve "sales-related *riba*" prohibited by the well-known ahadith. We will examine the incidence of both kinds of *riba* - relating to sales and debts - in the following sections. *Riba* exists in every debt, which carries a stipulation binding the debtor to pay to the creditor any sum of money in excess of the principal sum of the debt. When a conventional bank raises funds through deposits, the depositor is often entitled to fixed and predetermined return in the form of interest on the amount deposited. The return at times is not fixed, as in case of floating-rate deposits where the interest rate is linked to some other benchmark, such as, the London Inter-Bank Offering Rate (LIBOR) and varies over time depending upon the value of the benchmark. But under both situations, the rate of return can never be negative, the nominal value of deposits is guaranteed and the depositor is entitled to an amount in excess of the amount deposited. Hence, the conventional deposits, which constitute the most important source of funds for a modern bank, involve debt-related *riba*. Banks also borrow from other sources, such as, the central bank or the inter-bank money market for raising funds. All such contracts requiring interest payments clearly involve *riba*. When banks invest, their investments are again primarily in the form of loans which involve interest payments over and above the loan amount and hence, clearly involve *riba*.

Mohammed Obaidullah (2003) also found that several bank investment, services and product which are involve *riba* as below:

- **Deposits**

Deposits in common parlance are backed by the motive of safekeeping. Islamic law also deals with the notion of deposits in the framework of *amana*. However, bank deposits cannot be put into this category, since a bank invites and seeks deposits for its own interests. The banks' intention while accepting currencies as deposits is not the safekeeping but the utilization thereof, and, on demand, to return it in full. The general consensus, therefore, is that where the deposit is a sum of money or something, which is perishable through use, shall be deemed to be a loan if the depository is permitted to utilize it. And if it is clear that a bank deposit is a loan, it means that any increase paid by the bank over the sum deposited constitutes *riba*. As discussed above, conventional banks broadly invite: current account deposits, time deposits, and savings deposits. To the extent that these do not involve interest payments, such as the current account deposits, these may be Islamically acceptable. The latter are for obvious reasons unIslamic and not permissible. It may be noted here that Islamic deposits may be modeled after the classical contracts of *al-wadiah* and *qard*. These contracts do not allow any excess over and above the principal either as a stipulation in the contract or even as a unilateral gift by the bank that is not customary. If Islamic banks routinely announce a return as a "gift" for the account holder or offer other advantages in the form of services for attracting deposits, this would clearly permit entry of *riba* through the back door. Unfortunately, many Islamic banks seem to be doing precisely the same as part of their marketing strategy to attract deposits. We will discuss more about this in a subsequent section

- **Loans**

Direct loans may take the form of a simple loan of a definite amount repayable after a known maturity or time period. These loans involve payment of interest by the user of funds and hence, clearly involve *riba*. Loans may also take a different form as opening a credit or overdraft facility under which the user may draw an amount from the bank, which varies from time to time subject to an overall maximum limit. The opening of a credit facility, therefore, is represented in a contract concluded by a bank and a customer pursuant to which the bank undertakes to place a certain sum at the disposal of the customer during specified period of time. What is more important to note in this contract is that it is 'promise of a loan' and is binding. While there may be divergent views on whether a promise is binding on a promisor,

the fact that the promise involves a stipulated return on the loan in future indicates presence of *riba* and hence, makes the product unIslamic.

### ***Mudharabah* (Profit-sharing)**

Kamali (2000) states one of the most important *Shariah* principles for investment activities is *mudharabah*, also known as qirad or muqaradah. It offers the owner of capital the opportunity to invest his capital in a certain project without becoming involved in managing that capital, and limits his liabilities to the capital committed. There is also an entrepreneur, who solely manages the projects. The most important feature of *mudharabah* is that the capital provider cannot claim a fixed profit and an assured return of his capital if the project is profitable, as the profit will be distributed based on a pre-agreed ratio between the capital provider and the entrepreneur. In the event of a business loss, it shall be borne solely by the capital provider and none on the part of the entrepreneur, unless the loss is due to negligence of the entrepreneur.

In addition, *Shariah* scholars have evolved the *mudharabah* principle further by introducing a “two-tier *mudharabah*.” The first tier *mudharabah* is created when the investor or capital provider places his capital with an Islamic financial institution which acts as the entrepreneur. The financial institution in turn invests the capital with another entrepreneur by means of a second-tier *mudharabah*. In other words, by using this type of *mudharabah*, an Islamic financial institution can act as an intermediary between investors and entrepreneurs.

Sarker (2001) argues that the *Mudarabah* is mean Profit sharing principle for Islamic business contracts is based on the *Mudarabah* principle in which the owner of the capital provides funds to the capital-user or entrepreneur for some business or productive activity on the condition that profits generated will be shared between them. The loss, if any, incurred in the normal process or course of business and not due to neglect or misconduct on the part of the entrepreneur is borne by the capital-owner. The entrepreneur does not invest anything in the business except his human capital and does not claim any wage for conducting the business. The ratio in which the profits are distributed is ex-ante. In the event of loss, the capital provider loses his capital to the extent of his loss, and entrepreneur loses all his labors. The willingness to bear the loss justifies a share in the profit for the capital-owner. The profit sharing ratio mutually agreed upon between finance-provider and finance-user is determined by the market forces (Siddiqui, 1987). The finance-user guarantees to return funds only on two conditions which is if he negligent in the use of the funds or if he breaches the conditions of *mudarabah* (Iqbal and Mirakhor, 1987).

Sarker (2001) found that the *mudarabah* has been Classification or types of *Mudarabah* to the two main types of *mudarabah* which are Restricted and unrestricted *mudarabah*. The first type of the *mudarabah* is Restricted *Mudarabah* which is the capital owner asks the working partner to trade by his capital subject to certain restrictions related to the type of commodity that is to be traded, the time of trade, the place of trading or the person with whom the working partner should trade. The restrictions related to time or persons are approved in both the Hanbali and Hanafi Schools but not approved in Shafi and Maliki Schools. The second type of *mudarabah* is Unrestricted *Mudarabah* which is, the working partner or *mudarib* can trade in any commodity (that is legitimate), with any persons whom he deems appropriate without being restricted to certain period of time or place.

Macfarlane (2006) found that the *Mudarabah* is the installment payment goes toward the final purchase (with the transfer of ownership to the lessee), By either party and Identical to an investment fund in which managers handle a pool of funds. The agent-manager has relatively limited liability while having sufficient incentives to perform. The bank acts as a partner, providing cash to the borrower and sharing in the net profits and net losses of the business. The loan is for an undetermined period, although the contract may be rescinded another important

instrument, accounting for about 10 % of Islamic financial transactions, is leasing. Leasing is designed for financing vehicles, machinery, equipment, and aircraft. The bank purchases a piece of equipment and rents it to the business. Alternatively, with hire purchase contracts, the business partly purchases and partly rents the equipment. Different forms of leasing are permissible, including leases where a portion.

### ***Musharakah* (Profit and Loss Sharing)**

Kamali (2000) found that *Musharakah* is analogous to a joint venture. Both the entrepreneur and investor contribute to the capital (assets, technical and managerial expertise, working capital, etc.) of the operation in varying degrees and agree to share the returns, as well as the risks, in proportions agreed to in advance.

*Shariah* scholars have developed the *musharakah* principle further by introducing diminishing *musharakah* (or *musharakah mutanaqisah*), as a newly developed financial contract. Under this contract, the financial institution and client share the ownership of the financed asset. The periodic payment of the client contains two parts; a rental payment for the part of the property owned by the Islamic financial institution and a buy-out of part of that ownership. Over time, the portion of the asset owned by the client increases, until he owns the entire asset and the contract is eventually terminated.

Najjar (1963) found that *Musharakah* is the Islamic banks lend their money to companies by issuing floating rate interest loans. The floating rate of interest is pegged to the company's individual rate of return. Thus the bank's profit on the loan is equal to a certain percentage of the company's profits. Once the principal amount of the loan is repaid, the profit-sharing arrangement is concluded.

Macfarlane (2006) found that the *Musharakah* is analogous to the classic joint venture. Both entrepreneur and investor contribute to the capital (assets, technical and managerial expertise, working capital, etc.) of the operation in varying degrees and agree to share the returns (as well as the risks) in proportion to their involvement. Traditionally, this form of transaction has been used for financing fixed assets and working capital of medium and long-term duration. The bank provides part of the equity and part of the working capital for the business, and shares in profits and/or losses.

### **Murabahah**

Kamali (2000), one of the most widely used instruments for short-term financing is based on the traditional notion of purchase finance. In this sale, the buyer (client) knows the price at which the seller obtains the object to be financed, and agrees to pay a premium over the initial price. It is an agreement that refers to the sale and purchase transaction for the financing of an asset or project, whereby the costs and profit margin (mark-up) are made known and agreed to by all parties involved. As practiced in the market for *murabahah* arrangements, the financier undertakes to buy the asset required by the client for resale to the client at a higher price as agreed upon by both parties and this can be settled in cash or in installments as specified in the agreement.

Najjar (1963) found that *Murabahah* is in an Islamic Mortgage transaction, instead of loaning the buyer money to purchase the item, a bank might buy the item itself from the seller, and resell it to the buyer at a profit, while allowing the buyer to pay the bank in installments. However, the fact that it is profit cannot be made explicit and therefore there are no additional penalties for late payment. In order to protect itself against default, the bank asks for strict collateral. The goods or land is registered to the name of the buyer from the start of the transaction.

Sarker (2001), argues that the *Muharabah* is a cost plus contract in which one party wishing to purchase equipment or goods and commodities approaches other party to purchase those items

and sell to him at cost plus a declared profit. By this method of contract, a party needing finance to purchase business machinery or equipment gets the necessary finance on deferred payment basis. Farmers may also get various inputs and agricultural implements from the bank on a deferred payment basis.

***Bai-Bithaman Ajil (Deferred-payment sale)***

Bai-Bithaman Ajil has similar features as *murahabah* in term of the financier undertaking to buy the asset required for resale to the client at a higher price as agreed to by the parties involved. According to Mohammad Hashim Kamali (2000), the difference with *murahabah* is that *bai bithaman ajil* is used for long term financing and the seller is not required to disclose the profit margin which is included in the selling price.

***Bai` al- salam (Advance purchase)***

According to Mohammad Hashim Kamali (2000), in modern Islamic finance, *Shariah* scholars have allowed parallel salam or back to back salam contracts, whereby the financier will play a dual role. On one hand the financier is the seller in one salam purchase agreement and on the other hand he becomes a customer by entering into a separate independent salam agreement in order to acquire salam goods of a similar specification. The most important thing in the parallel salam is to distinguish the contracts as two separate deals of salam.

***Istisna` (Purchase order)***

Kamali (2000) states that *Istisna* is a sale and purchase agreement whereby the seller undertakes to manufacture or construct according to the specifications given in the agreement. It is similar to *bai` salam*, the main distinction being the nature of the asset and method of payment. *Istisna`* generally covers those things which are customarily made to order and advance payment of money is not necessary as required in *bai` salam*. The method of payment in *istisna`* is flexible, according to the terms as agreed to by the contracting parties. Parallel *istisna`* or back to back *istisna`* contracts is also permissible, similar to that of parallel salam, whereby the financier will play a dual role – i.e., he is the contractor in one *istisna`* purchase agreement but he becomes a customer in the other separate, independent *istisna`* sale agreement

According to Sarker (2001), argues that *Istisna* is a contract of acquisition of goods by specification or order where the price is paid progressively in accordance with the progress of a job. An example would be for the purchase of a house to be constructed, payments are made to the developer or builder according to the stage of work completed. *Istisna* contract opens the way to a number of new possibilities of business contracts including some forms of futures contract trading of processed commodities, as it permits deferring of both ends of the contract: delivery as well as payment.

Macfarlane (2006) found that the *istina* is a contract whereby a party undertakes to produce a specific thing that is possible to be made according to certain agreed specifications at a determined price and for a fixed date of delivery'. In such a transaction, a financier may undertake to manufacture an asset and sell it on receipt of instalment payments. The buyer is charged by the bank for the price it pays the manufacturer plus a reasonable profit. In this scenario the bank takes on the risk of the manufacture of the asset.

***Ijarah***

According to Kamali (2000), another popular instrument is leasing which is designed for financing an asset or equipment. It is a *manfaah* (benefit) or the right to use the asset or equipment. The lessor leases out an asset or equipment to the client at an agreed rental fee for a pre-determined period pursuant to the contract. Different forms of leasing are permissible,

including leases where a portion of the installment payment goes toward the final purchase at the end of the leasing period whereby the ownership of the asset or equipment will be transferred to the lessee through a sale and purchase contract. It is considered as Islamic hire-purchase or Islamic finance leasing and also known as *ijarah* thumma bai` or *ijarah wa iqtina`* or *ijarah* muntahiyah bi tamlik.

Najjar (1963) argues that the *Ijarah* is which is similar to real-estate leasing. Islamic banks handle loans for vehicles in a similar way (selling the vehicle at a higher-than-market price to the debtor and then retaining ownership of the vehicle until the loan is paid).

Sarker (2001) found that the *Ijarah* is an individual short of funds may approach another with a surplus (the other party or financier) to fund the purchase of a productive asset and renting that to him on rent-payment basis. If the title of the asset is fully transferred to the user at the end of the period, i.e., lessee become the owner of the asset, then it will be called Hire Purchase or *Ijarah wa Iqtana*.

Macfarlane (2006) found that the *Ijarah* is another important instrument, accounting for about 10 % of Islamic financial transactions, is leasing. Leasing is designed for financing vehicles, machinery, equipment, and aircraft. The bank purchases a piece of equipment and rents it to the business. Alternatively, with hire purchase contracts, the business partly purchases and partly rents the equipment. Different forms of leasing are permissible, including leases where a portion of the installment payment goes toward the final purchase (with the transfer of ownership to the lessee).

### ***Bai-Bithaman Ajil***

Bai-Bithaman Ajil (deferred payment sale), refers to the sale of goods on a deferred payment basis at a price, which includes a profit margin agreed to by both parties. Al Bai-Bithaman Ajil <sup>2</sup> means a "deferred payment sale". It is a mode of Islamic financing used for property, vehicle, as well as financing of other consumer goods. Technically, this financing facility is based on the activities of buying and selling. The furniture that you wish to purchase for example, are bought by the bank and sold to you at an agreed to price, after the bank and you determine the tenure and the manner of the installments. The price at which the bank sells you the furniture will include the actual cost of the furniture and will also incorporate the bank's profit margin. There is no interest charged and the extra price compensates the bank for its profit. Installments remain fixed over the period of the contract and no adjustment is made if interest rates fluctuate. The fixed monthly installments are determined by the selling price, repayment period and the percentage margin of financing.

Therefore, Bai-Bithaman Ajil is known as Bai Muajjal. Bai-Bithaman Ajil refers to the sale of goods on a deferred payment basis. The bank will purchase the assets that are requested by a client and subsequently sell the goods to the client at an agreed price, which includes the bank's mark up (profit). The client may pay by installment within a pre-agreed period, or in a lump sum. Although house and commercial property financing are common examples, cars, machinery or any other assets can be financed under this concept. Bai-Bithaman Ajil house financing is an Islamic house financing facility. The main characteristics of a Bai-Bithaman Ajil house financing are all the components to determine the selling price. It has to be fixed because the selling price has to be fixed at the time the contract is made. Hence, the profit rate for Bai-Bithaman Ajil financing is fixed throughout the period of financing.

The advantages of Bai-Bithaman Ajil house financing are the total cost of the property purchased is determined at the time of contract or 'aqad. There is no additional or "hidden" cost that will change the price of the property purchased and the transaction is transparent. Besides, there is no element of uncertainties or Gharar. Customers will know exactly when the financing will end. Furthermore, there will be no compounding of arrears and outstanding penalty

charges. Presently there is no additional/penalty charge on outstanding miscellaneous charges. Repayment is not subjected to fluctuation of based lending rate and it allows for better financial planning. The Bai-Bithaman Ajil is basically a sale contract which provides the buyer the benefit of a deferred payment, whereby the deferred price of the sale object carries an additional profit. It is an extension of the murabahah (cost plus) contract, whereby the commodity exchanged is “delivered” immediately but the sale price (with profit) is paid in installments, over a long period (the murabahah itself being generally for short periods). While the Bai-Bithaman Ajil is widely used in Malaysia, Indonesia, Brunei and few other countries, it has been subjected too much controversy among the *fuqaha* worldwide with regards to its permissibility; where most of the Middle East scholars have rejected it.

In the conventional system, home financing is, of course, usually interest-based and is forbidden in Islam. From the Holy Quran, instead of charging the customer interest, financiers charge a profit derived through a buy-and-sell contract which is permitted in Islam. Yaquby and Usmani (1998) found that the profit rate is dependent on the market interest rate due to arbitrage activities. Therefore, while the Bai-Bithaman Ajil is practiced as *Shariah* compliant in some countries, it is, nonetheless, converging to the conventional mode where the computational formulas are similar to the conventional and where the profit rate tracks the market interest rate.

The current difference between the fixed-rate Bai-Bithaman Ajil and the conventional mode is that once the profit rate is fixed in the BBA, say at 7% per annum, it will remain the same for the entire duration of financing. This, in fact, causes problems for the financiers as it is difficult to estimate accurately the cost of funds and hence the appropriate profit rate over long periods like 20 years, due to the volatility of economic conditions. This encourages customers to refinance their home from Bai-Bithaman Ajil to conventional during low interest periods and vice versa.

### ***Operational issues***

Bai-Bithaman Ajil is a facility provided by the financier to assist the customer pay the cost of financing, e.g. a house, over the tenor of financing, e.g. 20 years, at a fixed rate determined by the financier. The financier initially buys the house from the customer (cost of financing amount) and sells it back to the customer, plus of its profit margin. Meera and Larbani (2004) and Rosly (2005) found that as the seller of the property, the *Shari'ah* requires the bank to hold ownership of the property and to hold all liabilities arising, including defects. But currently, BBA documentations show that the bank merely acts as a financier rather than a seller and excludes itself of all liabilities. This, of course, ignores the *Shari'ah* principle of “*al-Ghorm bil Ghonm*” (no reward without risk), “*Ikhtiar*” (value-addition or effort) and “*al-Kharaj bil Daman*” (any benefit must be accompanied with liability), thereby rendering the BBA profit to be implicated with *riba*.

The issue of concern here is that the availability of *iwad* (counter value) in BBA financing. the Qur'an uses trade (*al-bay*) because the profit generated from trading incorporates risk-taking, while the contractual profit from loan transactions (*riba*) is risk-free. It further asserts that *al-bay* implies the existence of *iwad* required by the *Shari'ah* to be a lawful profit in Islam. Three elements of *iwad* that should exist are risk (*ghorm*), work and effort (*ikhtiar*) and liability (*daman*). There is no risk taking in the current BBA financing. *Daman* (liability) should also exist in a trading transaction whereby the supplier provides guarantees on the goods sold. However in the current BBA home financing, the customer is forced to face the burden of financial payment for the house even before it is completed, as he has engaged in a ‘debt contract’ with the bank at the outset. By ignoring the concept of *iwad*, the BBA contract is not seen as conforming to the *maqasid al-Shari'ah* that removes hardship (*raf' al-haraj*) and

preventing harm (*daf' al-darar*) in the economic sphere, thereby leaving the welfare of people unprotected – a possible crime when the transaction is done under an Islamic label. (Rosly, 2005). Another issue that arises from the long-term BBA financing is the mismatching of the BBA funds against its short-term deposit tenor. Whilst conventional financing has the ability to address this mismatch in the cost of funds through the variable interest rate (BLR + a spread), BBA financing cannot do this since customers are charged a fixed profit rate for the entire period of financing.

### ***Challenges faced by Bai-Bithaman***

- ***Demographic***

Demographics can be grouped of the variables such as age, gender, income, education level, religion, occupations and so on. Demographic variables are often associated with customer needs and wants, preferences and usage rate. Metawa and Almosawi (1998), well-educated customers tend to put more emphasis Islamic principles in selecting their banks than those customers in the other educational groups. Well educated non-Muslims might be more open minded thus the level of acceptance of those non-Muslims would be higher. Non-Muslims are more aware and understanding about the BBA house financing concept with their well educational background. Therefore, they are easier in acceptance of Bai-Bithaman Ajil house financing. Dusuki and Abdullah (2006), religion perceived as an important role when selecting Islamic banking as alternative services. Naser, Jamal and Al-Khatib (1999), also concluded that religion is a very important reason for people to select Islamic banks. Rodney (1998) argues that clients in most Muslim countries have a free choice whether to use conventional or Islamic banks, but large numbers have chosen the latter because of their religious convictions. Religion is one of the factors that influencing level of acceptance of non-Muslims toward Islamic banking products. Non-Muslims might have prejudice or misunderstood toward Islamic banking products. They might think that BBA house financing concept is only suitable for Muslims. Thus, the level of awareness, understanding and acceptance of non-Muslims toward BBA house financing might be low.

- ***Behavior***

Lancaster (2003) defined that consumer behavior can be formally defined as: the acts of individuals directly involved in obtaining and using economic goods and services, including the decision processes that precede and determine these acts. Individuals are different in terms of how they look, their education, their feelings and their responses to marketing efforts. Some will behave predictably and others less predictably according to an individual's personality. The individual consumer absorbs information and develops attitudes and perceptions. Lancaster (2003) says personality and self-concept also is one of the factors that influence the customer's behavior. It means that how we think other people see us, and how we see ourselves. Self is influenced by social interaction and people make purchases that are consistent with their self-concept in order to protect and enhance it. Personality is the principal component of the self-concept. It has a strong effect upon buyer behavior. Many purchase decisions are likely to reflect personality, and marketers must consider personality when making marketing appeals.

Perception by the buyer is affected by the nature of the product itself, by the circumstances of the individual buyer, and by the buyer's innate situation in terms of how ready they are to make the purchase in terms of needing it at a particular point in time. On the other hand, attitudes will influence the customer's behavior. The sum total of attitudes can be regarded as a set of cognitions that a potential buyer has in relation to a potential purchase or a purchasing environment. Although nowadays most of the banks include foreign banks which are launching Islamic banking products, but Islamic products are still new to non-Muslims. The awareness

of Non-Muslims about Islamic product is lower. Researchers need to educate towards Islamic banking products to create greater and increase awareness among non-Muslims. One of the popular ways to increase awareness among non-Muslims is advertising. The popular theory used by advertiser is the AIDA model. The AIDA model, hypothesizes that attention, interest, desire, and action are the most important responses consumers might make to advertising with attention being the initial response and action being the last. George (2005) stated that the AIDA model is advertising agency should know how to draw attention of a buyer to get the customer interested by exhibiting its advantages, benefits and features. Interest is followed by desire. It is advertising agency's duty to create a desire in a buyer to buy a specific product. All three steps of the AIDA policy will help to stimulate the action towards the purchase of a product. AIDA theory guides and leads to build a better advertising business. BIG B's of advertising world have followed AIDA to generate good advertisement campaigns.

Perception relates to the meaning that is assigned to that stimulus. The first step in perception is simple exposure. When something has been perceived, the message has been memorized in people's brains. Once a message has been perceived and has caught target's attention, perceptual process can move on to the next step, which is awareness of the message and the product. Awareness implies that the message has made an impression on the viewer or reader, who can subsequently identify the advertiser. Being aware of the message is not enough. The message must be understood as well. Understanding refers to conscious mental effort to make sense of the information being presented. After consumers perceive about something, then they form an opinion or attitude about it, then understand, and finally they take action and try it or buy it. Anderson et al. (1976) found that used "determinant attribute analysis" in a survey in the USA and stratified their samples according to convenience and services. Based on 15 selection criteria, convenience customers selected "recommendation by friends" as the most important factor. Tan and Chua (1986) found that advice of friends, neighbours and family members has a stronger influence on customers' decisions, compared with other variables in selecting financial institutions. This finding is consistent with the ethos of oriental culture which emphasizes social and family ties. Haron and Planisek (1994) found that profits and religion are the main motives behind depositing money with Islamic banks in Malaysia. They observed that only 40% of the Muslim customers give preferences to Islamic Banking. The remaining majority including non-Muslim customers considers the time value as more important. They expect their banking transactions to be completed as fast as possible.

### ***Knowledge***

Saleh (2005) found that the level of acceptance by non-Muslims is influenced by their knowledge on BBA house financing. "Syariah Knowledge Bank of Information" is known as the knowledge of the principles in any transaction or deal prepared or completed at the Islamic Bank. The Syariah knowledge can be a real source of Islamic Banking Practice which acts as learning and training hub for the bank employees and the customers. The research done by Sudin, Norafifah and Planisek (1994) shown that almost 100 per cent of Muslims and 75 per cent of non-Muslims were aware of the existence of the Islamic bank. Although Malaysia is a Muslim country, but only 12 per cent of the Muslims and 32 percent of the non-Muslims believe that the Islamic bank is for Muslims customers only. Other sources of information are not so effective for the non-Muslims. Even though it has been nearly a decade since the Islamic bank was first established in the country, only about 63 per cent of the Muslims have understood either partly, or completely, the differences between the Islamic bank and conventional banks. Non-Muslims showed much less understanding. In terms of why people patronized the Islamic bank, about 39 per cent of the Muslim respondents believe that religion is the only reason why people patronize the Islamic bank, and, surprisingly, the percentage is

much lower for non-Muslims. More than half of both respondent groups have indicated the possibility of establishing a relationship with the Islamic bank if they have a complete understanding about the operations of an Islamic bank.

Haron and Planisek (1994) also found that more than half of the Muslim and non-Muslim respondents indicated the possibility of establishing relationships with the Islamic banks if they have a complete understanding about their operations. The authors remarked that the top management of Islamic banks should realize the needs of time value of money and do not solely depend upon Muslims for deposits or as their fund users. They have to expand their base by including non-Muslims as potential customers. Husain (2002) stated that one of the major difficulties in moving to Islamic banking operations has been the general lack of awareness and education about the concept of Islamic finance and the expertise required for conducting operations in line with the dictates of *Shariah*. A wrong notion appears to occupy peoples' mind that Islamic banking means money becoming available free of any return. There are others who understand the true import/concepts but do not have adequate knowledge of products and services that Islamic banks can offer in a competitive environment. Limited knowledge and understanding will directly influence the level of awareness by non-Muslims toward Bai-Bithaman Ajil house financing. Non-Muslims do not get the information regarding BBA house financing thus they do not realize the existence of the Islamic bank. Therefore, they will not choosing any product of Islamic bank. Furthermore, the understanding of BBA house financing concept is an important factor to attract the interested of non-Muslims in choosing this product. With limited information, knowledge and understanding, non-Muslims would not feel confident in choosing BBA house financing. Therefore, knowledge becomes an important factor that influences the readiness of non-Muslims to accept Islamic banking products.

### ***Loyalty***

Anderson et al. (1976) found that used "determinant attribute analysis" in a survey in the USA and stratified their samples according to convenience and services. Based on 15 selection criteria, convenience customers selected "recommendation by friends" as the most important factor, followed by "location", "reputation", "service charges" and "friendliness of bank staff". The service customers ranked "availability of credit" as the most important factor, followed by "reputation", "recommendation by friends", "friendliness of staff" and "interest charged on loans". Rodney (1998), the names and reputations of the scholars on the *shariah* boards seems to be one factor influencing client choice, especially initially when Islamic banks first open, but over time, as the banks have established reputations as solid financial institutions, name and brand image have become important. The number of major multinational banks offering Islamic financing facilities demonstrates the viability of Islamic finance. HSBC, ABN-AMRO, Deutsche Bank, Citibank and Arab multinationals such as the Arab Banking Corporation all offer Islamic financing products. Their financial resources and brand strength helps ensure that Islamic finance becomes better known to the global financial community. At the same time this competition poses a challenge to the dedicated Islamic banks, with fewer resources and more limited global reach.

Brand name is an important factor that affects the level of awareness by non-Muslims toward Bai-Bithaman Ajil house financing. Customers are more confident to apply BBA house financing which is offering by Islamic Banking if they found that Islamic Banking is a well-known bank and its products are reliable. Reputation is a factor that attracts customers in choosing BBA house financing. Warren (2001), the conventional banks will see Islamic banks as a threat as Islamic Banks grow quickly. The large international global brand names are not known for innovation. They are known for responding to new products and services. It is the small, lean and new institutions that usually create new products and innovative services.

However, once a new product or service is perceived as a threat to conventional businesses, they will respond by providing a competing product and then take over. But at end of the day, the international brand name banks with good ratings will have the edge. Besides, in Malaysia, a majority of Muslim retail clients are still prepared to use conventional products and they don't go to a brand name bank asking for Islamic banking services. Clients worldwide would rather go to a brand name with ratings, and that provides appropriate service, regardless of whether it's Islamic or otherwise. But given a choice between a pure Islamic bank and a highly rated reputable international bank providing the same service, a client would rather go to the one that has a brand name than the one that provides Islamic-only services, without the brand name. To create a brand name is very difficult. It's important to have a first mover advantage. Even from the start of Internet banking two years ago till now, only a handful have made their name at the initial level, and those that have made it are not pure start-up companies but part of a solid company. Subkhan (2005) says loyal customers are those who have the enthusiasm about the brands or products they use. The more enthusiastic a customer is, the higher the profit contributed to the brand. The customers of Islamic (*Shariah*) Banking put more confidence in certain banks due to the halalness of their services even when the quality is below the standards of other (conventional) banks. The emotional and spiritual bonds formed between a customer and a bank is a form of customer enthusiasm which can be made a yardstick to measure his loyalty to the bank. The more loyal a customer of a bank is, the bigger his contribution is to the bank's profits.

### **Conclusion**

This paper has highlighted the differences between conventional and Islamic housing loans where their great advantages that can be offered to both muslim and non-muslim markets. However, it is also important to address the issues and challenges faced by Islamic Banks in offering this kind of service as the existing market are still skeptical the extent to which this service will remain intact and sustainable for a long term. This paper also paves way for researchers to conduct empirical studies on the factors affecting the acceptance of Bai-Bithaman Ajil.

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# The Mediating Effect of Work Engagement on The Relationship Between Islamic Religiosity and Job Performance

<sup>1</sup>Novia Zahrah, <sup>2a</sup>Siti Norasyikin Binti Abdul Hamid, <sup>2b</sup>Shamsul Huda Binti Abdul Rani, and <sup>2c</sup>Bidayatul Akmal Binti Mustafa Kamil

<sup>1</sup>Othman Yeop Abdullah Graduate School of Business

<sup>2a,b,c</sup> School of Business Management

Universiti Utara Malaysia (UUM)

Kedah, Malaysia

Email:

<sup>1</sup>oviasah@ymail.com

<sup>2a,b,c</sup> {norasyikin, shuda, bidayatul}@uum.edu.my

## Abstract

The issues regarding job performance as well as work engagement have been widely discussed, yet surprisingly little research from an Islamic perspective conducted, especially Islamic religiosity and spirituality. Whereas, job performance and engagement of a Muslim should be examined based on Islamic perspective in order to sustain the productivity. Islam obligates all Muslim to perform the trust (amanah) given and work as a form of worship. While in dealing with difficulties, a Muslim is obligated to be patient, self-control, tawakal (trust) to Allah's will, and believe that there is great wisdom behind everything that Allah does. These obligations can be fulfilled through the great awareness of Islamic religiosity. In fulfilling these obligations, the individual will put the best effort to engage and simultaneously perform well in their work. Therefore, in response to the impact of Islamic religiosity in enhancing work engagement towards sustaining job performance, this paper discussed this relationship empirically. Smart-PLS have been used as analytical tool. The data analysis results from a questionnaire survey on 150 Muslim employees indicates the significance of the proposed model. Future researchers are expected to study the issues in the workplace from Islamic perspective, such as Islamic job performance, Islamic work engagement, and so forth.

**Keywords:** Job Performance, Work Engagement, Islamic Religiosity

## INTRODUCTION

Outstanding job performance becomes crucial element for an organization [1] to sustain its success and prosperity [2]. Therefore, there are various antecedents of job performance have been studied by numerous researchers. For instance, work ethics [3], personality [4], work engagement [5], job satisfaction [6] and so forth. However, existing concepts as aforementioned are less suitable to be used in examining the quality of Muslim's job performance. In examining the performance of Muslim employees, the evaluation should be conducted in a different way, namely by Islamic approach (Islamic religiosity). Fostering employees with Islamic approach and Islamic mindset will encourage the employees to be

aware that their main intention to work is to worship Allah and to obtain His blessing [7]. Simultaneously, this awareness will encourage the individual to perform any tasks assigned as well as possible, even they confronted with difficulties. This due to the belief that Allah will help and give blessings to his servants who are patient.

Furthermore, [8-9] stated that Muslims are obligated to work hard to provide a benefit to others and not being lazy as well as aware that Allah always sees His servants. Thus, through this belief, each of the individual will be tempted to keep *amanah* (trust) given and engaged well in their work. Meanwhile, highly engaged employees is important in order to sustain good performance of each employees and the organization itself. Similar case with job performance, the existing theories and various studies that have been conducted on work engagement [10-11] are less suitable to measure the engagement level of Muslim employees. In measuring engagement level of Muslim employees, an Islamic approach (Islamic religiosity) must be applied. On the grounds that an individual who works for the sake of worship will put extra strength to engage well and buckle down in fulfilling the tasks assigned. For that reason, this paper highlights the importance of Islamic religiosity in enhancing job performance and work engagement. At the same time, work engagement act as mediating role on the relationship between Islamic religiosity and job performance. Nonetheless, this new approach needs strong perception and a deep Islamic religiosity awareness

Briefly, this paper aims to examine the improvement of job performance through the awareness of Islamic religiosity. While as the mediating role, work engagement strengthens the relationship between Islamic religiosity and job performance. The findings of this study might contribute valuable information for future researchers on how to examine and enhance work engagement as well as job performance in an Islamic way. In fulfilling the objectives of this study, four hypotheses were proposed that will be discussed in next sub-section.

#### I. THE RELATIONSHIP BETWEEN VARIABLES

##### *The Relationship between Islamic Religiosity and Job Performance*

Employment has become one of the primary needs for an individual to survive. While, in Islamic point of view employment is one of obligation that must be accomplished in order to seek sustenance and provide a benefit to others. Nevertheless, a productive life cannot be accomplished exclusively by working. Productivity in life can be gained through the contribution of an incredible performance [12]. Therefore, in order to achieve and sustain great quality of job performance of Muslim employees, a different approach is required, namely the awareness of Islamic religiosity. In working life, the awareness of Islamic religiosity means that a Muslim should work as an act of worship to God [13]. As stated in the Qur'an: "And I did not create the jinn and mankind except to worship Me" (Qur'an 51:56). Thus, a Muslim should bear in mind the main intention before begin and end any sorts of activities (to worship Allah and obtain His blessing) [14]. This awareness will encourage every Muslim to effectively perform the tasks assigned. As stated by Stephen Covey (1989) in his book *"The 7 Habits of Highly Effective People"*: "Highly effective people are people who always "begin with the end in mind" [15].

Additionally, through this awareness, each Muslims will be encouraged to behave well in their daily life. They are fear toward Allah as well as their belief that Allah always sees and records their activities. Briefly, religiosity awareness gives huge advantages either in personal or professional life of an individual, which also led to organizational success. As a consequence

of the aforementioned concepts, this study hypothesized that there is a positive relationship between Islamic religiosity and job performance.

#### *The Relationship between Work Engagement and Job Performance*

Job performance is defined as any kinds of employees' behaviors (aggressive, committed, lazy, dissatisfied, etc.) during work time [3]. Numerous studies also defined performance as the outcome of the combined effort, commitments, engagement, and involvement of each employees [16-18]. Whereas, engaged employees are committed to the organization at all levels, whether cognitive, emotional, and behavioral. Such total engagement, whether emotionally, intellectually and morally, will encourage employees to develop and perform beyond expectations.

Engaged employees always enthusiastic about their work, energetic, dedicated, create changes and take any initiatives in how their work is conducted. They tend to be proactive job crafters who organize their own job resources and job challenges [19]. Therefore, engaged employees have an important key role in contributing toward excellent job performance, which will give positive effect on the overall organizational performance. Additionally, [20] stated that in any economic climate, even during difficult economic times, employees engagement strongly influence organizational success in pursuing outstanding job performance. This statement describes the significance of the relationship between employee engagement and job performance. Furthermore, engagement leads toward positive performance outcomes. For instance, lower absenteeism, fewer quality incidents (defects), lower turnover, less shrinkage, fewer safety incidents, higher productivity, fewer consumer safety incidents, higher customer metrics, and higher profitability.

[21] believes that engaged employees always put an effort to contribute something towards their work. This means that employees would continuously plan how much effort they would give in the role of their jobs. In a nutshell, engaged employees tend to have good job performance [22]. Thus, based on these concepts, this study hypothesized that there is a positive relationship between work engagement and job performance.

#### *The Relationship between Islamic Religiosity and Work Engagement*

Islamic religiosity is about the awareness on practicing the teachings of the Quran and Sunnah in daily life, either personal or professional life. Furthermore, the awareness of Islamic religiosity in the workplace simply describes as to work as a form of worship and to gain God's blessing. The teachings of the Holy Quran and Hadith encompass all aspects of human life. Through these two main sources, it guides all human being about the behaviors on how to conduct business appropriately [23-25]. Additionally, through the awareness of Islamic religiosity, all Muslims are able to manage their job stress and engage well positively due to their belief that there is wisdom behind the will of God as well as the belief that all disasters that befall Muslims will absolve their sins [24]. Based on the study conducted in the United States, [26] found that 88.1% of highly religious Muslim youths have a positive behavior in their daily life. However, the religiosity level of Muslim countries is higher compare than other countries [27]. Based on the research that conducted in Malaysia, [28] found that the religiosity level of Muslims is higher compare to other religions.

Islam forbids Muslims to become lazy, wasting time, and engage in unproductive activities [9]. As cited in the Holy Quran: "By time; Indeed, mankind is in loss; except for those who have believed and done righteous deeds and advised each other to the truth and advised each other

to patience” (Quran 103:1-3). This implies that, all human being, especially Muslims are obligated to work hard, keep the trust given, and be patient on any difficulties [2]. Moreover, all Muslim, either employers or employees are obligated to meet their obligations to God as the Supreme Power [29]. As a result of the awareness of these obligations, the excellent employees’ engagement can be achieved.

Concisely, the quality of work engagement not solely relies on general concepts that already exist (satisfaction, commitment, involvement, etc.). But also depend on the belief, as well as the awareness that Allah always sees and records any activities of His servants. Through this mindset, all Muslims will be encouraged to keep the ‘amanah’ or the trust given, engage well, as well as avoiding any laziness and unethical deeds. Overall, based on the aforementioned studies that conducted by previous researchers, this study hypothesized that there is significant relationship between Islamic religiosity and work engagement.

#### *The Mediating Effect of Work Engagement on The Relationship between Islamic Religiosity and Job Performance*

Enhancing job performance is one of vital issues that still difficult to be solved by management [30]. This is because each individual has different behavioral change in dealing with their daily tasks, especially when the individual is working under pressure. Indeed, this modern era is “the age of anxiety and stress” [31]. Job stress can give negative effects for both the individual and the organization itself [32], which easily can lead toward disengagement of employees. While engaged employees have a crucial role in sustaining individual and organizational performance. Engaged employees are more likely to care about their organization and love to contribute something for organizational success. However, engaged employees can be disengaged easily when influenced by personal or management issues. Therefore, an organization should ensure the quality of individual engagement and performance in additional way. Since the existing antecedents of examining work engagement and job performance is still lacking and less suitable to be used in the Islamic community, thus studying Islamic factor could be useful towards organization, especially concentrating on Islamic religiosity.

Reference [33] found that there is a positive relationship between Islamic religiosity and job performance. However, limited study has been conducted in examining the implication of Islamic religiosity toward job performance. Meanwhile, [34] found that there is a positive relationship between employees' religiosity and job involvement. Indeed, job involvement and work engagement are empirically distinct constructs [35]. However, inspired by the aforementioned findings, this study would like to make Islamic religiosity as a new approach in examining work engagement and job performance.

Islamic teachings give complete guidance in all aspects of human life that they must fulfill. Whereas all Muslims are obligated to worship Allah and whatever they do must be intended to Allah. Thus, all Muslim employees are obligated to work as a form of worship and to obtain His blessings. As stated by HR Baihaqi in a hadith: “Work for the world as if you were going to live forever, and work for the hereafter as if you are going to die tomorrow”. This Hadith guides all Muslims on how to gain success in the world and in the hereafter. This belief will encourage all Muslim to engage and perform the tasks assigned as well as possible. In accordance with several studies, they found that strong belief in Islam or Islamic religiosity [2] positively influence on great work engagement [36] and outstanding job performance [33]. Overall, it can be concluded that a strong awareness on religiosity is very important to inject a moral values into every human being. Even it can positively influence the behavior in daily

activities. Hence, this study hypothesized that work engagement positively mediates the relationship between religiosity and job performance.

#### CONCEPTUAL FRAMEWORK

The proposed framework that presented in the *Fig. 1* below emphasizes on four paths of hypotheses. First path is the relationship between Islamic religiosity and job performance. The second path is the relationship between work engagement and job performance. The third path is the relationship between work engagement and job performance. Whereas the overall paths indicate that work engagement mediates the relationship between Islamic religiosity and job performance.

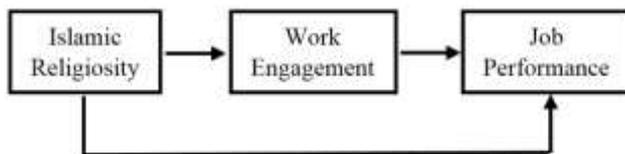


Fig. 1. Conceptual Framework

#### METHODOLOGY

##### *Sampling Design and Research Procedure*

The data collection for this study is conducted through survey questionnaires which administered randomly to 150 administrative staffs in Islamic Higher Education Institution (HEI), Kedah, Malaysia. The questionnaires have been modified into English and Malay language. This questionnaires is aims to measure the level of Islamic religiosity, job performance, and work engagement. The survey results were analyzed through Smart-PLS and bootstrapping was conducted in order to test the significance level of the t-statistic as well as the relevance of path analysis of the proposed structural model. Generally, this study utilize simple random sampling, descriptive analysis, and quantitative correlational method.

##### *Measurement*

The instruments that used in this study are adopted from existing research models. In measuring Islamic religiosity, this study adopted the Dimensions of Religiosity that developed by [37]. However, out of 7 dimensions, this study only focuses on 10 items of general religiosity dimension, which consists of 5 items from daily spiritual experiences measurement, and the remaining 5 items are from religious coping measurement. While job performance is measured by adopting 9 items scale of task performance that developed by [38]. Although there are three dimensions in the job performance scale that developed by [38], this study only focuses on one dimension, namely task performance. Whereas, work engagement was measured through Utrecht Work Engagement Scale (UWES) that developed by [39]. There are 17 items in work engagement scale, which comprises three dimensions of engagement (vigor, dedication, and absorption).

#### DATA ANALAYSIS

In analyzing the data, a statistical tool that known as Smart-PLS software is utilized. The results of analysis are presented in the following table.

TABLE 1. RELIABILITY ANALYSIS, COMPOSITE RELIABILITY, AND AVERAGE VARIANCE EXTRACTED

V	N	Mean	SD	AVE	CA	CR
JP	9	4.064	0.747	0.630	0.926	0.938
Rel	10	4.361	0.743	0.568	0.902	0.923
WE	17	4.001	0.77	0.542	0.932	0.939
<b>Note:</b>				N: Total Items		
V: Variable				SD: Standard Deviation		
JP: Job Performance				CA: Cronbach Alpha		
Rel: Islamic Religiosity				CR: Composite Reliability		
WE: Work Engagement						

Briefly, the results presented in the previous table revealed that each variable in this study has a great reliability (Cronbachs Alpha and composite reliability more that 0.80). Moreover, the value of Average variance extracted (AVE) also shows a higher value than 0.50.

#### HYPOTHESIS TESTING

Hypothesis testing is conducted through bootstrapping of 499 bootstrap samples in Smart-PLS. Through the bootstrap analysis, the t-statistics (t-value) is computed. The results of t-value reveal the relevance of the path loadings between constructs in the Structural Model. Additionally, through the bootstrap analysis, it also tests the mediating effect of work engagement on the relationship between Islamic religiosity and job performance. Thus, the following table briefly presents the results of T-statistics, path coefficient (beta), and the hypothesis.

The absolute and significant value of t-value for two-tailed test must be 1.96 or higher. Thus, based on bootstrapping, the table below concluded that there is significant relationship between Islamic religiosity and job performance (t-value= 2.650), between work engagement and job performance (t-value= 4.378), as well as between Islamic religiosity and work engagement (t-value= 4.109). Based on the analysis, this study also found that all variables are moderately correlated and there are no collinearity issues in this study. Briefly, it can be concluded that four hypotheses that developed in this study are accepted.

TABLE 2. HYPOTHESIS TESTING

H	Path	Beta (β)	Std. Error	t-value	P-Value	Decision
H1	Rel → JP	0.201	0.078	2.650*	0.011	Accepted
H2	WE → JP	0.475	0.109	4.378*	0.000	Accepted
H3	Rel → WE	0.312	0.080	4.109*	0.000	Accepted

**Note:**  
 \*\*p<0.05 (two-tailed test)  
 H: Hypothesis  
 JP: Job Performance  
 Rel: Islamic Religiosity  
 WE: Work Engagement

## II. TEST OF MEDIATION

The mediating effect of work engagement on the relationship between Islamic religiosity and job performance is analyzed by: (a) assessing the level of predictive power ( $R^2$ ), (b) assessing the effect of  $f^2$  size, (c) as well as assessing the predictive relevance  $Q^2$  and the  $q^2$  effect size.  $R$ -squared simply defined as the “percent of variance explained” by the model. In this study the  $R^2$  value is 0.240, which suggesting that 24% of the variance of work engagement can be explained by Islamic religiosity. While the  $R^2$  value of 0.455 suggests that 45.5% of the variance in job performance can be explained by work engagement.

The effect of  $f^2$  size is obtained directly after assessing the structural model through Smart-PLS. This study found that Islamic religiosity towards work engagement (endogenous) has 0.156  $f^2$  effect size. This indicates that Islamic religiosity represents medium effects of exogenous (Islamic religiosity) latent variable. While the other endogenous construct is job performance. This study found that the exogenous constructs (Islamic religiosity and work engagement) in explaining the endogenous latent variable (job performance) has  $f^2$  effect size of 0.149 and 0.315, respectively. This indicates that Islamic religiosity represents medium effects of exogenous latent variable. Whereas work engagement represents large effects of exogenous latent variable.

In assessing the predictive relevance  $Q^2$ , values of 0.02, 0.15, and 0.35 indicate that an exogenous construct has a small, medium, or large predictive relevance sequentially. The first endogenous construct is work engagement. To calculate  $q^2$  effect size for work engagement, Y1 represents Islamic religiosity. In this study, the  $Q^2$  included value is 0.056. In contrast, the  $Q^2$  excluded Y1 value is 0.040. This indicates that exogenous constructs (Islamic religiosity) explaining the endogenous latent variable (work engagement) with  $q^2$  effect size of 0.025.

Another endogenous construct is job performance. To calculate  $q^2$  effect size for job performance, Y1 represents Islamic religiosity and Y2 represents work engagement. In this study, the  $Q^2$  included value is 0.246. In contrast, the  $Q^2$  excluded Y1 value is 0.215 and the  $Q^2$  excluded Y2 is 0.239. Briefly, exogenous constructs (Islamic religiosity and work

engagement) in this study explaining the endogenous latent variable (job performance) with  $q^2$  effect size of 0.030 and 0.025 respectively.

Overall, based on the aforementioned results, it can be concluded that Islamic religiosity is directly and indirectly have a positive relationship towards job performance. While work engagement positively mediates the relationship between Islamic religiosity and job performance (Hypothesis 4).

#### DISCUSSION AND CONCLUSION

Recently, most of the organization focuses on sustaining excellent work engagement and numerous study on work engagement have been conducted. One of the reasons is the significant role of work engagement in contributing toward great job performance. However, the existing studies and theories of work engagement are less appropriate to be used in the Islamic community. This due to the lack of Islamic values and spirituality. Therefore, this study made a new approach in sustaining great work engagement and job performance, specifically through Islamic religiosity.

Islam is a comprehensive religion that regulates all aspects of human life that give a major influence on individual behavior, personality and daily activities. Additionally, according to [40], Islam is about 'aqidah' and 'ibadah'. This implies that every activity conducted is out of sincerity for the sake of worship as well as to gain the blessing of Allah in this world and in the Hereafter, not only for monetary reward. Thus, a real Muslim should be patient, 'tawakal', and not grumble while dealing with difficulties in any tasks assigned. This due to the belief that there is wisdom behind the difficulties. Moreover, a real Muslim should restrain themselves. Since Allah is always with those who are patient. In a nutshell, each Muslim is obligated to remain committed in performing the 'amanah' or the trust given. For these reasons, this paper emphasized on the awareness and implementation of Islamic religiosity in working life in order to sustain employee engagement and simultaneously results in excellent job performance.

The findings of this study showed significant relationships between each variables. First, a significant relationship between Islamic religiosity and job performance. Second, a significant relationship between work engagement and job performance. Third, a significant relationship between Islamic religiosity and work engagement. Last but not least, a positive mediating effect of work engagement on the relationship between Islamic religiosity and job performance. In line with the previous findings which stated that people who have higher religiosity [2] are more inclined to engaged [24, 35] and subsequently would perform well in their job role[33].

The findings of this study also lead to numerous implications, either in managerial or individual aspect. By implementing Islamic religiosity awareness as the base of daily activities, any individual or organization will achieve great success and long lasting prosperity. Considering that this awareness will encourage employees to engage and perform the tasks assigned as well as possible, for the sake of His blessing. Thus, management should determine the way on how to touch the employees' heart accurately and give depth awareness on Islamic religiosity. Furthermore, it is utmost importance for management to constantly evaluate the Islamic religiosity awareness of their employees. Overall, fostering Islamic religiosity awareness will lead the workplace atmosphere becomes more engaging and simultaneously sustains great job performance. Thus, future researchers are recommended to explore in depth about Islamic approach in the workplace, such as Islamic job performance and Islamic work engagement.

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# Linking Trust and Turnover Intention: A Conceptual Framework

**Mishaliny Sivadahasan Nair and Rohani Salleh**

Department of Management and Humanities  
Universiti Teknologi PETRONAS  
31750, Tronoh, Perak, Malaysia  
mishaliny@yahoo.com and rohanisalleh@petronas.com.my

Roshiny Sivadahasan Nair  
s\_roshiny@yahoo.com

**Purpose** – This paper highlights trust as a pertinent antecedent to turnover intention. Turnover intention is observed as the best predictor of actual employee turnover. Employees who have trust in their organization or employer are alleged to have low or no intentions to leave the organization.

**Approach** – Statistics from relevant bodies and review on existing literatures are compiled and studied.

**Findings** – Despite the relevance of the trust-turnover intention relationship, strongly supported by the Social Exchange Theory, little attention has been given by academicians and practitioners.

**Practical Implications** – Studies on the relationship between these two constructs can be utilized by various organizations in Malaysia and the government in their present efforts towards curbing high employee turnover rates and subsequently ensuring economic growth.

**Value** – The study contributes to the employee turnover, turnover intention, and trust literatures by providing insights on current data and identifying research gaps. The study also recommends practical directions for future research.

**Keywords:** Turnover Intention, Trust, Employee Turnover, Malaysia, Social Exchange Theory

## INTRODUCTION

In recent times, intense attention by academicians and practitioners has been directed to the subject of employee turnover. This is due to the severity of employee turnover rates in various organizations across the globe and the damaging consequences that follow (Lee *et al.*, 2010).

In the year 2013, a study by Towers Watson indicated that the employee turnover rate in Malaysia was 13.2%, an increase of 0.9% from the year before.

Hewitt Associates reported that the employee turnover rate in the year 2010 was 10.1% which was an increase of 0.8% from the year before. During this period, the IT industry and financial services recorded the highest rates of employee turnover; 18.3% and 20% respectively, while the chemicals industry recorded the lowest; 6.3%. In addition, nearly 300,000 young Malaysian employees who constitute over 50% of the country's total workforce have migrated to neighbouring countries over these years (Choong *et al.*, 2013; Malaysian Statistical Department, 2011). This phenomenon, known as brain drain, jeopardizes all efforts towards attaining a developed nation by the year 2020. These values suggest that employee turnover will continue to be a major problem to organizations and the government (Gim *et al.*, 2015).

In organizations, cost has been identified as the major consequence of high employee turnover rates. High cost of selecting, recruiting, and training new employees is endured by the organization each time an employee leaves (Boushey and Glynn, 2012). Lucas (2012) states that, to replace an executive, the organization incurs cost 213% more than the parting executive's salary. Besides that, high employee turnover rates hamper implementation of new ideas and basket improvements which consequently affect productivity, performance, and revenues of organizations (Ghosh *et al.*, 2013; Boushey and Glynn, 2012; Costigan *et al.*, 2012). In the long run, these affected organizations lose out to their competitors and are left behind in the race (Ismail and Lim, 2007). Furthermore, employees that leave an organization undergo stress due to uncertainty and miss out in terms of seniority and experience (Kodwani and Kumar, 2004).

Based on these realities, it is therefore not surprising that a lot of time and effort are channelled towards identifying root causes of employee turnover in a myriad of circumstances with the hope of curbing this issue. After an extensive review of existing literature, this paper stresses the need of exploring trust as a salient antecedent to employee turnover.

## LITERATURE REVIEW

### *Turnover Intention*

Turnover intention is explained as an employee's voluntary decision to leave an organization (Wayne *et al.*, 1997). Turnover intention is observed as the best predictor of actual employee turnover (Costigan *et al.*, 2012) and theory of planned behaviour ascertains this conceptualization (Makhbul *et al.*, 2011). Many studies have stressed and proven the positive relationship these two constructs share (Gim *et al.*, 2015; Cotton and Tuttle, 1986; Bigliardi *et al.*, 2005).

Furthermore, as the saying goes, prevention is better than cure, focusing on turnover intention amongst employees rather than actual turnover will benefit the organizations as remedial measures can be still taken before these employees actually quit (Gim *et al.*, 2015). Circumstances that instigate the intention to leave amongst the employees can be eliminated and hence reducing actual employee turnover rate (Griffeth *et al.*, 2000). In addition, overall morale of employees in an organization can be undesirably affected by contagious negative mind set and actions which accompany high turnover intention (Costigan *et al.*, 2012). It is therefore justified to use turnover intention as a tool to predict actual employee turnover (Gim *et al.*, 2015).

Why an employee develops the intention to quit an organization? As mentioned, many studies have been conducted in various settings to answer this significant query. Among the popular factors are job satisfaction, organizational commitment, pay satisfaction, work culture, fatigue, stress, age, trust related matters, and organizational justice perceptions (Farndale, 2012; Pucetaite *et al.*, 2010; Ming *et al.*, 2012; Cotton and Tuttle, 1986; Gieter *et al.*, 2012; Jiang and Probst, 2015; Ghosh *et al.*, 2012; Johari *et al.*, 2012; Tian-Foreman, W., 2009).

### *Trust*

Trust is one of the most vital constituent of any effective human interaction or relationship. A study has described that "there is no single variable which so thoroughly influences interpersonal and group behavior as does trust" (Golembiewski and McConkie, 1975). Trust is labeled as the most crucial ingredient to ensure stability in an organization and contentment amongst its employees (Cook and Wall, 1980).

Mayer *et al.* (1995) highlighted benevolence, ability, and integrity as principal elements to form and develop trust. Benevolence is defined as "a genuine concern of the other party for the own protection and welfare", ability as "the other party's capacity in terms of skills and

knowledge to perform his/her obligations”, and integrity as “beliefs about the other party's adherence to a set of principles that one finds acceptable”. Also, various studies have emphasized organizational justice, organizational support, leadership styles, and management actions as antecedents of trust (Sendjaya and Pekerti, 2010; Bijlsma and Koopman, 2003; Sharkie, 2009; De Cremer *et al.*, 2006).

Over the years, working environments have evolved drastically where employees are no longer in favour of regimented style of management. To the rescue, trust is known as a stimulant of voluntary collaboration; an essential component towards good organizational performance and managerial effectiveness (Bijlsma and Koopman, 2003; Atkinson and Butcher, 2003). Besides that, levels of trust employees have on their organizations or employers have impact on employees' organizational behavioural outcomes such as justice perceptions, commitment, motivation, loyalty, engagement, creativity, satisfaction, and intention to quit (Jiang and Probst, 2015; De Cremer *et al.*, 2006; Sharkie, 2009; Appelbaum *et al.*, 2004; Sendjaya and Pekerti, 2010). To support, Farndale *et al.*, (2009) states that, by manipulating one's construal of the action, trust regulates the relationship between an employer's action and an employee's reaction.

#### *Social Exchange Theory, Trust, and Turnover Intention*

Employees who are dedicated and committed to their jobs and organizational goals certainly expect reasonable rewards. To satisfy these expectations and consequently reap the best out of employees, organizations go all-out to reward them from various angles (Ivancevich *et al.*, 2008). This concept of reciprocation by both employees and organization can be explained by the Social Exchange Theory (SET). This theory, presented by Blau (1964), states that “an individual who supplies rewarding services to another obligates him, to discharge this obligation; the second must furnish benefits to the first in turn” (Ahmed *et al.*, 2011). SET proposes that employees are driven to respond to what they recognize as beneficial treatment (Zhang and Jia, 2010). In simpler terms, SET explains that employees engage in a rationally predictable give-and-take relationship with the organization (Ivancevich *et al.*, 2008); management design desirable compensation plans in exchange for commitment and loyalty while employees work with full concentration and dedication in exchange for pay and benefits. On the other hand, if the expectations of both parties in this relationship don't match, work motivation declines.

Originating from the anthropology domain, SET recently has been studied in many other areas including philosophy, economics, psychology, and sociology. Specifically, in the study of inter-corporate relationships (e.g. manufacturer-distributor, supplier-buyer), SET has gained attention (Chao *et al.*, 2013) and researches mainly focus on the numerous forms of reciprocity and empirical significances of the relationships (e.g. satisfaction, turnover intention) (Flynn, 2005).

Using SET as the theoretical basis, it can be said that, employees who believe that their employer or organization has prioritized their well-being will reciprocate by displaying positive organizational behavioural outcomes. In other words, employees who have trust in their organization or employer are alleged to have low or no intentions to leave the organization. When employees and the organization or employer share a less trusting relationship, the employees tend to decide towards leaving the organization as they perceive themselves to be in a vulnerable or high risk position due to unreliable supervisory decisions (Dirks and Ferrin, 2002).

#### *Previous Studies*

Table I shows the summary of recent studies conducted in the area of trust and turnover intention (from the year 2010 onwards). Since most studies on these areas respectively were conducted in the Western organizational contexts, findings from these studies may not be applicable to organizations in Malaysia due to enormous working culture, social, political, and economic differences (Cotton & Tuttle, 1986). On the other hand, the few studies conducted in Malaysia have used inadequate number of constructs in limited organizational settings, thus questioning generalizability of findings.

Despite the relevance, a review of existing literature exposes that significantly little is known about the relationship between trust and turnover intention, let alone in Malaysia thus necessitating more attention from academicians and practitioners to fill in this knowledge gap.

TABLE I  
SUMMARY OF STUDIES ON TRUST AND TURNOVER INTENTION

YEAR	COUNTRY	AUTHOR	SUBJECT	CONTEXT	MAIN FINDINGS
2015	Malaysia	Gim <i>et al.</i>	Antecedents of Turnover Intention	General	Psychological Climate positively related to Turnover Intention. Affective Commitment mediates this relationship and negatively related to Turnover Intention.
2016	Norway	Arshad <i>et al.</i>	Antecedents of Turnover Intention	Service industry	Psychological Contract breach positively related to Turnover Intention. Cultural Value moderates this relationship.
2013	Pakistan	Rahman and Nas	Antecedent of Turnover Intention	Universities	Employee Development perception negatively related to Turnover Intention.
2016	Iran	Shahpouri <i>et al.</i>	Antecedents of Turnover Intention	Nursing	Personal resources affect Turnover Intention directly and with Work Engagement as mediator. Job resources only affect Turnover Intention with Work Engagement as mediator.
2016	Malaysia	Osman <i>et al.</i>	Antecedents of Turnover Intention	Conceptual - Professionals	Social Exchange and Personality as predictors of Turnover Intention.
2011	UK	Farndale <i>et al.</i>	Consequence of Trust	Finance, Automotive, Food, Communications	Trust moderates high commitment performance management (HCPM) and employee commitment.
2010	UK	Crawshaw and Brodbeck	Consequence of Trust	Financial institute	Trust as antecedent of careerist orientation.
2010	US	Han and Harms	Trust as Mediator	Health-care	Trust mediates team identification and team conflict.
2010	-	Laequddin <i>et al.</i>	Dimensions of Trust	Conceptual	Trust is multifaceted.
2010	Indonesia	Sendjaya and Pekerti	Antecedent of Trust	Educational institute	High servant leadership behaviour as antecedent of trust.
2011	US, Russia, Poland	Costigan <i>et al.</i>	Relationship of Supervisory Trust and Turnover Intention	Service industry	Trust on CEO more related to Turnover Intention than trust on supervisor. In- group Collectivism did not moderate this relationship.
2014	Nigeria	Abdulkareem	Relationship of Organizational Politics, Trust, and Turnover Intention	Nursing	Trust and HR practices negatively related to Turnover Intention.
2015	USA	Jiang and Probst	Trust climate versus Individual Trust.	Universities	Both Trusts enables job satisfaction, commitment, job security, motivation, engagement. It reduces burnout and turnover intentions.

#### CONCEPTUAL FRAMEWORK AND FUTURE DIRECTIONS

The reasoning and comprehensive reviews discussed are laid as the foundation for the conceptual framework as seen in Fig. 1.



Fig. 1: Conceptual framework.

Studies on the relationship between these two constructs can be utilized by various organizations in Malaysia and the government in their present efforts towards curbing high employee turnover rates and subsequently ensuring economic growth.

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# The Management of Research and Innovation Systems: Comparative Study of the East and the West Practices

**Teck-Chai Lau\***

*Faculty of Accountancy and Management,  
Universiti Tunku Abdul Rahman, Sungai Long Campus, Malaysia  
Email: lautc@utar.edu.my*

**Kum-Lung Choe**

*Faculty of Business and Finance,  
Universiti Tunku Abdul Rahman, Kampar Campus, Malaysia  
Email: choekl@utar.edu.my*

**Ming-Yu Cheng**

*Faculty of Accountancy and Management,  
Universiti Tunku Abdul Rahman, Sungai Long Campus, Malaysia  
Email: chengmy@utar.edu.my*

*\* Corresponding author*

## Abstract

**Purpose:** This paper reviews and analyses the national innovation systems in selected countries: Israel and Germany (Western practices) and Singapore and Taiwan (Eastern practices) in order to identify the uniqueness, challenges and best practices of each innovation system.

**Design/methodology/approach:** This is a comparative study looking at the best practices in the East (Singapore and Taiwan) and the West (Israel and Germany). A review of certain innovative practices in each of the countries is discussed.

**Findings:** The findings provide valuable information for countries, particularly developing countries, to learn and design appropriate innovation ecosystem in respective countries.

**Originality/value:** - The impact of Science and Technology (SandT) development is not equally distributed across countries. Not all countries are able to absorb the benefits or able to take great advantage of SandT advancement, despite the efforts and resources allocated for RandD activities. The study articulates the implication for developing countries such as Malaysia to take some pointers on how certain successful innovative countries managed their SandT.

**Keywords:** National Innovation Ecosystem, Science and Technology, East and West Practices, Comparative Study

## Introduction

The role of Science and Technology (SandT) in growth and development is irrefutable. Advanced OECD countries such as the United States of America, Germany, Finland and United Kingdom, put cutting edge SandT in the priority seat. For the past five years since 2000, the average gross domestic spending on RandD as a percentage of GDP is above 2% for the OECD countries and researchers per 1000 employed is more than 6 (OECD, 2015). As a result

of the strong emphasis on SandT and innovation, OECD countries were able to sustain their competitive advantage in this increasingly complicated, dynamic and integrated economy. Other countries, particularly the fast growing developing economies in the Asia-Pacific region such as Singapore, Taiwan and South Korea, jointly called the Asian Dragons, have also demonstrated the benefits of effective capitalization of science, technology and innovation for growth and competitive advantage. The Asian Dragons were able to transform from agricultural-based economies in the 1970s to industrialized and knowledge-based economies in the 21<sup>st</sup> century, and enjoyed sustained growth with higher labor productivity for the past few decades, as a result of SandT development.

However, the impact of SandT development is not equally distributed across countries. Not all countries are able to absorb the benefits or able to take great advantage of SandT advancement, despite the efforts and resources allocated for RandD activities. For instance, in Malaysia, SandT has been identified as a key driver of economic growth and it has been an emphasis in the Malaysian development plans, since 1986. The first National Policy on SandT was launched in 1986 and subsequently many SandT and innovation policies were introduced to develop the national innovation ecosystem. The budget allocation for RandD in Malaysia has increased over the years and has reached 1.1% of GDP in 2011. The number of researchers per 1000 employed is 3.8, which is lower than the OECD's average, but is improving over time. Generally, Malaysia's economic growth performance for the past few decades was remarkable and a number of indicators indicated that Malaysia is on the right track of development, the inflation rate and unemployment rate are low, foreign direct investment is promising and the country is moving toward achieving high-income status to realize its Vision 2020.

Despite these achievements, there is increasing concern that the pace and quality of SandT development in Malaysia is inadequate to address the existing and emerging challenges. The outputs of Malaysian SandT activities are relatively low as compared with other countries in the region. There is weak SandT and industry linkage, and low commercialization rate of RandD output. For instance, only about 3.4 percent of the RandD outputs were commercialized during the Eight Malaysia Plan.

What could possibly explain the different trajectory of SandT development in different countries? In order to gain an insight, there is a need to understand the ecosystem of innovation in different countries. This paper reviews and analyses the national innovation systems in selected countries, in order to identify the uniqueness, challenges and best practices of each innovation system. The findings would provide valuable information for countries, particularly developing countries, to learn and design appropriate innovation ecosystem in respective countries.

### **The Roles of Government, Industry and Academia in National Innovation System (NIS)**

Innovation and technology development is a complex process. It involves actors from diverse institutions, inclusive of economic, political and social institutions. It also encompasses massive interactions among these actors in exploring, searching, learning and developing new technology. Hence to study the innovation activities at national level and in a system, National Innovation System (NIS) requires good understanding on who are involved and how they interact with each other. In his comprehensive study, Sterman (2000) shows how complex businesses can be fruitfully modeled as a system of interdependent feedback loops. Countries, too, are businesses, and the innovation aspects of national business systems can be fruitfully modeled using system dynamics. There have been several strong efforts to define and model national innovation ecosystems. One definition of national innovation system is that of Freeman (1987, Box 1, p. 1): "...the network of institutions in the public and private sectors, whose activities and interactions initiate, import, modify and diffuse new technologies." An

alternate definition is given by Metcalfe (1995, cited in UNCTAD, 2008, p.3): "... that set of distinct institutions which jointly and individually contribute to the development and diffusion of new technologies and which provides the framework within which governments form and implement policies to influence the innovation process. As such it is a system of interconnected institutions to create, store and transfer the knowledge, skills and artifacts which define new technologies."

According to Koh and Wong (2005), governments play important role in structuring the science and technology policy and in fostering technology creation and adoption. First, the government can nurture a broad and productive RandD culture, closely linked to higher education. Second, the government, either directly or through its agencies, can also act as the principal investor in those areas of research in which private enterprises cannot operate effectively. Third, governments can also lower the cost of risk taking by encouraging strong university-industry interactions, providing incentives for cooperative premarket basic research. Finally, they can play an important role to facilitate the commercialization of publicly financed research and enabling business and consumers to adapt to new market demands and opportunities.

Besides the government, many other national and local institutions play important roles in technological progress and a nation's economic development. Universities, schools, infrastructure providers, standard-setting agencies, and a host of other organizations are critical components in the environment for technology creation. In particular, strong linkages between universities, industry, and government are crucial in fostering an innovation culture. The following analysis examines different practices of national innovation ecosystem in selected countries.

### ***Taiwan National Innovation Ecosystem***

In order to compete more effectively in the face of globalization, the Taiwanese government established the Industrial Technology Research Institute (ITRI) in 1973 (Rasiah and Lin, 2003). The primary mission for ITRI was to conduct and promote research and development while having the flexibility to accept research projects from the private companies. There are several unique aspects of ITRI; first, it is a non-government corporation, championing industrial and social benefits. This non-government corporate status reduced red-tapes from various government agencies (Shih, 2005). Over the years, it has assisted the set-up of many world class high-tech companies and among them are the Taiwan Semiconductor Manufacturing Corporation (TSMC) and BenQ.

Second, ITRI integrated the previously fragmented research bodies into one mega research house. ITRI plays the leading role in spearheading the direction of future research (Mathews and Hu, 2007). There were cases where many companies come together and get involved in RandD work to achieve a technological breakthrough. In addition to providing technological assistance, the role of ITRI also includes mediating and coordinating on behalf of the Taiwanese government to promote cooperation among companies. Arm with multi-million dollar equipment and research staffs graduated from the technologically advanced countries, ITRI is able to provide the necessary technologies for the long term growth of Taiwan's economy.

Third, ITRI not only involves in fundamental research but also act as technology outsourcing agent for the small and medium enterprises (SMEs). SMEs face common problems of not having adequate financial resources and talented research staffs to enhance their technological standings. This model of technology transfer achieved a very high success rate (Chu, Lin, Hsiung and Liu, 2006). As the industrial structure is transformed, many traditional industries especially the SMEs lost their competitive advantages because of rising costs and thinning market shares. ITRI resembles the major source for these companies to acquire new technology

and more importantly transform them into a high value added corporations. By providing technological assistance at different stages when it is needed, ITRI successfully transform Taiwan from agricultural-based to knowledge-based economy.

Fourth, corporate spin-offs model adopted by ITRI is a proven success with the examples of TMSC and Changrong (Evergreen). When the market acceptance is unknown, it is very difficult to research results to companies as they have to commit tremendous investment on equipment and facilities (Hsu and Chiang, 2001). The Taiwanese government has thus been providing the cutting edge technology as well as a portion of the capital as the seeding fund. First and foremost, the government supplies the relevant talents by transferring key personnel from ITRI to the spin-off companies. The establishment of a spin-off empowers the company to spread the technology while allowing ITRI to stay focus on RandD and avoid the manufacturing hassles. These spin-offs are independent and they are protected by the Taiwanese government from market competition. Many of these spin-offs are competing in the international arena where they have to be both market driven and cost efficient. The secondary benefit of spin-off companies occurs when their talented staffs join the competitors and thereby help to spread out the technology to a wider aspect in the industry.

Finally, the decision to build Hsinchu Science Based Industrial Park (Hsinchu Park) brings forth a network of supply chain. Hsinchu Park provides a platform for collaboration from upstream to downstream (Shih, 2005). This is further enhanced with the close proximity to universities and ITRI. National Tsing Hua University and National Chiao Tung University are top notch research universities able to provide technological innovations and pool of talents. Companies within the vicinity of Hsinchu Park could enjoy easy access to customized research and laboratory testing. When the area Hsinchu Park developed into an industrial cluster, it unleashes positive spillover effects. For instance, shipping cost is lower and delivery is seamless and prompt. Outsourcing opportunities attract many more businesses to set up their presence and this in turn builds up a concentration of talents and capital.

### ***Singapore National Innovation Ecosystem***

Singapore is one of the most competitive nations in the world. Its country competitiveness ranking ranged from 1<sup>st</sup> in 2010 to 4<sup>th</sup> in 2012 (IMD, 2012). In business efficiency and government efficiency, Singapore ranks second in the world. Despite its high wages, Singapore's high productivity keeps it globally competitive, showing that high wages need not be a barrier to cost competitiveness.

To ensure consistent long term innovative culture, Singapore government established the Joint Council Office (JCO) at the end of 2007 with the mandate to foster joint council research within Agency for Science, Technology and Research (A\*STAR) in a systematic and coordinated approach. Hence, A\*STAR is given the task to foster Joint Council collaborative research by building an eco-system that facilitates interaction and creates opportunities to allow multidisciplinary ideas to come together and cross-pollinate through top-down and bottom-up approaches. This is in response to the opportunity for a portfolio approach to develop higher-risk, longer-term RandD that could potentially yield big winners. Advances in technology and global trends have created new prospects and challenges in the cross-disciplinary space. Using a top-down approach, significant resources will be allocated for strategic areas identified in the multidisciplinary space. These initiatives will leverage on existing capabilities to develop new thematic areas as well as enable A\*STAR to build up a whole new suite of capabilities.

Under the Science, Technology and Enterprise Plan 2015, A\*STAR was allocated S\$6.39 billion to drive mission-oriented public research and strengthen the base of scientific talent to support the development of the key industry clusters. A\*STAR is the lead agency for fostering world-class scientific research and talent for a vibrant knowledge based economy. Singapore.

A\*STAR actively nurtures public sector RandD in biomedical sciences, physical sciences and engineering, and supports Singapore's key economic clusters by providing intellectual, human and industrial capital to partners in industry and the healthcare sector. A\*STAR's RandD strategies are closely integrated with Singapore's economic development strategies, and these enable Singapore to attract RandD projects with multi-national companies (MNCs), widen industry reach and help local enterprises upgrade. Together with the Economic Development Board (EDB), A\*STAR has helped to anchor various flagship RandD projects and attract more MNCs to locate corporate RandD activities in Singapore. Some renowned MNCs in RandD that have made Singapore their RandD centers include Novartis, GlaxoSmithKline, Vestas, Hewlett-Packard and Fujitsu. On the same token, EDB is also coordinating the efforts to develop Singapore into a hub for education services, fashion design, media, and communications. The goal is to create different industry clusters and create agglomeration effects of attracting talent and new industries from the region.

It is also worth noted that the listing rules on the Singapore stock exchange were amended to allow technology to raise funds more easily. Entrepreneurs were also allowed to start-up their ventures in the residences. The National Research Foundation (NRF) awards Technology Incubation Scheme Investments (TIS) every year in turning innovative ideas into commercial ventures. It also funds strategic initiatives to build up Singapore's RandD capability, develop research talent and nurture a culture for innovation and entrepreneurship. Entrepreneurs are encouraged to set up regional headquarters in Singapore and proper supervision is ready to be granted by experienced mentors.

NRF over the past few years has provided funding of \$600 million to five Research Centers of Excellence. Seed funding is also provided to NUS spinoff companies under New Venture Support (NVS) scheme. All university research centers in Singapore provide training and other necessary service provisions to reduce the risk of incompleteness of transfer and ensure performance of the technology. Research centers provide technical assistance and training programs to reduce the industry risk of failure to master the technology and the risk of incomplete transfer. Advisory committee and the faculties from overseas universities and local engineering professionals are working as attached staff wipes out any doubt of the competency of the transferor

The availability of the financial resource as well as highly qualified human resources of all research centers strengthens the technology transfer functions. The centers' own publications and presentations at seminars, conferences and trade fairs help advertise their capabilities and their products. Each research center has its own formal media advertising featuring different types of ready-to-use technology. The application and the uses of each technology are described in detail together with the technology transfer mechanism chosen for each technology. All research centers also have their own business networks for technology transfer activities. The originality of the transferred technology from research centers differs according to the technology acquisition methods. Technologies can be developed in-house or adopted from a third party. The sole proprietorship of the in-house developed technology secures the private knowledge of research centers from becoming public.

It is obvious that higher the commitment in motivating industry to participate in technology transfer projects with the research centers, the more successful the technology transfer practices become. Among different technology transfer mechanisms, joint RandD project is an efficient way to ensure high commitment of industry and increase the transferability and willingness to industry (Lee and Win, 2004)

In terms of education program, a university level Entrepreneurship Centre was established within NUS Enterprise with the mission to teach entrepreneurship to all students on campus, particularly students in engineering, computing and science, including life science and medical

students. NTU, on the hand, hosted the Kauffman-Singapore Scholars Program which aims to bring in America's best and brightest students in science, technology and engineering to learn about the Asian market and create successful global businesses based on their innovative ideas. The essence of this program is in fact to provide a platform for Singaporean students to build network and exchange ideas with the world. In order to further promote entrepreneurial activities in campus, a student start-up fund was established by NRF to provide seed funding to new ventures started by students.

### ***Israel National Innovation Ecosystem***

Israel is ranked 19<sup>th</sup> in the world in competitiveness (IMD, 2012) in 2011. In the same report, Israel's economic performance ranks only 36<sup>th</sup>; government efficiency 21<sup>st</sup>; business efficiency 18<sup>th</sup>; and infrastructure 13<sup>th</sup>. A poor ranking in basic infrastructure (roads, transportation, and communication) of 48<sup>th</sup> is offset by high rankings in technological and scientific infrastructure (5<sup>th</sup> and 4<sup>th</sup> respectively). Israel possesses a well-developed and established National Science and Innovation System. Research policy decision making takes place with significant private sector involvement at its various stages. Given the lack of national resources, Israel positions itself as a 'brain' and knowledge exporting economy with a historically strong international orientation both of its scientific community and of its economic activities.

In this system, a multitude of actors interact on several levels. At governmental level, the Knesset's Science and Technology Committee is responsible for the design and approval of policy measures for civilian research. For this purpose, it interacts with the government offices' chief scientists and the National Council of RandD. All government ministries employ Chief Scientists with respective offices. The Ministry of Industry and Trade is concerned, by and large, with financial incentives for preferred industrial activities. The majority of public grants for research are provided by the Ministry of Industry and Trade through the Chief Scientist Office. The Ministry of Defense funds directly defense-related research projects. In line with mandatory army service, army in many cases serves as first employer for the hi-tech work force during their formative years. Many start-up companies in ICT can be traced back to former employment of founders with army laboratories. The Ministry of Agriculture is directly engaged in RandD through the Agricultural Research Organization (ARO). The Ministry of Science and Technology influences RandD chiefly through its responsibility for the scientific research strategy. The Ministry of National Infrastructures is directly involved in RandD through its Chief Scientist and Division of Research and Development, funding research with direct short to mid-term application potential. The Ministry of Immigrant Absorption is an important actor through its role in the absorption of educated population migrating to Israel since the early 1990s. This immigration accounts for almost 20% of the country's total population and about half of the technological workforce (Eurostat, 2006). The Ministerial Committee for Science and Technology appoints the National Council for Research and Development (Committee for the Development of Scientific and Technological Strategic Research). The Council consists of representatives of the Public Sector, academia and the Private Sector. The council serves as an advisor to the government.

In Israel, government plays an important role in formulating innovation policies and driving innovation. Intermediate bodies under government supervision such as Academy of Science are also important NIS component in Israel. Under the auspices of the Ministry of Science and Technology, the Academy of Science develops strategic plans for the future technological development. The Committee of Infrastructure advises the Ministry of Science and Technology on national science infrastructure issues. The Council for Higher Education, chaired by the Minister of Education, Culture and Sport, is the state institution in Israel responsible for tertiary education, including teaching and research. The Planning and Budgeting Committee of the

Council has the exclusive authority for disbursing the global authorized budgets to HEIs. The Council moreover is directing education focus areas in close cooperation with the Private Sector as well as taking responsibility for research infrastructure issues. This Council, together with the Ministry of Industry and Trade, is by far the organization with the largest budget. Therefore these organizations have the most influential roles.

Israel possesses a well-developed research infrastructure. Among the major actors are eight universities and a number of government supported non-profit RandD oriented organizations. Israel's research infrastructure is accompanied by a very active venture capital industry and a strong RandD-orientated industry, mainly in ICT-related fields as well as a in the growing biotechnology sector.

The Private Sector performs the by far largest share of research (73.4% of GERD). The majority of Private Sector research is financed from industry funding sources (90%). The Private Sector is represented by the Manufacturers Association of Israel (MAI) and the Federation of Israeli Economic Organizations (FIEO). MAI has the sole responsibility to represent Israel's Private Sector in all relevant policy decision making with economic impact through the preparation of position statements participation in council boards and informal direct contacts to the Public Sector (Eurostat, 2006).

### ***German National Innovation Ecosystem***

Germany's economy is highly globally competitive, despite its relatively high wages, offset by very high labor productivity. According to IMD (2012), Germany ranks 9<sup>th</sup> in competitiveness out of 59 globally competing nations and this reflects that Germany's economy has fared well and has been so far managed well.

The main comparative advantage of the German economy is its specialization on high and medium-high technology combined with efficient production and innovative products and services. The system of innovation governance in Germany is, by and large, stable and oriented towards consistent continuation of well-established and efficient governance structures. As a consequence, there were no major changes among the group of main policy actors (i.e. government organizations and administrating agencies) and their key responsibilities. The system of policy design and delivery rests on a clear division of labor between ministries (which are responsible for strategy, developing new instruments, responding to new challenges and coordination with other policy actors) and administering agencies which manage programs, communicate with (potential) beneficiaries, monitor programs and provide feedback to ministries on program success (including results from evaluations), potential needs for adjustment and changing challenges within the target groups of policies. This model is more or less valid both for the federal government and the majority of state governments (EU Report, 2013).

The system of innovation governance in Germany is strongly affected by the institutional and legal setting. As a federal state, both the federal government and the 16 Länder (federal states) governments are important players and share a number of policy responsibilities for financing education, research and innovation policy programs and initiatives. The federal government takes up a variety of activities in research and innovation policy and may be regarded as the main state actor in the German innovation system. The main actors in innovation policy among the federal ministries are the BMBF and the BMWi. Several other federal ministries are also engaged in innovation policy to some extent, e.g. through technology programs or the financing of military-oriented RandD. The responsibility for innovation policy is mainly divided between the BMBF and the BMWi. Each ministry follows a specific innovation policy approach:

A major peculiarity of the German innovation system compared to many other countries is the delivery mode of research and innovation programs. Both at the federal and the state level,

government agencies focus on defining policy objectives, strategic design and coherence of policy measures, while implementation and program administration is conducted by a set of specialized public, semi-public or private institutions, so-called Projektträger (PT). They are authorized by governments to care for administrative issues in running policy measures. Their main task is to deliver innovation policy in Germany (EU Report, 2013). As formally independent organizations, they administer and manage innovation policy programs on a contractual basis. This includes activities such as public relations and publicity, checking and administering proposals and applications, preparing decisions on funding, financial affairs in the course of funded projects, program monitoring, and project controlling.

They are also quite strongly involved in the conceptual design of programs and in stakeholder debates. There are more than 20 such program managing organizations, both serving federal and state Ministries. Many of them have developed out of public research bodies (especially from the large governmental research centers), and many of the managers at the program managing organizations have an academic or even research background in the thematic area they are responsible for. As all direct public support for RandD and innovation activities in enterprises is project based and administered by program managing organizations, policy makers and other staff.

The most important program managing organizations are currently the following:

- I. PT Jülich (Biotechnology, energy, new materials/nanotechnology, environmental technologies and climate, maritime technologies, basic research in science, technology transfer and start-ups);
- II. DLR (ICT, space, health, services, workplace design, research in education, environment/culture/ sustainability);
- III. PT Karlsruhe (manufacturing technologies, sustainability research);
- IV. VDI/VDE Innovation and Technology (micro systems, cooperative RandD programs for SMEs).

For some programs, new legal entities have been set up to run a program, e.g. for the High-tech Startup Fund which is run by a limited company (High-tech Gründerfonds Management GmbH) which invests in young technology firms. Ministries are rarely directly involved in the management of programs but rather focus on conceptual and strategic issues.

### **Best Practices and Limitations of Western and Asian Models**

In Israel, evidence shows that strong ties exist between cultural anchors and supply and demand driven processes in Israel. Pure supply-side processes such as government support for the defense industries and the establishment of military RandD programs were found to exert significant spillover effects on innovation infrastructure. The existence of a strong scientific and technological base and solid entrepreneurial infrastructure seems to be one of the key drivers of the Israeli innovation ecosystem. According to Frenkel and Maital (2014), the five key factors that make Israel's economy attractive are a strong research and development culture, skilled workforce, high educational level, dynamism of the economy and open and positive attitudes. All five are closely related to Israel's dynamic start-up culture and its thriving high-tech industry. Among the main challenges facing Israel are reducing bureaucracy, investing in periphery infrastructure, increasing the current low rate of labor force participation and decreasing the large economic gaps between rich and poor, among the highest in the OECD nations.

The Germany innovation ecosystem is highly interconnected with many strong links between processes and anchors. Nations that are interested in strengthening demand-driven innovation should emulate the German model. Technological capabilities and the existence of economies of scale seem to have a profound impact on processes that foster innovation in Germany.

Cultural and public policy anchors also play a vital role in driving these processes. Germany also has important industrial clusters, specifically the automotive cluster. Such clusters are actively supported by tax and subsidy policies. Germany also has a unique chain of RandD labs that provide fast and efficient technology transfer. In the study by Frenkel and Maital (2014), Germany's main strengths are the skilled workforce, stable predictable policy, reliable infrastructure, strong RandD culture, high educational level and effective legal environment. Underlying these is Germany's *mittelstand*, the small and medium-size enterprises that produce precision manufacturers, mainly for export. In the same report, it was also mentioned that among the challenges facing Germany are: the threat of a larger budget deficit, the banking system, barriers to investment and a shortage of skilled workers as the population ages.

In Singapore, every five years, a Singaporean Government Task Force will re-examine Singapore's competitive advantage and seek to reinvent and redesign it. This has led to large and rapid changes in Singapore's competitive focus and to some innovation as the city state shifts from manufacturing to finance to communication and biotechnology. This type of innovation is the polar opposite to the garage entrepreneurship of the US, but in its own way is effective, and is suited to Singapore's history and culture. Among Singapore's main challenges are: improving productivity of its small businesses, adapting to slow population and workforce growth, high economic inequality and building competitiveness in new industries (a perennial problem Singapore faces). Among the key attractiveness indicators are: stable predictable policy, competent clean government, low business taxes, an effective legal system, good infrastructure, overall friendliness toward business and a strong educational system. (Frenkel and Maital, 2014)

ITRI has been doing an excellent job in the contributions of Taiwanese GDP growth. However, the increased tense competition from countries namely South Korea and China has made ITRI and the government to rethink their strategies. There is an obvious frog leap of technological innovations from these neighboring countries. Samsung from South Korea and Huawei from China have both demonstrated their technological superiority and acute sense of market trend. It is worth to note that big names like Apple and Facebook are successful not owed to their technological superiority but instead their brand power and their understanding of customer needs.

### **Conclusion**

This paper reviews and analyses the national innovation systems in selected countries: Israel and Germany (Western practices) and Singapore and Taiwan (Eastern practices) in order to identify the uniqueness, challenges and best practices of each innovation system. The findings provide valuable information for countries, particularly developing countries, to learn and design appropriate innovation ecosystem in respective countries. Malaysia could take some pointers on how the above mentioned countries managed their innovation. However, it would be appropriate that Malaysia inculcate some of these practices but at the same time be mindful that they will also need to cater these practices that suit the unique eco-systems of the country.

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# Ability, Motivation, Opportunity Enhancing Human Resource Management and Corporate Environmental Citizenship: What's the Connection?

**Tay Lee Chin\***

*Universiti Utara Malaysia, School of Business Management*  
Email: t.leechin@hotmail.com

**Tan Fee Yean**

*Universiti Utara Malaysia, School of Business Management*  
Email: feeyean@uum.edu.my

**Khulida Kirana Yahya**

*Universiti Utara Malaysia, School of Business Management*  
Email: khulida@uum.edu.my

*\* Corresponding author*

## **Abstract**

**Purpose:** This paper examines ability, motivation and opportunity enhancing human resource management practices to achieve corporate environmental citizenship. Drawing upon the Ability-Motivation-Opportunity (AMO) theory, this study develops a research framework to explain the relationship between ability, motivation, opportunity enhancing human resource management practices and corporate environmental citizenship.

**Design/methodology/approach:** The target sample of this study is Grade 7 construction companies Malaysia. 108 respondents are sampled using simple random sampling techniques. However, only 50 responses are collected through questionnaire. Then, the data is analyzed by using SmartPLS 2.

**Findings:** The findings reveal that ability human resource management practices is related to corporate environmental citizenship while motivation and opportunity human resource management practices do not influenced corporate environmental citizenship. This denotes that ability human resource management practices plays an important role in promoting corporate environmental citizenship.

**Originality/value:** - Although human resource management practices are the critical areas to achieve corporate environmental citizenship, little has been done to examine the interrelated practices of human resource management. In order to fill the research gap, this paper examines the influence of human resource management practices (i.e. ability enhancing, motivation enhancing and opportunity enhancing) on corporate environmental citizenship.

**Keywords:** Ability-Motivation-Opportunity Enhancing Human Resource Management practices, Corporate Environmental Citizenship

## **Introduction**

Environmental issues have become a great concern to the whole world when the media reports on air pollution, water pollution, waste disposal, global warming and so on (Muhammad Hassan and Muhammad Abid, 2014). The environment has been widely damaged due to industrialization (Goosen, 2012; Taborianski and Prado, 2012). Therefore, corporations are

expected to emphasise on environmental activities due to the demand from the government, public and environmental groups. As a result, the concept of “corporate environmental citizenship” is developed. Corporate environmental citizenship has to be implemented as an essential practice in organisations (Ozen and Kusku, 2009).

Corporate environmental citizenship means organisations’ voluntary involvement in environmental activities. Corporate environmental citizenship helps organisations to gain several business benefits such as lower operating costs, more efficient operations and increase revenue (Erwin, Wu, Khanna, Jones and Wirkkala, 2013). Moreover, corporate environmental citizenship attracts environmental consciousness among customers and lead to stronger sales performance (Yu, Coulson, Zhou, Wen and Zhao, 2011). Hence, organisations must enhance corporate environmental citizenship for protecting the natural environment.

This is true for construction companies. Construction companies have been accused for the largest portion of pollution compared to manufacturing, service and agriculture companies (Environmental Quality Report, 2013). Besides that, in recent years, the numbers of construction projects have increased dramatically from 2009 to 2014 due to the 'Malaysian Plan 2020' (Sasitharan, Ismail, Ade and Nur, 2013). This has alerted the government to encourage the construction companies to increase their corporate environmental citizenship. Various guidelines have been introduced, for example the Green Building Index (GBI) and Green Technology Policy.

Nevertheless, the issue of how far construction companies have achieved corporate environmental citizenship is still debatable and unclear. Construction companies’ agreement with the corporate environmental citizenship does not ensure that they will implement it. According to Nazirah (2010), many construction companies agree with the corporate environmental citizenship. However the construction companies still do not understand the meaning of corporate environmental citizenship and few have implemented it. Thus, it is crucial to conduct research on the implementation of corporate environmental citizenship by construction companies.

Moreover, previous studies on corporate environmental citizenship in the construction companies commonly focus on the environmental construction practices (Nazirah, 2010; Wan Nazdri, Zulkifli Muhammed and Dani Salleh, 2012) and construction waste (Ismail, Sasitharan and Ade, 2014; Siti, Nadira, Azrizal and Janidah, 2012). In other words, these studies focus on the technical aspects of corporate environmental citizenship. They do not consider the organisational factors (e.g human resource management practices) that influence the corporate environmental citizenship. Therefore, this study examines the influence of human resource management practices on corporate environmental citizenship.

The practices of human resource management include enhancement of ability, motivation and opportunity. These practices play important roles to achieve corporate environmental citizenship because they influence the behavior of organisational members to contribute in environmental activities. For example, providing financial support (e.g. commissions for promoting green products and services) and non-financial rewards (e.g. free bus passes) to encourage the employees to participate in environmental activities. Ahmad (2015) finds that human resource management practices influence corporate environmental citizenship better than other factors such as marketing, finance, information technology and accounting. Renwick, Redman and Maguire (2013), Vidal-Salazar, Cordon-Pozo and Ferron-Vilchez (2012) assert that human resource management practices are the critical areas to achieve successful corporate environmental citizenship. Therefore, the relationship between practices of human resource management practices with corporate environmental citizenship should be examined.

However, many researchers (Duarte, Gomes, Nas Deves, 2014; Tung, Baird and Schoch, 2014; Sujatha and Basu, 2013; Zoogah, 2011) focus on a specific human resource practice rather than the interrelated practices of human resource management. For example, Guerci, Radaelli, Siletti, Cirella and Rami Shani (2013) examines interrelated human resource management practices in three dimensions – ability enhancing human resource management practices (e.g. recruitment, selection and training), motivation enhancing human resource management practices (e.g. rewards, compensation and performance appraisal) and opportunity enhancing human resource management practices (e.g. employee involvement). Wright, Dunford and Snell (2001) and Delaney and Huselid (1996) argue that human resource management practices do not operate independently. Instead, each practice supports one another and they work together synergistically to achieve a common goal. In order to fill the research gap, this paper examines the influence of human resource management practices (i.e. ability enhancing, motivation enhancing and opportunity enhancing) on corporate environmental citizenship. To meet the research objective, next section explains the definition of corporate environmental citizenship, ability, motivation and opportunity enhancing human resource management practices and the relationship between corporate environmental citizenship and ability, motivation and opportunity enhancing human resource management practices. This is followed by the research framework, research methodology, findings, discussion and conclusion.

## **Literature Reviews**

### ***Definition of Corporate Environmental Citizenship***

In general, corporate environmental citizenship means responsibilities of a corporation towards the environment that must be reported to stakeholders (i.e. employees, customers, suppliers, investors and community). The issue of corporate environmental citizenship has been studied by many researchers, for example Altman (1998), Carroll (1998), Epstein (1989), Laufer (1996), Lewin, Sakano, Stevens and Victor (1995), Pinkston and Carroll (1994). Marsden and Andriof (1998) define corporate environmental citizenship as organisations' ability to manage relationship with the society and to minimise negative impacts to the environment. This is further explained by Kusku (2007); he defines corporate environmental citizenship as policies and precaution actions by corporations to reduce hazards on the environment.

However, Rondinelli and Berry (2000) define corporate environmental citizenship differently. They emphasise on the organisational systems and processes to improve environmental conditions. This means that corporate environmental citizenship is dependent on corporations' willingness to participate in environmental activities. The environmental activities can be divided into internal and external. The internal activities include integration of environmental issues into strategic planning process and enhancement of ethical behavior towards environmental protection. Meanwhile, external activities include providing sponsorship for environmental education and training, giving financial incentives for employees to work with environmental community groups and donating funds for environmental infrastructure developments. This view is supported by Banerjee (2002); he defines corporate environmental citizenship as corporations' commitment with three environmental activities. Firstly is to legitimate the environmental activities in the organisation. Secondly is to recognise the importance of the biophysical environment by including it in the formulation of organisation strategy. Finally is to include environmental issues into the company's strategic planning process. Following the above discussions, this paper conceptualizes corporate environmental citizenship as companies' voluntary involvement in environmental activities.

***Definitions of Ability, Motivation, Opportunity enhancing in Human Resource Management Practices***

Ability enhancing in human resource management practices means organisations use recruitment and selection processes, and training and development activities to increase employees' ability to achieve the organisational goals (Guerci et al., 2013). In other words, ability enhancing human resource management practices includes recruitment, selection, training and development processes (Guerci et al., 2013; Gardner, Wright and Moynihan, 2011; Jiang, Lepak, Han, Hong, Kim and Winkler, 2012). The objectives of recruitment and selection processes are to find potential employees and choose employees who have suitable skills and competencies for specific job requirements. Hence, the recruitment and selection processes can increase the number of skilled and knowledgeable employees. On the other hand, the objectives of training and development activities are to enhance employees' skill and knowledge. Effective recruitment, selection, training and development practices help organisations to employ and retain efficient workers, reduce turnover rates and enhance employees' morale (Jiang et al., 2012; Subramony, 2009).

Motivation enhancing human resource management practices means organisations use contingent rewards and performance management to increase employees' motivation to perform better (Guerci, et al., 2013). Employees have motivations to put higher efforts when their performances are rewarded. For example, an organisation motivates employees to be environmental friendly by giving various financial rewards. Performance management also motivates employees to perform better by issuing performance standards and providing performance feedback. For example, an organisation establishes the environmental performance standards for employees to understand their responsibilities and this will improve organisations' environmental outcomes.

Opportunity enhancing human resource management practices means organisations provide opportunities (e.g job design, industrial relations and workforce involvement) for employees to engage in a specific behavior (Guerci, et al., 2013). For example, employee's involvement in decision-making process to resolve environmental issues. This allows the employees to participate and give suggestions to improve products and services sustainability. As a result, it increases organisational morale because the management trusts the employees and appreciates their ideas. Furthermore, it encourages organisations' growth because employees offer better ideas to solve the organisation's environmental problems.

***Ability, Motivation, Opportunity enhancing Human Resource Management Practices and Corporate Environmental Citizenship***

Researchers (Vidal-Salazar et al., 2012; Sujatha and Basu, 2013; Cherian and Jacob, 2012) emphasise the importance of ability enhancing human resource management practices in promoting corporate environmental citizenship. Recruitment and selection practices are able to enhance human resource management practices and increase corporate environmental citizenship. This is through hiring employees who have environmental awareness. Employees who have environmental awareness are familiar with green practices (e.g. recycling) and they are capable to promote corporate environmental citizenship. For example, environmental friendly organisations include green knowledge and behaviors in job specifications. They recruit employees who are passionate to work in environmental friendly organisations. Training and development activities are also able to enhance human resource management practices to achieve corporate environmental citizenship. This can be achieved by providing training on environmental citizenship and conserve energy in workplace to employees. Sarkis, Gonzalez-Torre and Adenso-Díaz, (2010) examine the effect of environmental training on organisational environmental practices. They find that environmental training influences

organisational environmental practices; environmental training helps organisations to prepare and ready in adopting the organisational environmental practices

Jabbour, Jabbour Govindan, Texiera and Freitas (2013), Lin and Ho (2011), and Jabbour, Santos and Nagano (2010) examine the influence of motivation enhancing human resource management practices on corporate environmental behavior. [38] Find that rewards either in financial (e.g. bonus, increase in pay, profit sharing) or non-financial (e.g. recognition programs, vacations, certificates, praises) influence employees' environmental behavior. For example, when an organisation gives awards (e.g plaque, letters) for innovative environmental improvement ideas, it enhances the corporate environmental citizenship. Performance appraisal is one of the strategies to enhance human resource management practices for corporate environmental citizenship. The strategy is to include environmental performance standards into the performance appraisal system. According to Opatha and Arulrajah (2014), to encourage environmental friendly behavior, employees' job performance should be evaluated based on environmental awareness criteria. Organisations also can include a separate component for greening progress in the employees' performance appraisal. However, some organisations use negative reinforcements (e.g. wages suspensions, warnings and criticisms) in the performance management. Chan and Hawkins (2010) examine hotel employees' experience with environmental management practices and find that some employees are scolded when they did not implement hotels' environmental management practices. Employees must engage in hotels' environmental management practices to avoid from being scolded.

In addition, Renwick et al. (2013) find that employee involvement not only enhances human resource management practices, but also enhances corporate environmental citizenship. Employees' goals, capabilities, commitment and perceptions are aligned with the organisations' green practices. It can be attained from employees' involvement in the environmental management practices. According to Vidal-Salazar et al. (2012), employees' involvement can improve corporate environmental citizenship by reducing waste and pollution in the workplace. On the other hand, employees' environmental friendly behavior can be achieved through empowerment. A study conducted by Kaur (2013), find that empowerment increases employees' willingness to give suggestions for environmental improvements. Empowerment means shifting the decision-making power from top-level employees to lower-level employees. Empowerment allows them to have autonomy and power to give suggestions in resolving environmental issues. As a result, corporate environmental citizenship can be achieved effectively when all employees are willing to give suggestions for environmental improvement. On the other hand, Ahmad (2015) asserts that management should encourage employee's empowerment. Suggestions from all employees are welcome irrespective of their job positions. They are encouraged to resolve environmental issues and apply their green knowledge in the workplace. As a result, organisations get many new ideas on environmental protections and increase corporate environmental citizenship.

Based on the above discussions, it is hypothesized that:

- H<sub>1</sub>: Ability enhancing human resource management practices has a significant relationship with corporate environmental citizenship
- H<sub>2</sub>: Motivation enhancing human resource management practices has a significant relationship with corporate environmental citizenship
- H<sub>3</sub>: Opportunity enhancing human resource management practices has a significant relationship with corporate environmental citizenship

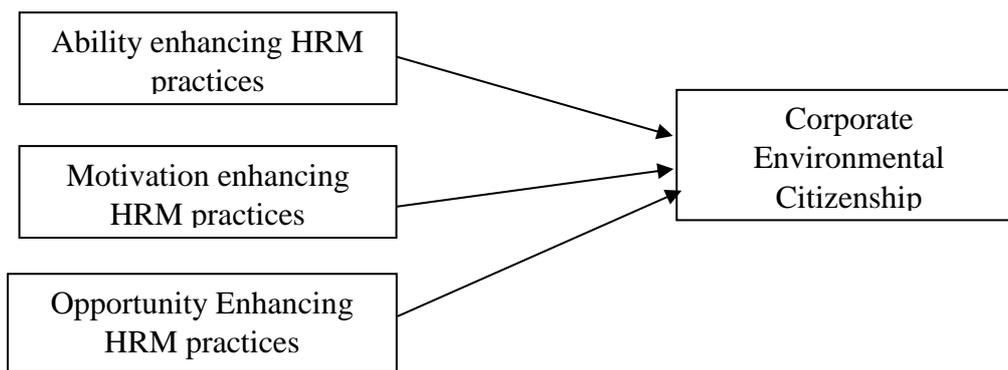


Figure 1: Research Framework

Figure 1 shows the research framework for this study. This study proposes that ability, motivation and ability enhancing human resource management practices have a direct relationship with corporate environmental citizenship. This is based on the Ability-Motivation-Opportunity (AMO) theory. AMO theory is introduced by Kochan, Ichniowski, Levine, Olson and Strauss (1996). Appelbaum, Bailey, Berg and Kalleberg (2000) mention that ability, motivation and ability enhancing human resource management practices can enhance employees' ability, motivation and opportunity within organisation to participate and increase the organisations' performance and productivity. Therefore, ability, motivation and ability enhancing human resource management practices help organisations to recruit, select, train and develop the employees.

Furthermore, the employees gain knowledge, skills and positive behavior through motivation and opportunities given by the top management. This view is supported by Gardner et al. (2011) and Bos Nehles, Van Riemsdijk and Looise (2013). In the context of this study, the construction companies must incorporate ability, motivation, opportunity and enhancing human resource management practices to enhance employees' ability, motivation and opportunity to engage into the environmental friendly behavior and corporate environmental citizenship. For example, an organisation includes environmental friendly criteria in the recruitment advertisement and selects applicants who are aware of green environment. The employees also should be able to communicate with other employees regarding green environment, share their environmental skills and conduct environmental environmental trainings. These can improve employees' environmental friendly behavior and corporate environmental citizenship.

## **Research Methodology**

### ***Research Design***

This study adopts the quantitative research methodology. Quantitative research methodology permits large number of data collections which the results can be generalised to the whole population. Questionnaire is used as a research instrument to gather data because it allows the researcher to collect data from large targeted respondents. According to Sekaran and Bougie (2013), questionnaire has been widely used in social science research for collecting data from large number of respondents. Furthermore, the unit of analysis of this study is organizational level because this study examines the corporate environmental citizenship (dependent variable) of Grade 7 construction companies Malaysia. The representative (i.e executive director or managing director or human resource manager) of each participated Grade 7 construction companies Malaysia served as the respondent to answer the questionnaires.

### ***Samples***

The population of this study comprises of 147 Grade 7 construction companies Malaysia. According to Nazirah (2010), Grade 7 construction companies have higher level of sustainable awareness, knowledge and practices compared other grades of construction companies. Hence, they are more familiar with the green practices in the construction activities. Further, previous studies Nazirah (2010), Waris, Liew, Khamidi and Idrus (2014) related to environmental practices also have chosen Grade 7 construction companies as their target sample, therefore it seems appropriate to apply Grade 7 construction companies as the target sample for this study. This study identified sample size based on the table for determining sample size from a given population by Krecjie and Morgan (1970). According to Krecjie and Morgan (1970), the desired sample size for 147 population is 108. However, from the total sample of 108, only 50 responses are collected.

The Grade 7 construction companies surveyed comprise of 96% Malaysian, 2% foreign, 2% Malaysian-foreign ownership construction companies. Their construction businesses are run by professional management groups (52%) and the business owners (48%). Not only that, a large percentage of construction companies has been in the industry more than 10 years (58%) while the rest were less than 10 years (42%). Most of them has domestic market (72%) followed by domestic and international market (22%) and also international market (6%). They are mostly had 1 to 50 employees (82%). Only a handful has more than 50 employees (18%).

### ***Measurements***

Measurements for corporate environmental citizenship originally developed by Banerjee (2002) that access four areas for corporate environmental citizenship namely internal environmental orientation, external environmental orientation, corporate strategic focus and functional strategic focus. This measurement is chosen because it is widely tested by researchers such as Buil-Carrasco, Fraj-Andres and Matute-Vallejo (2008), Shah (2011) and Chan (2011) regards its higher reliability value (Coefficient alpha 0.94). The measurements used in the corporate environmental citizenship comprises of 16 items that evaluate the level of construction companies' voluntary engagement in the environmental protection.

In addition, human resource management practices is measured by Guerci et al. (2013). The 18 items of human resource management practices accessed the degree of ability-motivation-opportunity enhancing human resource management practices construction companies. In this study, each of the adapted questions asked how strongly the respondent agreed or disagreed with the human resource management practices and corporate environmental citizenship statements on a five point scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The use of five point likert scale has several advantages. First, it is able to measure accurately (Hair, Black, Babin and Anderson, 2010). Second, it widely used in recent research (Gwinner, 2006). Third, the respondents are able to choose a neutral rating in case some of them felt neutrally about some topics. Neutrality, according to Gwinner (2006), can be described as a legitimate opinion existing among respondents.

### ***Results***

SmartPLS 2.0 is chosen for data analysis. All the constructs are reflective latent variables and relatively small sample size (n=50), thus SmartPLS 2.0 is the appropriate technique for data analysis. The researcher takes two steps of analytical approaches namely measurement model and structural model. Four methods of reflective measurement model namely item loadings, composite reliability (CR), average variance extracted (AVE) and discriminant validity are adopted. The results are shown in Table 1 and 2.

In the Table 1, it is found that the outer loadings of individual indicators for reflective constructs exceeded the minimum criteria 0.7. Nevertheless, some items such as ABT 6 and CEC 15 are dropped from the analysis as it failed to meet the minimum criteria. Next, it is observed that composite reliability (CR) for reflective constructs exceed the cut off value 0.7. After that, the convergent validity is achieved because all average variance extracted (AVE) are greater than required minimum value 0.5. Finally, the discriminant validity of reflective constructs is confirmed using Fornell Lacker Criterion whereby the discriminant validity of each reflective constructs is higher than the correlations between the constructs as depicted in Table 2.

Moreover, the structural model is then analyzed following the assessment of measurement model. The structural model comprised the hypothesized relationship between exogenous and endogenous variables in the model. Figure 2 illustrates the assessed structural model and Table 3 summarized the results of hypotheses testing.

Ability enhancing human resource management practices ( $b=0.258$ ,  $p<0.05$ ) is found to have significant relationship on corporate environmental citizenship. Thus,  $H_1$  is supported. Meanwhile, the relationship between motivation enhancing human resource management practices ( $b=0.303$ ,  $p<0.05$ ) and opportunity enhancing human resource management practices ( $b=0.213$ ,  $p<0.05$ ) on corporate environmental citizenship were not significant. Hence,  $H_2$  and  $H_3$  are not supported.

**Table 1. Convergent Validity**

Construct	Items	Loadings	CR	AVE			
Ability	ABT1	0.877	0.880	0.787			
	ABT2	0.897					
Motivation	MTV8	0.872	0.934	0.781			
	MTV9	0.915					
	MTV10	0.881					
	MTV11	0.867					
	OTN12	0.771					
Opportunity	OTN13	0.810	0.921	0.627			
	OTN14	0.717					
	OTN15	0.804					
	OTN16	0.904					
	OTN17	0.782					
	OTN18	0.740					
	CEC	CEC1			0.884	0.965	0.700
		CEC2			0.884		
CEC3		0.906					
CEC4		0.883					
CEC6		0.881					
CEC7		0.877					
CEC9		0.780					
CEC10		0.799					
CEC11		0.797					
CEC12		0.759					
	CEC15	0.771					
	CEC16	0.824					

Note: CEC=corporate environmental citizenship; Ability=ability enhancing; Motivation= motivation enhancing; Opportunity= opportunity enhancing

Table 2. Discriminant Validity (Fornell Lacker Criterion)

	Ability	CEC	Motivation	Opportunity
Ability	<b>0.887</b>			
CEC	0.694	<b>0.837</b>		
Motivation	0.772	0.640	<b>0.884</b>	
Opportunity	0.701	0.566	0.806	<b>0.792</b>

Note: the values in the boldface are square root of AVE

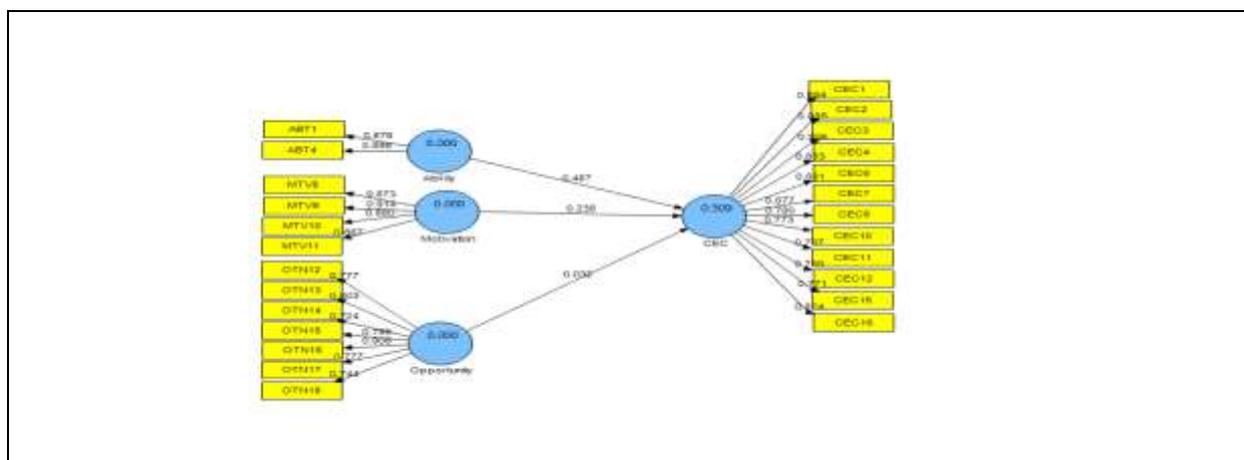


Figure 2. Structural model

Table 3. Hypothesis Testing

Hypotheses	Relationship	Standard Beta	T Value	Decision
H <sub>1</sub>	Ability -> CEC	0.258	2.232	Supported
H <sub>2</sub>	Motivation -> CEC	0.303	1.305	Not Supported
H <sub>3</sub>	Opportunity -> CEC	0.213	0.281	Not Supported

\*\*p<0.01, \*p<0.05

### Discussions

This study indicates there is an association between ability enhancing ability human resource management practices and corporate environmental citizenship. The reason can be ability enhancing human resource management attract and develop employees within organizations' environmental knowledge through recruitment and training (Renwick et al. 2013). In particular, environmental awareness organizations are more prefer to hire environmental friendly employees. They are more willing to engage in corporate environmental citizenship. Other than that, training also increases employees' ability to recognize, understand, manage and take appropriate actions to promote corporate environmental citizenship.

In contrast, motivation and opportunity enhancing human resource management practices do not exhibit significant relationship on corporate environmental citizenship. As mention previously, incentives can stimulate corporate environmental citizenship. However, employees within organizations might show little interest in the incentives and remained unconvinced that corporate environmental citizenship was the right things they should engage. Other than that,

environmental behaviors always neglect in the performance objectives compared to sales or profits objectives. It means the employees within organizations are evaluated based on target sales and not in corporate environmental citizenship. It causes the employees within organizations prioritized sales issues over corporate environmental citizenship. This may explain the insignificant relationship between motivation enhancing human resource management practices on corporate environmental citizenship.

As for opportunity enhancing human resource management practices, the employees within organizations face the constant work demands. Often, pressures related to works and achieving sales target result the employees within organizations do not have sufficient times to involve in any organizational environmental activities. Besides that, the employees within organizations perhaps not understand their roles and responsibilities in the organizational environmental programmes. According to Boiral and Paille (2012), corporate environmental programs usually request the employees within organizations' involvement but do not specify the detailed methods for pursuing corporate environmental programs. Consequently, the employees within organizations lost the interest to participate in the environmental programmes and promote corporate environmental citizenship.

### **Research Implication**

This study provides significant theoretical contribution. As mention earlier, this study tests the impact of ability, motivation and opportunity enhancing human resource management practices on corporate environmental citizenship. It is hoped to aware that single human resource management practices do not give comprehensive impact to corporate environmental citizenship since single human resource management practices do not function strategically. This study also has significant practical implications. This study provides human resource managers with evidence about the importance of ability, motivation and opportunity enhancing human resource management practices on corporate environmental citizenship. In this regard, managers could increase ability, motivation and opportunity of the employees within organizations to achieve corporate environmental citizenship.

### **Limitations and Directions for Future Research**

The present study has few limitations that should be acknowledged. The first limitation is this study examines the direct relationship between ability enhancing, motivation enhancing and opportunity enhancing human resource management practices and corporate environmental citizenship without focusing the mechanism and process underlying the direct relationship. As a result, future researches need to explore other mechanism and process whereby the direct relationship take place.

The second limitation is the sample size relatively small and influences the generalizations and interpretations of the findings. Thus, future research should be based on larger samples size to confirm the findings. Moreover, the data are obtained from single country and sector. Hence, the findings perhaps not suitable to adopt in other countries and business industries due to different culture and organizational settings. In this regard, the researcher encourages scholars to examine this study in different countries and business industries.

The third limitation of this study is the cross-sectional design. It is possible that cross-sectional design inflate the true relationship between ability, motivation and opportunity enhancing human resource management practices and corporate environmental citizenship. Accordingly, future research can consider longitudinal studies because it can explain how interventions of ability, motivation and opportunity enhancing human resource management practices gradually improve corporate environmental citizenship.

## Conclusion

In conclusion, the present paper contributes to an understanding of the impact of ability, motivation and opportunity enhancing human resource management practices on corporate environmental citizenship. It is found that ability enhancing human resource management practices determined corporate environmental citizenship. Meanwhile, motivation and opportunity enhancing human resource management practices do not influenced corporate environmental citizenship. Therefore, construction companies need to emphasize on ability enhancing human resource management practices to enhance corporate environmental citizenship.

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# Economic Value Analysis for a Government Funded Research Program in Green Fertilizer Technology Development

**Fong-Woon Lai\***

*Management and Humanities Department, Universiti Teknologi PETRONAS, Malaysia*  
Email: laifongwoon@petronas.com.my

**Muhammad Kashif Shad**

*Management and Humanities Department, Universiti Teknologi PETRONAS, Malaysia*

**Hasnida Abdul Wahab**

*Management and Humanities Department, Universiti Teknologi PETRONAS, Malaysia*

*\* Corresponding author*

## **Abstract**

**Purpose:** The aim of this paper is to analyze the economic value of a government sponsored research program (OneBaja) in Malaysia through Cost-Benefit Analysis (CBA) model. A five-stage process model for the Cost-Benefit Analysis is developed to focus on the value of several projects undertaken within the research program. The five stages of the CBA model are; identification of the deliverable of each project; identification of the advantages and disadvantages (opportunity cost) of each deliverable; qualification, quantification, and monetization of the deliverables.

**Research Methodology:** The CBA model is developed to identify, qualify, quantify and monetize the benefits of separate but interrelated projects undertaken within the OneBaja research program which aims to develop new technology for the production of a green fertilizer for paddy plantation. The data of this study is gathered in two stages according to CBA process model through interview and secondary sources.

**Findings:** The principal findings of this study are that the green OneBaja product is supposed to save time, cost and labor in the application frequency of the fertilizer in paddy plantation as compared to the conventional methods of fertilizing the crops. Its production and application are able to reduce carbon foot print tremendously. The CBA results indicate that the RM12 million research grant provided by the government can potentially generate benefits value of RM1,824 million per year for the entire fertilizer industry in paddy farming through its new technology development and green fertilizer product.

**Research Limitations:** The benefits and value derived from the CBA examination for the OneBaja research program presented in this paper are based on the projected deliverables and the presumed monetary value of their direct and indirect benefits. As such, the computed monetary value of the deliverables/benefits should not be construed as direct cash profit for the research program.

**Originality/Value:** This is the first time that such study has been conducted in Malaysia to highlight the economic value analysis of OneBaja research program granted by MOHE Malaysia by developing Cost and Benefit Analysis model.

**Keywords:** Cost Benefit Analysis, Green Fertilizer Technology Development, Government Academia Collaboration.

### **Introduction**

The world-wide concern about worsening environmental conditions necessitate the need for eco-friendly agriculture products. Academic institutions play an important role to research eco-friendly products and bring the inventions into commercial application. Nevertheless, there are few successful collaborative research focusing on technology transformation and product commercialization between the academia and government (Salleh and Omer, 2013).

The 2015 budget speech by the Malaysian Prime Minister stated that the active collaboration between the universities and the industry will have significant positive impact on economy. To this end, the Malaysian government, through the Ministry of Higher Education's Long-term Research Grant Scheme (LRGS), provides grants to institutions of higher learning to support research programs of fundamental nature in niche areas such as global warming, infectious diseases, tropical medicine, energy and water security, adequacy of food, advanced manufacturing and value added, as well as information and communication technology (Salleh and Omer, 2013; Lee, 2000). It is through this initiative that OneBaja research program came into existence in 2011. OneBaja research program comprises a group of researchers from several public and private universities in Malaysia to embark on a research on developing green fertilizer technology. This OneBaja research program received a grant worth (Ringgit Malaysia) RM12 million from the Ministry of Higher Education (MOHE) of Malaysia.

The ultimate objective of OneBaja research program is to produce a green fertilizer technology by featuring a green production of ammonia in the form of Control Release Fertilizer (CRF) mechanism of urea for paddy farming fertilizer. The research program is broken down into seven sub research projects as shown in Figure 1. **Project 1 to 6** are related to technology developing, engineering and sciences, while **Project 7** of the OneBaja research program relates to stakeholders communication strategy as well as social and economic analysis.

This paper highlights the economic value analysis of the OneBaja research program whose grant is provided by the MOHE Malaysia by developing a Cost-Benefit Analysis (CBA) model for four out of the seven projects within the OneBaja program. As such, this paper develops a 5-stage CBA model for the computation of the costs and benefits for the projects under examination.

### **Literature Review**

#### ***Government-Universities Collaboration***

The support and funding from the government is beneficial and crucial to higher learning institutions to develop the technologies and push outward the frontier of knowledge (Lee, 2000). Apart from the contribution to the economic development, the government research grants contribute much to the universities helping in the development of new technological products, training of staff and students, product commercialization, creating new scientific instrumentations and methodologies, forming networks and stimulating social interactions, creating new firms and increasing the capacity for scientific and technological problems solving practices (Salter and Martin, 2001). In the Tenth Malaysian Plan (2011-2015), MOHE

announced four types of grants that have been initiated for the growth of research and development activities, such as the Fundamental Research Grant Scheme (FRGS), Long-term Research Grant Scheme (LRGS), Exploratory Research Grant Scheme (ERGS) and Prototype Research Grants Scheme (PRGS) (Lee, 2000). All these grants are available to universities, researchers, engineers, government research institutions, as well as corporations that focus on product innovations and development.

In the light of the above, “OneBaja” research program receives RM 12 million grant from the LRGS to advance knowledge in green fertilizer technology development by featuring a green production of ammonia as well as a controlled–release mechanism of urea in the paddy fertilizer. The OneBaja research program involves fifty two (52) researchers coming from four (4) public and one (1) private higher learning institute in Malaysia. LRGS aims to generate new ideas and advance theories to expand knowledge boundaries in niche areas strategic to the country.

This grant entails a research program comprising multiple interrelated projects which are multi-disciplinary and involving the corpus of science and technology as well as social sciences and humanities. LRGS embodies a government-university partnership through federally sponsored university research to advance the nation’s RandD enterprise.

### ***Green Fertilizer Technology***

Agriculture industries play an important role in the Malaysian economic development and supply many job opportunities for the society (Fahmi, Samah and Andullah, 2013; Yaakub et al., 2011). To enhance the agriculture production and to get optimum plant growth, nutrients such as fertilizers must be accessible in sufficient and balanced amount (Chen, 2006). Nevertheless, the traditional method of agricultural farming in which chemical-based fertilizers are heavily used has contributed to increased global warming and greenhouse effect. Additionally, the increasing soil destruction and immense use of biochemical fertilizer particularly in rice cultivation had resulted the Malaysian government to introduce the ‘National Green Technology Policy’ (NGTP) in 2009. NGTP put emphasis on boosting and implementing the green technology in agriculture (Vlek and Byrnes, 1986).

Green technology policy refers to the development and application of products, equipment and systems used to converse the natural environment and resources which minimizes and reduces the negative impact of human activities (Hashim and Ho, 2011). The continual application of traditional fertilizers in Malaysian paddy production has been creating adverse environmental impact with negative social consequences. The development of an eco-friendly fertilizer is hence timely and appropriate. Green fertilizer technology in the form of control release fertilizer (CRF) has numerous advantages. These advantages are:

- I. It increases fertilizer efficiency and crop yield,
- II. It reduces losses of nutrients through leaching, runoff, volatilization, and denitrification,
- III. It saves time, cost, and labor in reducing the frequency required for fertilizer application compared to the conventional method,
- IV. It synchronizes the release of all macro- and micro-nutrient in the soil necessary for crop plantation,
- V. It eliminates the risk of nutrients deficiency or scorching.

### ***Cost Benefit Analysis (CBA)***

Organizations are perpetually making their projects investment and other financial decisions with respect to the purposes of their existence to create value for their stakeholders (Stephanson, 2010). To decide what and where to invest is crucial for organization. In order to ensure investment in the projects are successful and creating value to stakeholders, it is crucial for the project owner to perform a thorough cost benefit analysis (CBA) (Holland, 2012; Ceryone, 2010). There is no a single or standard model for the CBA. Cost Benefit Analysis is a broad form of economic and environmental assessments evaluation tool that has been used as an aid in the public sector during the last 50 years (Wen and Chen, 2008; Mishan and Quah, 2007; Hanley and Spash, 1993). The hallmark of CBA is that costs and benefits are expressed in monetary terms so that they can be directly compared to other similar or competing projects (Robinson, 1993; Hasting, 2015; David, 1998).

In the light of the above, this paper deliberates the economic value analysis through a framework of the cost benefit analysis (CBA) for the OneBaja research program. A five-stage process model for the CBA is generated by focusing on monetization of the various projects undertaken for the development of the green fertilizer technology.

### ***The OneBaja Research program and its 7 Projects***

The OneBaja research program is broken down into 7 separate but interrelated projects. The expected deliverables for each project are: **Project 1:** a novel magnetic induced reaction for green ammonia-urea synthesis; **Project 2:** formation of iron fused oxide nanotubes catalyst system for green urea production; **Project 3:** green processing of biodegradable urea granules; **Project 4:** multifunctional layers of controlled release fertilizer for greener environment; **Project 5:** Enhanced Efficiency Fertilizer (EEF) urea on crop production and the environment; **Project 6:** integrated computational fluid dynamics (CFD) analysis and design optimization for green urea processing; and **Project 7:** socio-economic impact analysis and stakeholder's communication strategy.

Specifically, Project 1 of OneBaja program deals with synthesizing and developing a new ammonia/urea process using One-Step approach in a magnetic induction reaction zone. Project 2 performs integrity studies of metal oxide fused oxide nanotube catalysts for green urea production. Project 3 synthesizes biodegradable binder for urea granulation. Project 4 formulates a new multifunctional controlled released for green EEF. Project 5 carry out efficacy test on the newly developed EEF of the Green fertilizer. Project 6 deals with design of Nano-mixer for Green Urea Production using Computational Fluid Dynamics (CFD).

Whilst project 7 of OneBaja program focuses on sociology, economic analysis, stakeholder's communication and market segmentation analysis of EEF application.

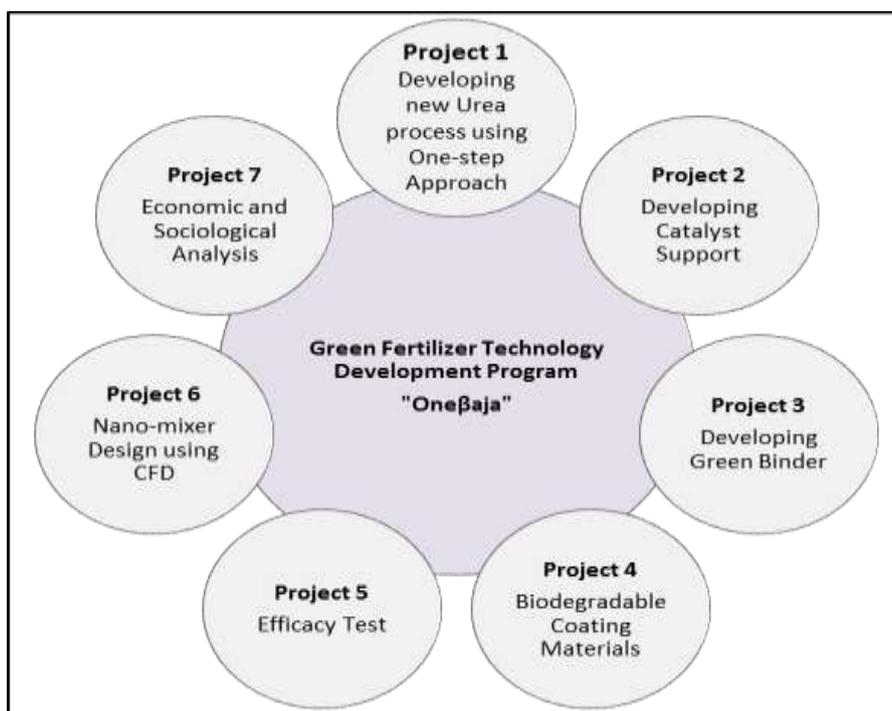


Figure 1: Green Fertilizer Technology Development Research Program

### Research Methodology

This paper highlights a model for determining the cost and benefit analysis of a green fertilizer technology development research program (OneBaja) mentioned earlier. The CBA model is developed to identify, qualify, quantify and monetize the benefits of each separate but interrelated project undertaken within the OneBaja research program. The developed CBA model comprises five stages of process flow as shown in Figure 2.

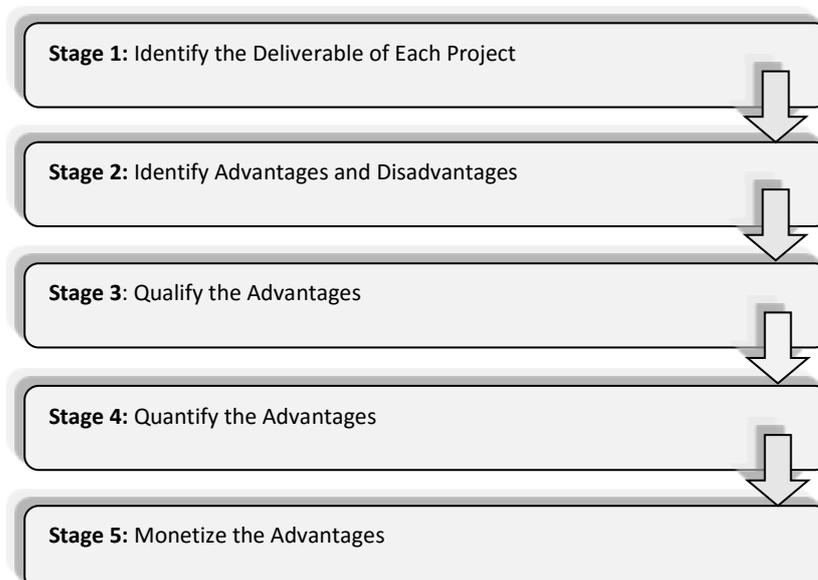


Figure 2: Cost Benefit Analysis Process Model

### ***Data Collection***

The data of the study is gathered in **Stage 1** and **Stage 2** of the CBA process model through interviewing the respective project leader and research officer to validate the deliverables of each project undertaken. Two questions were asked in these stages, namely;

- I. What are the expected deliverables for this project?
- II. What are the advantages and disadvantages (opportunity cost) of these deliverables vis-a-vis the existing method of farming in the context of its fertilizer application.

The obtained information from the interview was used as input for analysis in **Stage 3** and **Stage 4** of the CBA model for benefits estimation, i.e. qualification and quantification of the value of the expected deliverables. Lastly, in **Stage 5**, the value from Stage 3 and 4 were used to determine the monetary value of the cost and benefits of the expected deliverables of each project.

### **Economic Value Analysis**

Although there are seven separate but interrelated research projects under the OneBaja research program, the economic value analysis through CBA is only performed on Project 1, Project 2, Project 3, and Project 4, of the green fertilizer technology development research program. Project 5 is found to be irrelevant for the CBA examination due to the nature of its research as it involves soil testing. Whilst Project 6 relates to catalytic computational flow simulation. Project 7 is also excluded from the CBA as it involves economic, social and stakeholder's communication strategy. The ensuing section describes the CBA examination for project 1, 2, 3, and 4 based on the model presented in Figure 2.

#### ***Economic Value Analysis (Project 1)***

Project 1 deals with the production of ammonia by applying magnetic field at ambient conditions using a nanocatalyst.  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> nanowires were developed and the effect of activation energy with and without magnetic field were studied. The kinetic models for ammonia and urea synthesis reactor were developed and simulation of both process were carried out.

**Stage 1** of CBA identified three deliverables which are; (i) established a new model for Thermo-magnetic induction reaction system, (ii) enhanced One-Step NCZ urea synthesis method, and (iii) a concept design of an integrated ammonia/urea processes.

**Stage 2** identified the advantages in that the production of ammonia by applying magnetic field at ambient conditions and by using nanocatalyst could reduce the energy consumption and time duration.

Based on the above, **Stage 3** qualified that the amount of nitrogen needed for the production of ammonia could be reduced by half from 120kg to 60kg to produce a given level of urea-based fertilizer, e.g. for the production of 3 tones paddy crop yield per season hectare.

As a result, **Stage 4** computed that, based on the total fertilizer needed in a year for the paddy plantation in Malaysia (2.5 plantation seasons per year and 688,207 total hectare), the green ammonia production technology developed in Project 1 is able to reduce the usage of nitrogen amounting to 103,231,050 kg. Converting 50% of this amount to nitrogen oxide (N<sub>2</sub>O), it is equivalent to 51,615,525 kg reduction of N<sub>2</sub>O or further conversion to 16,000,812 tons of CO<sub>2</sub>, emitted into the environment.

**Stage 5** monetized that, based on the global carbon trading price of 1 metric ton of CO<sub>2</sub> = USD11, the total carbon emission offset per year is worth USD176,008,932 or RM642.8 million (see Table 1).

Table 1: CBA Results for Project 1

Deliverables	Advantages	Qualification	Quantification	Monetization
D1: New Model for Thermo-Magnetic Induction Reaction System	Reduced energy usage	<b>Current production method:</b> 120 kg N is required to produce 3 tons of yield/season/ha	<b>One year = 2.5 paddy season</b> 60 kg N x 2.5 season/yr = 150 kg N/year	<b>1 metric tons CO<sub>2</sub> = USD 11<sup>[1]</sup></b>
D2: One-Step NCZ urea synthesis method	Reduced time consumption	<b>Enhanced production method:</b> 60 kg N is required to produce 3 tons of yield/season/ha	Using the current method, 50% of N will be converted to N <sub>2</sub> O. 1 N <sub>2</sub> O = 310 CO <sub>2</sub>	Total carbon emission offset = 16,000,812 x 11 <b>= USD 176,008,932</b>
D3: Concept design of an integrated Ammonia/Urea Processes.			Total hectarage of paddy in Malaysia = 688,207  Reduction of the usage in Nitrogen = 150 kg N x 688,207 ha <b>= 103,231,050 kg</b>  Conversion to N <sub>2</sub> O = 103,231,050 x 50% <b>= 51,615,525 kg</b>	Thus, <b>CO<sub>2</sub></b> can be sold to potential at the value of <b>USD 176,008,932 or RM 642.8 million</b>

[1] (based on <http://www.carbonbrief.org/blog/2014/05/the-state-of-carbon-pricing-around-the-world-in-46-carbon-markets/>)

### **Economic Value Analysis (Project 2)**

Project 2 deals with the formation of nanocatalyst system which comprised of catalyst support and catalyst that uses a microreactor for urea formation. Electrochemical and chemical deposition methods are used to produce the catalyst and catalyst support. The materials that were investigated are zirconia, tungsten trioxide, zinc oxide and titanium dioxide. Anodic process is selected to grow oxide support. The integrity and robustness of the material are being investigated either experimentally or by modelling.

**Stage 1** of CBA process identified following deliverables; the methods and materials used for urea formation i.e. (anodization method and Thermal Oxidation method) contributes significantly on material processing technology especially the bottom up approach of nanomaterial formation, it contributes in the progression and development of knowledge in the field of nanostructured semiconducting oxides, ceramic science, catalysis and chemical engineering.

**Stage 2** identified that the anodization of metal foils of zirconium, titanium and aluminum for the formation of oxide nanotube arrays will result in highly ordered alignment, and aspect ratio, their dimension can be controlled by varying anodization parameters, less chemicals are required, they are robust and crystallization can be induced at room temperature. The only disadvantage is that high level of amorphous nanotubes are produced and annealing is required.

Based on the above, *Stage 3* qualified that various methods are available to synthesize metal oxide such as anodization, sol gel, hydrothermal and template assisted method. However, in this study anodization and thermal oxidation method is chosen. These methods are chosen because they are cost effective, less time consuming simple and fast. Hydrothermal method requires high temperature and pressure, additional chemicals required in producing the metal oxide which are costly, and time consuming. Sol gel method require multiple steps and extra chemicals to synthesize metal oxide as compared to anodization method.

*Stage 4* of the CBA examination estimated that for the synthesis of catalysts, room temperature and atmospheric pressure is required. Similarly, the materials needed for catalyst formation are cost effective and a very less amount is required in each case. For example, ethylene glycol costs only RM50 for 2.5 liters that could be used for at least 50 samples. An amount of only 0.3 g of ammonium fluoride is needed per 1000 g of catalyst, while the cost for 1kg of ammonium fluoride is only RM150. Power requirements and the additives used are free of cost (available in labs) in this process. Likewise, the cost for preparation of iron foils is merely RM250/50 samples.

The CBA examination on Project 2 provided the necessary information about the methods and materials required for catalyst formation. The output of this project will serve as input for value realization in Project1, 3, and 4. Therefore, *Stage 5* will not provide any monetary value per se for Project 2 (see Table 2).

Table 2: CBA Results for Project 2

Deliverables	Advantages/ Disadvantages	Qualification	Quantification (Cost)	Monetization
<p>D1: The formation of the ONT will contribute significantly on materials processing technology especially the bottom up approach of nanomaterials formation.</p> <p>D2: Contribute towards the progress in the development of nanostructured semiconducting oxides, ceramic science, energy (especially in the field of solid oxide fuel cell), catalysis and chemical engineering.</p> <p>D3: Advanced characterizations and numerical modelling can lead to new findings especially in revealing novel</p>	<p><b>Advantages</b></p> <ul style="list-style-type: none"> <li>Highly ordered alignment</li> <li>High aspect ratio</li> <li>Dimension can be controlled by varying anodization parameter</li> <li>Less chemical used</li> <li>Robust</li> <li>Crystallization can be induced at room temperature</li> <li>Vertically oriented from the surface</li> </ul> <p><b>Disadvantages</b></p> <ul style="list-style-type: none"> <li>Amorphous nanotubes are produced and</li> </ul>	<p><b>Method used: Anodization Method</b></p> <p>Compare to other method, Hydrothermal method required longer time process, high temperature and pressure, lots of chemical involve producing the metal oxide which can be translated into high cost (money) to spend, wasting time and etc.</p> <p><b>Thermal oxidation</b></p> <p>thermal oxidation, it only requires heat to</p>	<ul style="list-style-type: none"> <li>Room temperature 27°C</li> <li>Ambient pressure (no pressure)</li> <li>Platinum (material) cost ± RM4000 (long-term used)</li> <li>Ethylene glycol 2.5L cost RM50 (for 50 sample)</li> <li>Power supply/machinery (FOC/lab)</li> <li>Ammonia fluoride (NH<sub>4</sub>F) 2 sample = 0.3g = 1000g/ 0.3g = <b>3.333 times</b></li> <li>1 kg of NH<sub>4</sub>F = RM150</li> <li>Additive (FOC)</li> <li>Foil (material)</li> </ul>	<p>All cost from Project 2 will be input to Project 1, Project 3, and Project 4.</p>

<p>properties of oxide in nanotubular form.</p> <p>D4: This contributes to the advancement of knowledge in the field of nanoscience and nanomaterials.</p>	<p>annealing is needed.</p>	<p>produce metal oxide</p>	<p>Ti foil = <math>\text{TiO}_2</math> = 10cm x 20cm<sup>2</sup> = <b>RM100</b> (100 sample)</p> <p>Fe foil = <math>\text{Fe}_2\text{O}_3</math> = 10cm x 10cm<sup>2</sup> = <b>RM250</b> (<math>\pm</math> 50 sample)</p>	
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### ***Economic Value Analysis (Project 3)***

Project 3 deals with processing biodegradable urea granules. Binder containing starch /PVA /glycerol was developed and mixed well with urea during granulation process. Optimum parameter or lab-scale fluidized bed granulator have been developed. Biochar as a highly potential binder material impregnated with urea to reduce the mineralization and retain a more nitrogenous compound in soil.

**Stage 1** of CBA identified three deliverables which are; (i) designed new approach incorporating coating process within the granulation system, (ii) established self-sustain granulation process by using the ammonia waste as an energy source for the ammonia fuel cell generator, (iii) established integrated granulation-coating technology.

**Stage 2** identified the advantages of using starch/PVA/glycerol and processing with biodegradable urea granules which are; it reduces the gas emission, and increases the output up to 12.73 %.

Based on the above, **Stage 3** qualified that the cost of normal urea is RM109.40/hectare whereas, the cost of Bio-UF is RM566.30. The difference of cost between the normal and Bio-UF is RM 456.90/hectare. The obtained information from Project 1 indicates that in Malaysia paddy plantation seasons are 2.5 and total hectare of paddy is 688,207. By assuming rice yield per hectare is 3.82 tons. The results show that by adapting Bio-UF (new fertilizer), the yield/hectare will increase to 4.31 tons. The difference in yield/hectare between the normal and Bio-UF is 0.49 tons.

As a result, **Stage 4** computed that, in Malaysia the sale of paddy in one season is RM 1,300. By using the normal urea the sale of paddy is equivalent to RM 4,966 (rice yield per hectare is 3.82 tons using normal urea), whilst by using the Bio-UF the sale will be equivalent to RM 5,603 (rice yield per hectare is 4.31 tons using Bio-UF).

**Stage 5** indicates that the paddy plantation in Malaysia=1.7 million hectare/year. The Bio-UF produced in Project 3 is able to increase the yield to 843.1 million tons/per year and the cost will also increase to RM 786.1 million/year. However, the yield will lead to a net increase in benefit value of RM 1,095.97 million/year. Hence, the total value realization using Bio-UF will be equivalent to RM309.9 million (see Table 3).

Table 3: CBA Results for Project 3

Deliverables	Advantages	Qualification	Quantification	Monetization
D1: new approach incorporating coating process within the granulation system.	Reduced gas emission (ammonia)	Cost of Normal urea = <b>RM 109.40 /hectare</b> <sup>[3]</sup>	Sales of Paddy (per season) = <b>RM 1,300</b> <sup>[1]</sup>	Total hectarage per year = 688,207 x 2.5 = 1,720,517.5 = <b>1.7 million hectare</b>
D2: self-sustain granulation process by using the ammonia waste as an energy source for the ammonia fuel cell generator.	Increased yield by 12.73 %	Cost of Bio-U Fertilizer = <b>RM 566.30 /hectare</b> <sup>[4]</sup>	Sales of Paddy using Normal urea/hectare = RM 1,300 x 3.82 = <b>RM 4,966</b>	Increase in yield per year = 1,720,517.5 hectare x 0.49 tons = 843,053.58 tons = <b>843.1 million tons</b>
D3: integrated granulation-coating technology.		Different cost = <b>RM 456.90 /hectare</b>	Sales of Paddy using Bio-U Fertilizer/hectare = RM 1,300 x 4.31 tons = <b>RM 5,603</b>	Increase in cost per year = 1,720,517.5 hectare x RM 456.90 = RM 786,104,445.75 = <b>RM 786.1 million</b>
		One year = <b>2.5 paddy season</b> <sup>[1]</sup>		Increase in gross value per year = 843,053.58 tons x RM 1,300 = RM 1,095,969,654 million = <b>RM 1,095.97 million</b>
		Total hectarage of paddy in Malaysia = <b>688,207</b> <sup>[2]</sup>		Value using Bio-U Fertilizer = RM 1,095,969,654 – RM 786,104,445.75 = RM 309,865,208.25 = <b>RM 309.9 million</b>
		Assuming rice yield per hectare = <b>3.82 tons/hectare</b> <sup>[2]</sup>		
		Adapting new fertilizer (Bio-U) <sup>[3]</sup> will increase yield by 12.73% = 3.82 tons + (3.82 x 0.127) = <b>4.31 tons/hectare</b>		
		Different yield = 4.31 - 3.82 = <b>0.49 tons/hectare</b>		

[1] Result from data collection conducted by Project 7; [2] Malaysia Agribusiness Directory (2013-2014); [3] Result from webpage; [4] Result from Project 3.

#### **Economic Value Analysis (Project 4)**

Project 4 deals with multifunctional layers of controlled release fertilizer for greener environment. Tapioca starch was chemically modified with urea in the presence of borate which act as a cross linker and catalyst.

**Stage 1** of CBA identified three deliverables which are; (i) Project 4 enhances new knowledge in preparation of cross linked starch and novel geopolymer and geopolymer-composite membrane for controlled release urea fertilizer, (ii) acquired new knowledge in the production of multilayer coating of new controlled release urea fertilizer using fluidized bed methods, (iii) project 4 delivered new cost effective and environmentally controlled release fertilizer for commercial production.

**Stage 2** identified that by using multifunctional layers to produce controlled release fertilizer have various advantages which are; the control release fertilizer can be produced by using

waste, it's cheaper, consist of waste (fly ash) and only one chemical solution (NaOH) is required, and it is non-degradable but harmless as the polymer contains the same element as in the mineral (silica and alumina).

Based on the above, **Stage 3** qualified that the cost of normal urea is RM109.40/hectare whereas, the cost of Geo- Coated urea is RM 240/hectare. The difference of cost between the normal and Geo-Coated urea is RM130.60/hectare. Based on the information from Project 1, in Malaysia paddy plantation seasons are 2.5 and total hectarage of paddy is 688,207. By assuming rice yield per hectare is 3.82tonne. The results show that by adapting new fertilizer Geo-Coated, the yield/hectare will increase to 4.31tonne. The difference in yield/hectare between the normal and Geo-Coated urea is 0.49tonne.

**Stage 4** indicates that, in Malaysia the sale of paddy in one season is RM1, 300. By using the normal urea the sale of paddy is equivalent to (1300 x 3.82) RM4, 966 tons, whilst by using the Geo-Coated urea the sale will be equivalent (1300 x 4.31) to RM5, 603.

**Stage 5** computed the monetary value using Geo-Coated urea, for the paddy plantation in Malaysia (2.5 plantation seasons per year and 688,207 total hectarage), indicates that the total paddy plantation in Malaysia = 1.7 million hectare/year. The paddy yield by using Geo-Coated urea will be 843.1 million ton/year and the cost will be RM 224.7 million. However, the yield will lead to a net increase in benefits value of RM1, 095.97 million/year. Hence the total value realization using Geo-Coated Urea will be equivalent to RM 871.3 million (see Table 4).

Table 4: CBA Results for Project 4

Deliverables	Advantages	Qualification	Quantification (lab scale)	Monetization
D1: the novelty of this research is in the new knowledge in preparation of cross linked starch and novel geopolymer and geopolymer-composite membrane for controlled release urea fertilizer.	Can be produced utilizing waste  Cheap	Cost of Normal urea = <b>RM 109.40 /hectare</b> <sup>[4]</sup>  Cost of Geo-Coated urea = <b>RM 240.00 /hectare</b> <sup>[6]</sup>	Sales of Paddy (per season) = <b>RM 1,300/tons</b> <sup>[1]</sup>	Total hectarage per year = 688,207 x 2.5 = 1,720,517.5 = <b>1.7 million hectare</b>
D2: will acquire new knowledge in the production of multilayer coating of new controlled release urea fertilizer using fluidized bed methods.	Consist of waste (fly ash) and only one chemical solution used (NaOH)  Non degradable but harmless as the polymer contains the same element as in the mineral (silica an alumina)	Different cost = <b>RM 130.60 /hectare</b>  One year = <b>2.5 paddy season</b> <sup>[1]</sup>  Total hectare of paddy in Malaysia = <b>688,207</b> <sup>[2]</sup>  Assuming rice yield per hectare = <b>3.82 tons/hectare</b> <sup>[2]</sup>	Sales of Paddy using Normal urea = RM 1,300 x 3.82 tons = <b>RM 4,966</b>  Sales of Paddy using Geo-Coated urea = RM 1,300 x 4.31 tons = <b>RM 5,603</b>	Increase in yield per year = 1,720,517.5 hectare x 0.49 tons = 843,053.58 tons = <b>843.1 million tons</b>  Increase in cost per year = 1,720,517.5 hectare x RM 130.60 = RM 224,699,585.50 = <b>RM 224.7 million</b>
D3: new cost effective and environmentally		<b>Adapting new fertilizer (Geo-Coated)</b> <sup>[3]</sup> will increase yield by 12.73% = 3.82 tons + (3.82 x 0.127) = <b>4.31 tons</b>		Increase in gross value per year = 843,053.58 tons x RM 1,300 = RM 1,095,969,654 million = <b>RM 1,095.97 million</b>

controlled release fertilizer for commercial production.		Different yield = 4.31 - 3.82 = <b>0.49 tons</b>	value using Geo-Coated urea = RM 1,095,969,654 – RM 224,699,585.50 = RM 871,270,068.50 = <b>RM 871.3 million</b>
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[1] Result from data collection conducted by Project 7; [2] Malaysia Agribusiness Directory (2013-2014); [3] Result from Project 5; [4] Result from webpage; [6] Result from Project 4

### Findings and Discussions

The agriculture sector has been considered a strategic sector and has always been given special attention by the Malaysian government for it contributes rather significantly to the country's Gross Domestic Product (GDP), i.e. RM56,095 million in 2013, (7.1%) a slight decrease from 7.3 % in 2012 (ETP, 2015). The increasing population in Malaysia necessitates the increase of food production. Rice/paddy is considered as a staple food in Malaysia, through which its farming provides livelihood to 300,000 paddy farmers in the country [4]. The annual growth rate of rice production from year 2000 to 2013 was about 1.47% and the production of rice increased from 2.14 million metric tons (MT) in 2000 to 2.63 million MT in 2013. However, the Self-Sufficiency Level (SSL) of rice for Malaysia was 70% in 2000, 72% in 2007 and it increased to 74% in 2013 (Liew et al., 2010). Consistent with the National Agriculture Policy (NAP), the Malaysian government wishes to escalate the SSL of paddy.

The SSL of paddy production can be achieved by effective fertilizer application. Malaysia is a dynamic player as a consumer and producer of fertilizer. But most of the fertilizer used in Malaysia is produced out of the country. The total value of fertilizer imported into Malaysia has been on the rise from RM 1.47 billion in 2003 to RM 3.4 billion in 2007 and this has caused huge foreign exchange losses to the country (Sabri, 2009). This indicates that there is a large market potential for locally produced fertilizers as import substitute as well as for local producers to move up the value chain. The introduction of the new eco-friendly green fertilizer product by OneBaja research program is an example of a home grown green fertilizer with a controlled release mechanism for the benefit of domestic paddy farming.

The OneBaja product is supposed to save time, cost, and labor in the application frequency of the fertilizer in paddy plantation as compared to the conventional methods of fertilizing the crops (as it incorporates the controlled release mechanism of urea absorption by the plant). In addition, the development of the new technology to produce the green fertilizer for paddy farming will tremendously reduce its carbon foot print along its value chain. For instance, in Project 1 of the OneBaja program, the research indicates that the production of the green fertilizer which is low in nitrogen content, if applied in the entire paddy field in Malaysia, will reduce the emission of Nitrogen Oxide (N<sub>2</sub>O) (1 N<sub>2</sub>O = 310 CO<sub>2</sub>) by about 51.6 million kg per year; translating to the reduction of carbon dioxide emission of approximately 16 million metric tons per year.

In a nutshell, the potential benefit value of the OneBaja research program, i.e. through its expected new technology development for the production of the green fertilizer as well as its socio-economic benefits to the paddy farmers, has been validated by the cost-benefit analysis (CBA) presented earlier. The CBA results show that the OneBaja research program can generate the benefits value (through the monetization of the projected deliverables) equivalent to RM 1,824 million per year (See Table 5 below).

Table 5: Summary of Results from CBA examination

Project	CBA Calculation	Remarks
Project 1	RM 642.8 million	Reduction in carbon emission
Project 2	N/A	All cost P2 will be input to P1, P3, P4
Project 3	RM 309.9 million	Increased in revenue by using Bio-U fertilizer
Project 4	RM 871.3 million	Increased in revenue by using Geo-coated urea
<b>TOTAL</b>	<b>RM 1,824 million</b>	

### Limitation of the Study

The benefits and value derived from the CBA examination for the OneBaja research program presented in this paper are based on the projected deliverables and the presumed monetary value of their direct and indirect benefits. As such, the computed monetary value of the deliverables/benefits should not be construed as a direct cash profit for the research program.

### Moving forward

The CBA examination for the OneBaja research program presented earlier focuses on the value created from a macro perspective vis-à-vis the RM12 million long-term research grant scheme (LRGS) received from the Malaysia Ministry of Higher Education. This paper, however, does not discuss in details and micro-examine the cost of production to produce the green fertilizer at plant level. Much less to identify its break-even production point since the current research activities are conducted on the “lab scale” basis. Pertinent data are not available to feed the analytical parameters for plant level production cost estimation. To perform the CBA at a micro or plant level, i.e. to identify the fixed and variable production costs in churning out the final product, which in turn is crucial for its product’s pricing strategy, can only be meaningfully computed once we have undertaken the “up-scaling” validation from the current “lab-scale” test. Nonetheless, this will be the ‘next phase’ of the study.

### Conclusion

This paper examines the cost and benefits of a research project whose funding is provided by the Ministry of Higher Education (MOHE) of Malaysia. The objective of this research project is to develop green fertilizer technology with control released mechanism. The results of the cost-benefit analysis for the OneBaja research program validate that it is a value-add research program since its projected benefits value is much more than the RM12 million grant provided, which is RM1,824 million to be specific. One Baja research program is an example of a productive yet significant partnership between the government, who acts as a funder, with the universities who deliver new ideas and technologies through their researchers, working together for the benefit of the country and its economy. Without the government grant, a productive research endeavor cannot be carried out. The significance of the government-universities partnership, in this case, shall yield benefits to the paddy farming fraternity where a new green fertilizer technology in the form of controlled-release fertilizer (CRF) developed in this research program will have a high and positive impact on the farmers’ socio-economic lives as well as the fertilizer’s carbon foot print in the environment.

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# Examining A New Paradigm of Enterprise Sustainability Risk Management

**Mustajab Ahmed Soomro\***

*Management and Humanities Department, Universiti Teknologi PETRONAS, Malaysia*

**Fong-Woon Lai**

*Management and Humanities Department, Universiti Teknologi PETRONAS, Malaysia*

*\*Corresponding author*

## **Abstract**

**Purpose** – The purpose of this paper is to conceptualize a framework, created to embed sustainability management and enterprise risk management (ERM). The framework will highlight the relevant theoretical underpinning to postulate that Enterprise Sustainability Risk Management (ESRM) will lead to Corporate Sustainability Performance (CSP).

**Research Methodology** – The conceptual framework espouses the notion to develop the measurement scales of the constructs and to examine the causal relationship between ESRM and CSP with reliability analysis, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM).

**Findings** – This paper developed a new paradigm of Enterprise Sustainability Risk Management which is underpinned by two pillars, namely Sustainability Management (SM) and Enterprise Risk Management (ERM). ERM is supported by four dimensions, i.e. structure, governance, and process. On the other hand SM is supported by four dimensions, i.e. employee relations, customer relations, environmental relations, and community relations. It is hypothesized that the developed ESRM framework will have a positive significant correlation with Corporate Sustainability Performance (CSP), which is measured by financial and non-financial benefits.

**Originality/Value** – The notion of ESRM is still new especially in Malaysia. It proposes an execution model by integrating SM and ERM. It provides a value maximization transmission mechanism supported by a theoretical underpinning which gives a perspective on how an integrated ESRM framework will lead to enhanced CSP.

**Keywords:** Corporate Sustainability; Corporate Sustainability Management; Enterprise Risk Management; Corporate Sustainability Performance; Institutional theory; Agency theory; Resource dependence theory; Stakeholder theory.

**Paper Type:** Conceptual Paper

## **Introduction**

Risk is inherent in every business transactions. Historically, risk was managed by transferring it to a third party by way of engaging in insurance contract. Over time, the concept of managing risk has revolved around handling financial related risks such as liquidity risk, interest risk,

foreign exchange fluctuations and credit risk. The risk management approach was then narrow in nature. It used a silo approach. Nevertheless, corporate risk management had evolved with more macro and holistic approach to address issues around all aspects in an organization's business activity (Lai, 2011).

This change in approach from silo to holistic had compelled corporation to start realizing the changing sphere of risk game and its multidimensionality. Almost everything in a business becomes a risk factor that will have a strong, direct, and distant impact on business, where traditional risk management failed to oversee these new emerging risks. Thus, the demand for incorporating a dynamic approach in corporate risk management had brought up a new concept named Enterprise Risk Management (ERM) in 1990 to face the constant and fierce changes in the business operating environment (Lai, 2011). The vision of ERM is to help the board of directors and senior management to develop a holistic and top-down view of enterprise-wide risks. These risks may otherwise hinder the organization to achieve its growth and objectives. The Global Phenomena of change (rise or decline) in energy prices, diminishing natural resources, uncontrolled change in climate, growing competition from emerging economics and trade liberalization, as well as the increasing awareness of consumers and their concern about the quality of life, health and safety, have a great impact on socio-economic development across the world. This escalation of consciousness propels the relevant stakeholders i.e. government, businesses, customers, local communities and alike, to convey the responsibility of promoting sustainability (Lai et al., 2012).

Sustainability is an emerging discipline. It is grabbing the attention of corporations, research communities, regulatory bodies and alike. Yet, it still means many things to many people. However, in the business settings, sustainability means Corporate Sustainability (CS), which tantamounts to corporate survival. For corporations focusing on sustainability is to ensure that the enterprise is able to manage the business risk whilst meeting the stakeholder expectations. The fine corporation citizens which seek to carry out their businesses in socially responsible and holistic manner should endeavor to put in place a Corporate Sustainability Framework within their management structure, with the vision that continuous growth and success is for the benefit of both the current and future generations (Lai et al., 2012). Hence, sustainability management (SM) focuses on embracing the opportunities and managing risks, while considering the limited availability of resources.

Since the past two decades, many business paradigms have evolved; but two paradigms – SM and ERM – have helped organizations to oversee risks relating to their strategic focus. The ultimate objective of both paradigms is to help increase an organization's long-term viability by identifying and managing key risks to the business. The SM and ERM implementations, however, more often than not have been apparently disparate initiatives in many organizations (Beasley and Showalter, 2015).

Literature shows that many organizations adopt either ERM or SM paradigm, but it has rarely been observed that they have integrated their sustainability and ERM processes together. This has created boundaries for organizations to realize their potential synergies. As such, a notion that espouses an integration of SM and ERM processes will be strategic (Beasley and Showalter, 2015; Yilmaz and Flouris, 2010).

Thus, this paper aims to discuss the theoretical argument towards integration SM and ERM. Based on the discussion, this paper proposes an implementation framework for Enterprise Sustainability Risk Management (ESRM) which integrates SM and ERM. ERM framework in most organizations considers the shareholders' interest as their core focus. The ESRM

framework proposed by this paper however, whilst retaining the essence of the primary ERM objectives, extends to embrace the rising concern of sustainability issues relating to the environment and society with the goal to achieve a balance corporate performance in terms of wealth creation for the shareholders as well as environmental protection and societal well being for the interest of other stakeholders.

### **Sustainability Defined**

Sustainability has been defined in a number of ways. The Brundtland Commission, formerly known as World Commission on Environmental Development (WCED), in 1987, defined sustainability as “*the development that meets the needs of the present without compromising the ability of future generations to meet their own needs*” (Breitstone et al., 2007; Faris et al., 2013; Saardchom, 2013). This definition has highlighted two major concepts relating to sustainability. *Firstly*, the concept of “Need”, which refers to the need of organization (value maximizing) and the need of stakeholders (present and future stakeholders). *Secondly*, the concept of “Limitations”, which imposed by the state of technology and social organization on the environments ability to meet the present and future needs.

### **Enterprise Risk Management Defined**

A paradigm shift has changed the view organizations see their risk management approach. Instead of using silo perspective of risk management, they start looking at the holistic approach for risk management. This approach is known as Enterprise Risk Management (ERM) (Gordon et al., 2009; Lai, 2011; Shad and Lai, 2015).

The term Enterprise Risk Management is used interchangeably with Enterprise–Wide Risk Management (EWRM), Holistic Risk Management (HRM), Corporate Risk Management (CRM), Business Risk Management (BRM), Integrated Risk Management (IRM), and Strategic Risk Management (SRM) (Hoyt and Liebenberg, 2011; Kleffner et al., 2003; Liebenberg, 2003; D’Arcy, 2001). Generally, the terms refer to the same generic concept and essence of the holistic approach of risk management. Nevertheless, each term may be defined differently based on its focus and primary concern to the organization (D’Arcy, 2001).

While the concept of ERM is widely cited and accepted today, it still lack of unified definition and standardized operational framework (Kleffner et al., 2003; Liebenberg, 2003; D’Arcy, 2001). Casualty Actuarial Society (CAS) defines ERM as “*The process by which organizations in all industries assess, control, exploit, finance and monitor risks from all sources for the purpose of increasing the organization's short and long term value to its stakeholders*” (D’Arcy, 2001). CAS categorizes the types of risk to the organization as hazards, operational, strategic and financial risk. The Committee of Sponsoring Organizations of the Tradeway Commission (COSO) in 2003 defined that “*Enterprise Risk Management is a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to reasonable assurance regarding the achievement of entity objectives*” (Faris et al., 2013). This definition is purposefully broad. It provides fundamental concept on how companies and other organizations should manage risk and provides a basis for application across organizations, industries, and sectors.

### **Sustainability Risk and Opportunity**

Sustainability should be considered as the firm's strategic management agenda instead of as an emerging area of risk. Many companies adopt and report sustainability due to the imposition of legislative requirements. Their main focus of sustainability lies on the economic factor, which is only one part of the wider philosophy of sustainability. According to Saardchom (2013), ERM framework fails to consider the social and environmental issues. Consequently, only sustainability risks that affect the financial liability or reputation to the company are addressed under the compliance risk management framework. Nevertheless, the impact of environmental and societal factors can radiate far beyond legal and compliance requirements. As such, full legal compliance does not necessarily guarantee corporate sustainability.

Many businesses view sustainability as a constraint for business. Nonetheless, if treated proactively, it can create opportunities for the businesses. Companies that believe sustainability risks possess in-built opportunities and leverage the talent to capitalize those opportunities through process improvement and new product development, ultimately, will increase the stakeholders' value. Hence, sustainability risk can be turned into a source of competitive advantage if managed strategically (Saardchom, 2013).

The increasing awareness among the shareholders with regard to the company exposure, scarce resources, greenhouse gasses, consumption of energy as well as the effects of sustainability issues on reputation and quality of life, has imposed a huge pressure on senior executives and the board of directors to consider and invest in sustainability strategy. For example, General Electric (GE) is committed to energy and environmental friendly technologies. It has decided to put more focus on and create a new market globally for the products that are environment friendly. These products will help companies and emerging nations to meet the need for clean energy. GE has planned to reduce its energy consumption by up to 30% and reduce greenhouse gas emission by 1%. Another example is PepsiCo where it has committed to achieve its competitiveness and maintain its production by reducing the use of water by up to 20% across all manufacturing operations (Saardchom, 2013).

### **Sustainability Strategy and Enterprise Risk Management**

According to Pollard and Stephen (2008), environmental sustainability is inseparable from business sustainability and risk. Respect for ecosystems (Environment) and people (Social) is basically the fundamental unchallengeable value set of sustainability. The well-being of both human and eco-system is treated as the success of sustainability. Hence, an organization should recognize and respond to environmental, social and economic risks.

The traditional model of ERM tends to focus on internal and controllable risks for compliance and governance purposes but fails to assess business impact on society (Razali and Tahir, 2011).

Corporate ignorance on sustainability can be very damaging for business which may result in unexpected financial losses. A case in point of sustainability ignorance can be referred to the regulatory and public image reaction in the wake of financial crisis in the US in 2008. Several established reputable financial institutions which had assumed large risk for potential huge profit had succumbed to the full blown of the crisis which had resulted in the loss of trust from their customers. The reputation of the entire banking industry, to a large extent, had also been tarnished (Lam and Quinn, 2014).

Another example is related to Hindustan Coca-Cola Beverages (HCCB), a subsidiary of Coca-Cola Company. After using more water in its production plants, it has come to realize the

importance of managing sustainability in its strategy. Similarly, when PepsiCo was trapped under the excessive use of water in 2004, it started to implement water balance program. The objective was to reduce wastage of water usage. PepsiCo's sustainability policy was achieved through initiatives in agriculture (i.e. partnership with farmers named as "Farmers' Friend"), recycling, and recovery (Lam and Quinn, 2014).

The concept of sustainability was highly emphasized in the early 1990 by the United Nations Conference on Environment and Development (UNCED). Although the early policy statements for sustainability have addressed environmental stewardship very clearly, they failed to create targets in terms of numbers and success metrics. Nonetheless, they have since been improved with the focus on quantifiable objectives and target dates for achieving sustainability by the nations in the area of health and safety, environment, corporate governance, shareholders relations, customer satisfaction and community out reach (Lam and Quinn, 2014).

According to Saardchom (2013), the integration of sustainability strategy and ERM improves the environmental and social performance of the firm by keeping the cost of risk below or equal to the minimal level.

### **Proposed Enterprise Sustainability Risk Management Framework**

This paper proposes an ESRM execution framework which is made up of 7 dimensions, namely structure, governance, process, employee relations, customer relations, environmental relation, and community relations. These seven dimensions take into account the internal and external factors of active sources for risk, which can create hindrance to achieving organizational goals towards corporate sustainability. For instance, the *structure* dimension is developed to cover two factors, i.e. SM and ERM definition and performance measurement (shown as E1 and E2 in Figure 1 and Table 1). The *governance* dimension, on the other hand, is to cover two areas, i.e. information and roles, and compliance. The *process* dimension is to include three areas, i.e. integration of business strategy and objectives, risk identification, and risk quantification. The *employee relation* dimension is to cover two areas, i.e. responsible human resource management, employee motivation. The *customer relation* dimension is to stress on three areas, i.e. multidimensionality of consumer, quality product and service offering, and information disclosure. The *environmental relation* dimension is to highlight three areas, i.e. product technologies, process technologies, and end-of-pipe control and management system. The *community relation* dimension of ESRM framework is to emphasize on three areas, i.e. education, health, and housing and society.

Based on the argument of the relevant theories (i.e. institutional, agency, resource dependence, and stakeholder theory), we posit that the firm can create value for stakeholders and increase the corporate sustainability performance by executing the proposed ESRM program. Our conceptual framework espouses the positive causal relationship between ESRM and corporate sustainability performance. ESRM execution will lead to some financial or non-financial (social) benefits to the firm and stakeholders. The benefits include output such as the reduction in earnings volatility (Lai et al., 2010), strengthening the confidence of management in business operations and risk monitoring, creating smooth governance procedures, stirring corporate reputation, improving clarity of organization-wide decision making and chain of command, encouraging corporate entrepreneurship, boosting profitability, increasing positive relationship with communities, new product development, increasing ability to identify and seize new

opportunities, motivating employees, and increasing customer base (Lai et al., 2010). Benefits derived from the execution of ESRM framework may contribute to the distinctive competitiveness of an organization. The espoused causal relationship is depicted by the **arrow A** in Figure 1.

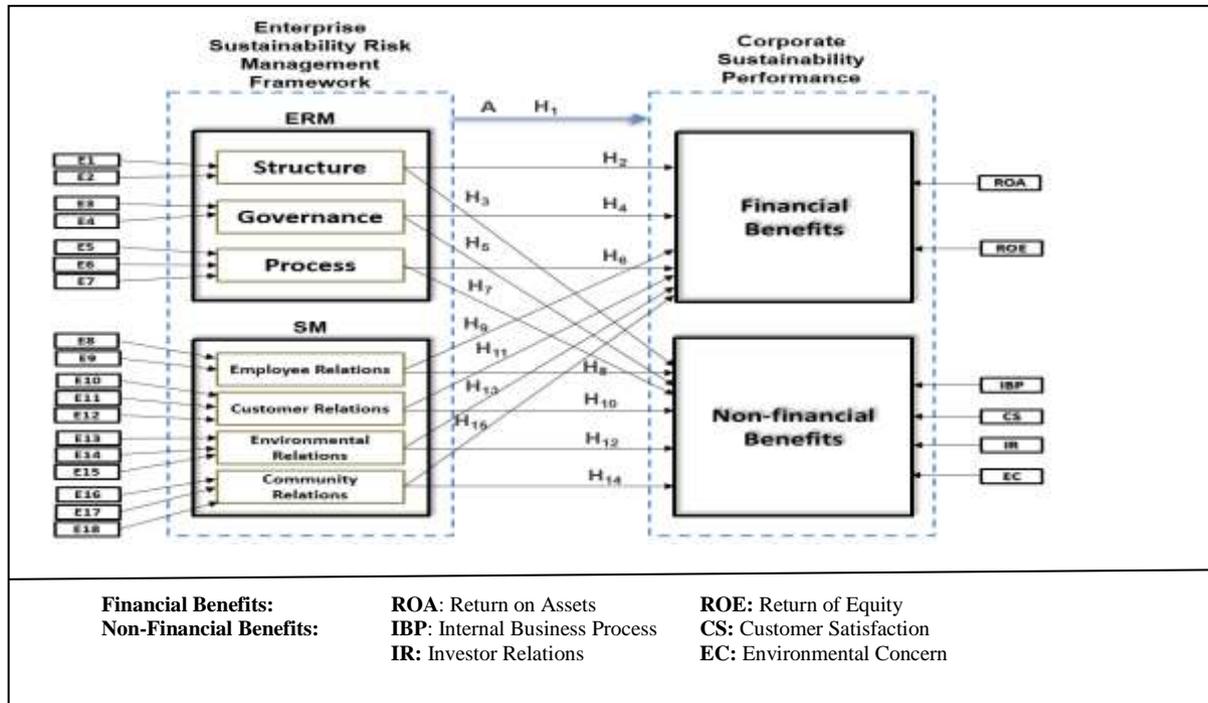


Figure 1: Conceptual Framework Diagram

This study adopts financial and non-financial performances as the measurements for corporate sustainability performance which serves as the dependent variables in the conceptual framework. Derivation of tangible and intangible benefits from the execution of ESRM framework will lead to increased Return on Assets (ROA), Return on Equity (ROE) (financial performance), improved Internal Business Process (IBP), increased Customer Satisfaction (CS), stronger Investor Relations (IR), and increased competitive advantage through Environmental Concern (EC) (non-financial performance). Accumulatively, financial performance in terms of ROA and ROE indicates a solid financial and operational performance to the stakeholders. Non-Financial performances include competitive advantage, tactical knowledge of employees, organizational culture and structure, processes, practices as well as technology.

Table 01: Elements of ESRM Framework

Code of Elements	Description of Elements
E1	SM and ERM Definition
E2	Performance Measurement
E3	Information and Roles
E4	Compliance
E5	Integration of business Strategy and Objectives
E6	Risk Identification and Response
E7	Risk Quantification
E8	Responsible Human Resource (Management)
E9	Employee Motivation
E10	Multidimensionality for Consumers
E11	Quality Product and Servicing Offering
E12	Information Disclosure
E13	Product Technologies
E14	Process Technologies
E15	End-of-Pipe Controls and Management Systems
E16	Education
E17	Health
E18	Housing and Security

### The Theoretical Underpinning

The literature of sustainability management (SM) and enterprise risk management (ERM) presents various theories and approaches to espouse ideas for the subjects matter. The studies by Clarke (1998) and Lantos (2001) presented two approaches, namely the classical and stakeholder approaches, with regard to the role of the firms in the society. According to Brummer (1991), as per the classical approach, companies should operate in the society as economically responsible rather than socially or environmentally responsible. Freeman (1984) on the other hand, arguing from the stakeholder approach, postulated that firms are responsible to satisfy their various stakeholders rather than just their shareholders alone. This argument is supported by Branco and Rodrigues (2006). Most ERM literature hold the classical view in which the ultimate objective of ERM implementation should maximize companies' profits as well as enhancing the shareholders' value (Lai et al., 2010; Lai, 2011; Shad and Lai, 2015). Some literature argues that the concept and framework of ERM lacks consideration to the external risk such as the environmental and societal risks (Saardchom, 2013; Pollard and Stephen, 2008; Faris et al., 2013; Beasley and Showalter, 2015). It is therefore, imperative to integrate Sustainability Management (SM), which shall be sensitive and response to the environment and social issues in the firm's external operating eco-system, to the strategic focus of the firm in its preoccupation to generate profit and to maximize shareholders' wealth. This integration of SM to the firm's ERM processes shall bode well to close the existing gap of external risk oversight that may exist which is aimed at safeguarding external stakeholders' interest. With this respect, this study proposes the Enterprise Sustainability Risk Management (ESRM) execution framework which integrates sustainability management and enterprise risk management. We postulate this ESRM framework by referring to the theories of organizational

behavior (i.e. institutional theory), governance (i.e. agency theory, resource dependence theory), and strategic management (i.e. stakeholder theory) as the framework's theoretical underpinning. For instance, the institutional theory supports the notion of meeting the emerging stakeholder expectations, government regulations, and to ensure the organizational legitimacy by conforming to the rules and norms of the institutional environment. Agency theory on the other hand, hypothesizes that the governance mechanism will reduce the scope of information asymmetries and opportunistic behavior by aligning the principal and agent interests. Resource dependence theory suggests for environmental relations by reducing the environmental interdependencies and related uncertainties. Stakeholder theory meanwhile, emphasizes on considering stakeholders in strategic decisions of organization instead of just focusing on stockholders only.

### **Hypotheses Development**

The conceptual framework of ESRM espouses its execution towards corporate sustainability performance (CSP). By implementing the proposed ESRM framework, it will result in some tangible and intangible benefits (in the form of financial and non-financial measures) to the organization and will increase the value of the firm. Based on the theoretical argument presented, we can develop the below hypotheses to validate the theorized causal relationship between ESRM implementation (measured through its elements execution intensity) and corporate sustainability performance (whose measures as shown in Figure 1);

H<sub>1</sub>: ESRM implementation will lead to corporate sustainability performance.

H<sub>2</sub>: There is a significant (*positive*) relationship between ESRM structure and financial benefits.

H<sub>3</sub>: There is a significant relationship between ESRM structure and non-financial benefits.

H<sub>4</sub>: There is a significant relationship between ESRM governance and financial benefits.

H<sub>5</sub>: There is a significant relationship between ESRM governance and non-financial benefits.

H<sub>6</sub>: There is a significant relationship between ESRM process and financial benefits.

H<sub>7</sub>: There is a significant relationship between ESRM process and non-financial benefits.

H<sub>8</sub>: There is a significant relationship between ESRM employee relations and financial benefits.

H<sub>9</sub>: There is a significant relationship between ESRM employee relations and non-financial benefits.

H<sub>10</sub>: There is a significant relationship between ESRM community relations and financial benefits.

H<sub>11</sub>: There is a significant relationship between ESRM community relations and non-financial benefits.

H<sub>12</sub>: There is a significant relationship between ESRM environmental relations and financial benefits.

H<sub>13</sub>: There is a significant relationship between ESRM environmental relations and non-financial benefits.

H<sub>14</sub>: There is a significant relationship between ESRM customer relations and financial benefits.

H<sub>15</sub>: There is a significant relationship between ESRM customer relations and non-financial benefits.

### Proposed Analytical Model

In this study, it is hypothesized that the ESRM and its dimensions (i.e. *structure, governance, process, employee relations, customer relations, community relations, and environmental relations*) will have a positive causal relationship with corporate sustainability performance (CSP). To examine the causal relationship and to test the hypothesis relating to the ESRM execution and CSP, we propose to employ statistical procedures Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM).

### Conclusion

This paper highlights the importance of Sustainability Management (SM) and Enterprise Risk Management (ERM) on Corporate Sustainability Performance (CSP). This paper proposes the integrated Enterprise Sustainability Risk Management (ESRM) framework to guide companies to execute the necessary elements to manage the sustainability (environment and societal issues) and enterprise risks facing the organizations while pursuing its economic goals. This paper also theorizes the integration of SM and ERM into the proposed ESRM framework for value creation. The ESRM framework aspires to achieve corporate sustainability performance by factoring in environmental and stakeholder concerns, apart from the financial measures.

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# Economic Value Added Analysis for Enterprise Risk Management

**Fong-Woon Lai\***

*Management and Humanities Department, Universiti Teknologi PETRONAS, Malaysia*  
Email: laifongwoon@petronas.com.my

**Muhammad Kashif Shad**

*Management and Humanities Department, Universiti Teknologi PETRONAS, Malaysia*

*\* Corresponding author*

## **Abstract**

**Purpose** – The aim of this paper is to examine the impact of Enterprise Risk Management (ERM) on firm's performance measured through Economic Value Added (EVA) analysis.

**Research Methodology** – The study develops four regression models to test the effect of ERM implementation on the firms' performance through Net Operating Profit After Tax (NOPAT), Weighted Average Cost of Capital (WACC) and Return On Invested Capital (ROIC).

**Findings**- The results of the study reveal that ERM implementation has significant positive impact in reducing the WACC and increasing the NOPAT and ROIC of the firms listed in Bursa Malaysia.

**Originality/Value** – This study undertook an empirical test on several hypotheses to ascertain the significance of hypothesized relationships developed in relation to the research framework. The research framework postulates a value based measurement tool in the form of economic value added analysis to gauge the firm's performance as a consequence from its ERM implementation.

**Keywords:** Enterprise Risk Management, Economic Value Added, Firm Performance.

**Paper Type:** Research Paper

## **Introduction**

Enterprise Risk Management (ERM) is a prevalent approach to risk management. ERM was introduced in 1990's and has attracted extensive global attention including by all types of organizations in Malaysia (Ghazali and Munab, 2013). The main objective of any organization is to maximize their shareholders' value. Towards this objective realization, companies endeavor in improving their shares value by increasing the company's earning capabilities. In addition, successful enterprises intentionally create new business risks; to create value for their shareholders (Lai F.W. et al., 2011). Hence, it is crucial to manage those risks.

Organizations need proper risk management program which enables identification, treatment and management of risk. According to reference Nicolas and Walker (2012), a pressure has increased on the companies in the US to identify and manage their risks. Furthermore, Security Exchange Commission of the US passed the rule 33-9089 in 2009 emphasizing risk oversight by the board of directors. The influences of external and internal factors to businesses, as well

as the rapid growth of economies, have also triggered more demand and enforcement of proper risk management. Despite all of the above, nonetheless, an issue to contemplate is whether ERM implementation within the firm improves performance. Some studies stated that organizational ERM implementation do not have any effect on a firm's value (Tahir and Razali, 2011; McShane et al., 2011). On the other hand, however, studies by Shad and Lai (2015); Hoyt and Liebenberg, (2011); Lai (2014); Yazid et al., (2011) provide evidences that ERM has significant positive impact on the firms performance.

This study was undertaken under the backdrop of the contradictory findings from the literature pertaining to ERM impact on firm's performance. Specifically, this study seeks to validate if ERM implementation brings positive results to a firm's performance by employing Economic Value Added analysis. As such, this study attempts to provide an empirical evidence on the effect of ERM implementation by adopting EVA analysis as a proxy for a firm's performance measurement. EVA is a better measurement tool as it computes performance by incorporating a firm's cost of capital. The objective of this study, therefore, is to investigate the impact of ERM implementation on firm performance by employing Economic Value Added (EVA) analysis as proxy for firm performance.

## **Literature Review**

### ***Enterprise Risk Management (ERM) and Firm Performance***

Current literature provides mixed empirical evidences and argument on the relationships between enterprise risk management and firm performance. Numerous studies concluded positive relationships between ERM and firm performance. Hoyt and Liebenberg (2011) provides evidences for positive impact of ERM in US insurance companies in terms of firm value proxied by Tobin's Q ratio. Hoyt and Liebenberg conclude an approximate 20 percent premium over the value of a firm due to ERM. According to Lai (2014), ERM implementation in organizations facilitate easier access to debt markets, reduce systematic risks and hence lowering risk premium from which the firm's cost of capital can be reduced. ERM implementation also enhance the firm's market valuation through price to earnings ratio of the firm's share since investors are willing to pay premium for the firm's shares due to the perceived improved risk profile. The findings of Lai (2014) is consistent with that of Hoyt and Liebenberg (2011).

ERM enhances firm's performance in terms of EVA by enhancing net operating margin and reducing capital structure costs (cost of debt and cost of equity). A company's capital structure is important as it ensures the firm's capabilities of meeting their shareholders' needs. These needs are met through dividend payments, debt servicing and other financial obligation such as paying of salaries. Moreover, capital structure is a significant part of EVA analysis. EVA comprises three main elements namely; Net Operating Profit after Tax (NOPAT), Weighted Average Cost of Capital (WACC) and Invested Capital (IC). This study shows there is a relation between ERM and firm performance enhancement whereby risk management can improve NOPAT and reduce cost of capital.

### ***Impact of ERM on Net Operating Profit After Tax (NOPAT)***

One of the advantages of enterprise risk management implementation cited by Lai (2014) is that of enhancing enterprise profitability. ERM provides an accurate guide for decision making, planning, control design and implementation. ERM improve the awareness of risks within the firm which helps in making better operational and strategic decisions (Nicolas and Walker,

2012). Better decision making enables the management to meet strategic goals, reduce earnings volatility, and increase profitability. ERM leads to higher sales by coping operational risks faced by companies. These risks have an inverse relationship with income derived by the firm. Risk monitoring and reporting can reduce operational risks, and enable the firm to focus on resources, creativity and development of different internal and environmental activities, which increases the revenue of the firm.

According to reference Hoyt and Liebenberg (2011), risk management can minimize the fluctuation of reported income. Lowering taxable income volatility will result in reducing tax payments over a complete business cycle as this will help in predicting corporate income tax to falls within an optimal and manageable range of tax brackets. The increase in sales revenue and profitability, coupled with the lowering of tax payments and cost of goods sold due to ERM shall impact the NOPAT component of the enterprise's EVA in a positive manner. Therefore, this study hypothesizes that:

H<sub>1</sub>: ERM implementation has positive effect on Net Operating profit after tax of the firms.

#### ***Impact of ERM on Weighted Average Cost of Capital (WACC)***

Enterprise risk management enables the firms to improve the information about their risk profile. Risk profile is the description of set of risks that a company is willing to take. A firm can reduce its cost of capital by sharing the accurate and exact information about the risk profile of the firm among the shareholders. The accurate disclosure of information is significant for the firms with multifarious operations, as these firms are tough to evaluate from outside. Disclosure and distribution of improved information with shareholders assist to reduce the information asymmetries and lead to minimize the cost of capital of the firm.

According to COSO (2004), ERM reduces firm's overall risk by reducing the firm's earning volatility and improve capital structure. Based on Opoku et al. (2014), capital structure is the composition of debt and equity financing required by the firm to finance their assets. Ramly and Rashid (2010) posits that the ultimate aim of risk management mechanism is linked to creating value by reducing firm's cost of capital. The value maximization literature argue that ERM minimizes the cost associated with external financing, reduce corporate taxes, and agency costs. This in turn, will lead to the reduction in cost of capital and hence, lowering the WACC component of the firm's EVA. Therefore, we hypothesize that:

H<sub>2</sub>: ERM implementation has a positive effect on reducing Weighted Average Cost of Capital.

#### ***Impact of ERM on Return on Invested Capital (ROIC):***

Enterprise risk management program helps business enterprises in proper circulation of funds, speeding up cash flow, reducing enterprise risks, and improving profitability. To boost the EVA it is crucial for the firm to increase the return on the invested capital. Invested capital of the firm is the fund provided for the firm to run its business. From the accounting perspective, a firm's capital is given by its long-term debts and owners' equity. ERM enables organization to avoid bankruptcy cost and improve profitability. According to Chang and Chen (2013), the bankruptcy of many enterprises are caused by poor risk management. The increase in volatility in return on invested capital increases the chance of bankruptcy. As such, to avoid the possibility of bankruptcy investors invest their capital in the firm with low business risks.

Enterprise risk management implementation ensures that the ownership of the company will not be transferred to debt holders through bankruptcy since debt holders will have the first claim of the firm’s assets in case of winding up. A firm can receive the advantages of tax treatment (interest tax shield benefits) if its capital is financed by debt. Nonetheless, a high gearing level in the firm’s balance sheet will add burden to servicing the debt in terms of interest expense. Hence, the firm needs to consider the bankruptcy and agency costs associated with debts financing. In the above light, the Trade-off theory argues that “firms trade off the benefits of debt and equity financing through an optimal capital structure that will minimize the cost of capital and maximize the firm value”. ERM, in this context, can contribute to minimizing the negative aspects associated with debt financing while amplifying its benefits. On that basis, we develop our hypothesis that:

H<sub>3</sub>: ERM implementation has a positive effect on return on invested capital.

**Methodology**

**Research Framework**

Figure 1 shows the key elements of the study. The research framework features an ERM implementation framework which highlights the positive and significant relationships with firm performance to be measured through EVA analysis. The research framework sees ERM framework as an independent variable whose implementation will have an impact on the firm NOPAT, WACC and ROIC the dependent variables.

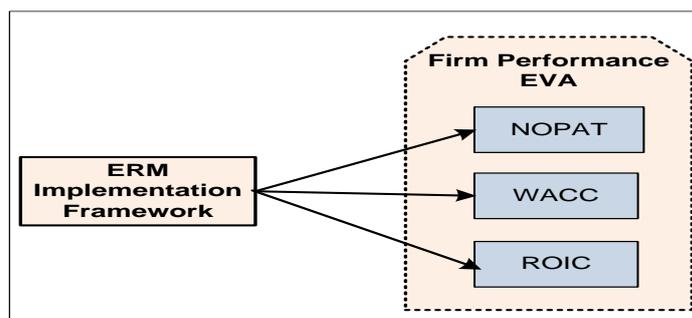


Figure 1: The Research Framework

**Research Design and Methodology:**

The study used both primary and secondary data. Primary data on ERM implementation (independent variable) is collected through email and drop-off survey method where the researchers went to the respondents’ offices to hand over the questionnaire forms together with the return address envelopes. The study adopts ERM implementation model introduced by Lai et al. (2011) (see Table 1).

The adopted ERM implementation model comprises three dimensions namely; *Governance*, *Structure* and *Process*. These three dimensions are classified into seven areas. A further fourteen elements used to operationalize these seven areas and these items, are measured on a five-point Likert scale.

Table 1: ERM Implementation Model

Dimensions	Areas	Elements
<b>Structure</b>	ERM Definition	Provide common understanding of the objectives of each ERM initiative
		Provides common terminology and set of standards of risk management
	Performance Measurement	Identifies key risk indicators (KRIs)
		Integrates risk with key performance indicators (KPIs)
<b>Governance</b>	Information and Roles	Provides enterprise-wide information about risk
		Enables everyone to understand his/her accountability
	Compliance	Reduces risk of non-compliance
		Enables tracking costs of compliance
<b>Process</b>	Integration of Business Strategy and Objectives	ERM strategy is aligned with corporate strategy
		Aligns ERM initiatives to business objectives
		Integrated across all functions and business units
		Integrates risk with corporate strategic planning
	Risk Identification and Response	Provides the rigor to identify and select risk responses (i.e. risk- avoidance, reduction, sharing and acceptance)
Risk Quantification	Quantifies risk to the greatest extent possible	

While secondary data for EVA factors (dependent variable), which are proxies for firms performance, are extracted through Thomson Reuters DataStream which contains all the financial information of listed companies globally, including Malaysian companies. The firm's performance is measured by employing EVA computation as:

$$EVA = NOPAT - (WACC \times IC)$$

Where,

EVA = economic value added, NOPAT = net operating profit after tax, WACC = weighted average cost of capital, and IC = invested capital.

For data collection, this study used stratified sampling method. The benchmark used to stratify the sample in this study is the market capitalization. There are thirteen market sectors as per Bursa Malaysia classification. This study carefully chosen top 120 companies from thirteen sectors based on market capitalization. Pearson Correlation Analysis and regression analysis are employed to examine and validate the relationships between the variables.

Table 1: ERM Implementation Framework's Dimensions, Areas and Elements

### **Population of the Study**

ERM is practiced by large corporations such as public listed companies (PLCs), multinational companies (Ghazali and Manab 2013). According to Lai et al., (2011), compared to non-listed companies PLCs are more aware to operationalize risk management program in their operations. As such, the PLCs become the target population for this research in Malaysia.

**Statistical Model Specification**

ERM implementation model have advocated a positive impact on firm’s performance. To investigate the impact of the ERM practices on firm’s performance, the study presents the following regression models written as:

$$Y_1 = \alpha_1 + \beta_1 X_1 + e_1 \dots \dots \dots \text{Model 1}$$

$$Y_2 = \alpha_2 + \beta_1 X_1 + e_2 \dots \dots \dots \text{Model 2}$$

$$Y_3 = \alpha_3 + \beta_1 X_1 + e_3 \dots \dots \dots \text{Model 3}$$

$$Y_4 = \alpha_4 + \beta_1 X_1 + e_4 \dots \dots \dots \text{Model 4}$$

Where,

$Y_1 = \text{EVA}$ ,  $Y_2 = \text{NOPAT}$ ,  $Y_3 = \text{WACC}$ , and  $Y_4 = \text{ROIC}$  (dependent variables)

$X_1 = \text{ERM implementation}$  (independent variable)

$\alpha_1, \alpha_2, \alpha_3, \alpha_4 =$  intercept of line of the corresponding model

$\beta_1, \beta_2, \beta_3, \beta_4 =$  the regression co-efficient of effect on factor,

$e_i =$  error terms

**Empirical Results**

**Regression Analysis**

In order to comprehend the dynamic of variance that occurred in dependent variables which is influenced by the independent variable, linear regressions analysis is performed. Four regression models were developed to evaluate the impact of ERM implementation (independent variable) on EVA, NOPAT, WACC and ROIC (dependent variables). Table 2 and 3 present the results of the regression analysis which indicate that all the models are significant at the 0.01 significance level. The R-square value represents the variance in dependent variable predicted by independent variable. For instance, the calculated value of R-square for EVA is 0.27, indicating that 27 percent of the corresponding variation in EVA of the firms is explained by ERM implementation. The R-square value for WACC is 0.226 depicting 22.6 percent variation in WACC reduction can be explained by ERM implementation. Similarly, R-square value for ROIC is 0.191 illustrating 19.1 percent variation in ROIC can be explained by ERM implementation. Also, the R-square value for NOPAT is 0.282 interpreting 28.2 percent variation in NOPAT can be explained by ERM implementation. The analysis of regression model coefficients shown in Table 3 indicates that for *Model 1* a positive beta co-efficient = 0.63 was found with p-value = 0.000 (< 0.05) and a constant = 1.479. Also for *Model 2* the positive beta co-efficient = 0.65 was found with p-value = 0.000 (< 0.05) and a constant = 1.42. For *Model 3* the positive beta co-efficient = 0.827 was found with p-value = 0.000 (< 0.05) and a constant = 0.734. Similarly, for *Model 4* also the positive beta co-efficient = 0.615 was found with p-value = 0.001 (< 0.05) and a constant = 0.957. Based on the results from Table 3 the four models are calculated as:

$$\text{EVA} = 1.479 + 0.63 \text{ ERM} + e_1 \dots \dots \dots \text{Model 1}$$

$$\text{NOPAT} = 1.42 + 0.65 \text{ ERM} + e_2 \dots \dots \dots \text{Model 2}$$

$$\text{WACC} = 0.73 + 0.82 \text{ ERM} + e_3 \dots \dots \dots \text{Model 3}$$

$$\text{ROIC} = 0.95 + 0.61 \text{ ERM} + e_4 \dots \dots \dots \text{Model 4}$$

These finding suggests that an increase in the ERM penetration level in organization necessarily guarantee enhancement of EVA, NOPAT, ROIC and reduction of WACC. The results are consistent with Shad and Lai, F.W. (2015b); Shad and Lai, F.W. (2015c); Lai F.W., (2015) because lower cost of capital and shareholders value could be generated by the ERM

implementation, which inevitably contributes to firm performance. Nonetheless, the value of R-square indicated in Table 2 is quite low (less than 30%) which suggests that firm value is not influenced to any great extent by the explanatory variable in the model (ERM implementation).

Table 2: Regression Results

Model	Dependent Variable	R	R-Square	Adjusted R-Square	Std. Error of the Estimate
1	EVA	0.520	0.270	0.264	0.584
2	WACC	0.476	0.226	0.220	0.861
3	ROIC	0.301	0.191	0.183	0.792
4	NOPAT	0.531	0.282	0.276	0.58

A. Predictors: ERM Implementation

B. Dependent Variable: EVA, WACC, ROIC and NOPAT

Table 3: Model's Coefficient

Model	Dependent Variable		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
1	EVA	(Constant)	1.479	0.365		4.059	0.000
		ERM	0.632	0.095	0.520	6.614	0.000
2	NOPAT	(Constant)	1.42	0.36		3.92	0.000
		ERM	0.65	0.09	0.531	6.81	0.000
3	WACC	(Constant)	0.734	0.537		1.367	0.174
		ERM	0.827	0.141	0.476	5.877	0.000
4	ROIC	(Constant)	0.957	0.684		1.399	0.165
		ERM	0.615	0.179	0.301	3.430	0.001

A. Dependent Variable: EVA, WACC, ROIC and NOPAT

### Conclusion

The objective of this paper was to investigate the impact of ERM implementation on the firms value measured through economic value added analysis among the Malaysian PLCs. Data was collected for the period of (2010-2014). The study employs regression analysis to test the impact of ERM implementation on EVA and its components. The results of the study suggests that ERM implementation is an important factor to enhance the firms value through increasing NOPAT, reducing WACC, and increasing ROIC. The relationships are empirically proven to be significant. The results also suggests that ERM possesses the largest explanatory power to

reduce WACC and increase NOPAT, as compared to the third factor of EVA namely ROIC. These results conclusively support the arguments made by ERM proponents. Such as, Ghazali and Manab (2013); Hoyt and Liebenberg, (2011); Lai, F.W. et al.,(2011). This study also lends credence for the usefulness of EVA analysis as a firm's performance appraisal of ERM implementation. For practitioner's and policy makers, this study provides an important input to better understand the significance of ERM implementation in managing risks and evaluating firms performance through EVA.

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# Evaluation of Training Effectiveness in Relation to Self-Efficacy and Training Facilities in a Malaysian Public Skill Training Institution

**Khulida Kirana Yahya\***

*Department of Human Resource Management, School of Business Management,  
Universiti Utara Malaysia, Kedah, Malaysia  
Email: khulida@uum.edu.my*

**Wan Shakizah Wan Mohd Noor**

*Department of Human Resource Management, School of Business Management,  
Universiti Utara Malaysia, Kedah, Malaysia  
Email: shakizah@uum.edu.my*

**Siti Zubaidah Othman**

*Department of Human Resource Management, School of Business Management,  
Universiti Utara Malaysia, Kedah, Malaysia  
Email: zubaidah@uum.edu.my*

**Mohd Faizal Mohd Isa**

*Department of Human Resource Management, School of Business Management,  
Universiti Utara Malaysia, Kedah, Malaysia  
Email: m.faizal@uum.edu.my*

**Abdul Razak Abd Manaf**

*Social Work Department, School of Applied Psychology, Policy and Social  
Work, Universiti Utara Malaysia, Kedah, Malaysia  
Email: a.razak@uum.edu.my*

*\* Corresponding author*

## **Abstract**

**Purpose:** This study examined the relationship between self-efficacy, training facilities and training effectiveness in a Malaysian Public Training institution.

**Design/methodology/approach:** A structured questionnaire were distributed to 500 graduates of a training institution during their convocation but only 215 can be used for further analysis due to incomplete responses. Hypothesis was tested using SMART-PLS 2.0.

**Findings:** The findings show that self-efficacy have significant influence on training effectiveness among the graduates. However, training facilities was not found to be associated with training effectiveness.

**Practical implications:** The study has made considerable contribution in understanding self-efficacy, training facilities and training effectiveness among graduates of the Malaysian training provider.

**Originality/value:** The Technical and Vocational Education (TVET) was introduced in Malaysia to assist and develop skill particularly among youth. TVET programs as tools that can develop skill and ability for employment when the youth complete their studies or training. The development of TVET program among youth is essential to develop high-skills future human capital. The mushrooming of TVET training institutions across the country is seen as an encouraging sign of developing future human capital. Although training is fundamental but the same time costly for the institutions, it is important for them to maximize the return on training investment by making training more effective.

**Research limitations/implications:** The research was limited in terms of respondents who were graduates of one public training provider in Malaysia.

**Keywords:** training effectiveness, self-efficacy, training facilities, public training institution, TVET

### Introduction

The Technical and Vocational Education (TVET) was introduced in Malaysia to help develop skill among the youth. Lack of skills that are valued in global and local among young people might affect the economic growth, jobs and income (Aring, 2011). According to the World Bank's 2007 Report, about 1.3 billion of young people between age 15 to 30 years old now live in the developing world and nearly half of them are unemployed. Aring (2011) stated that, TVET being one of the tools that can assist and develop young people skill particularly after school. A study by Ivan et al. (2008) stated that TVET program focused on training youth to equip them with practical skills.

In the Malaysian context, TVET is provided by schools and training institution under the supervision of various ministries such as Ministry of Education, Ministry of Human Resource and Ministry of Women, Family and Communication Development (Maizam and Razali, 2013). The programs are designed to ensure better career opportunities and marketable abilities among the youth. The TVET programs also emphasize on workforce productivity. This is to ensure the achievement of Malaysian Vision 2020, to produce qualified and quality skill manpower for the nation. The issue of low quality and quantity of skills trainee output from the Malaysian technical education system should be addressed immediately in order to enhance investors' confidence in the country. This study examines the trainees' perception on the factors that influence training effectiveness provided by the training providers. Thus, the objective of this paper is to examine the relationship between self-efficacy, training facilities and training effectiveness in a Malaysian Public Training institution.

Most studies on training effectiveness mainly pay attention to the effect of training characteristics (ability, motivation and personality), training design (principles of learning, sequencing and content) and work environment (support, opportunity to use) as predictors of training outcomes. The issues of trainee evaluation, training content, training facility and self-efficacy have received less research attention. Motivated by these unexplored areas, this study examines a significant line of questions to update professionals and researchers on the important role of these elements on training effectiveness. It is believed that this examination is reasonable for a number of reasons. Most of studies on training effectiveness have focused on a narrow range of variables, i.e. combinations of these factors have not been analytically examined. The issue of training effectiveness could have emanated from the lack of an integrated framework or a theory as literature has revealed (Elangovan and Karakowsky, 1999).

Following this argument this study will enlarge the understanding of the elements that influence training effectiveness by examining a framework that encompasses self-efficacy and training facilities.

**Literature review**

The following conceptual framework is proposed to explain the relationship between self-efficacy, training facilities and training effectiveness.

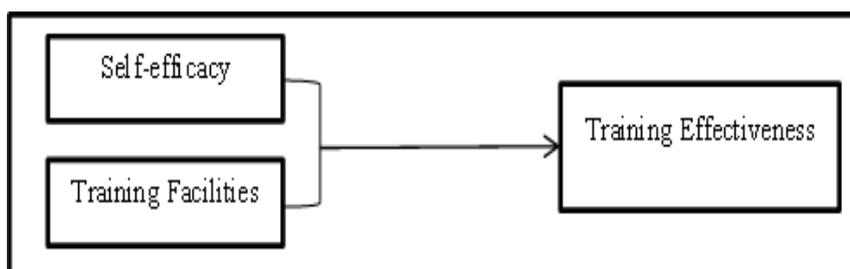


Figure 2.1 Conceptual Framework

***Training Effectiveness***

Training plays a significant role in the success and productivity of the organization (Chen, Sok and Sok 2007). Following Read and Kleiner (1996), in view of the fact that training is expensive, organizations should maximize the return on training investment by making training more effective (Read and Kleiner, 1996). Because, employee training does not only improve organizational outcome but a dominant factor for shaping employee attitudes thus, an increased satisfaction with employee development is a strong channel in building job satisfaction (Fawad Latif, 2012). In a study, Michael and Combs (2008) showed that training decreases the likelihood of failure, affects performance and increases the skill base and developing the extent of competence.

The fundamental goal of a training program is to improve effectiveness because when training is cautiously developed and properly implemented, it will have a desirable effect on the bottom line (Hughey and Mussnug, 1997). Similarly, Elangovan and Karakowsky (1999) acknowledged that effectiveness of training plays a significant role in determining the value of training and development programs in the organizations. Trainees who value the training will effectively transfer training than those who did not value the training (Elangovan and Karakowsky, 1999). Consequently, training effectiveness affects learning motivation as well as utilizing the new skills and ability obtained by the trainee (Elangovan and Karakowsky, 1999).

Furthermore, a study by Chen, Sok and Sok (2007) found that a good training program have a direct effect on the effectiveness of commercial banks (Chen, et al., 2007). Emphasizing that training effectiveness, improves employee working performance, and remained the major factor that underlie the differences between low and high performing graduate (Chen, et al., 2007). Sahinidis and Bouris (2008) also sampled 134 employees and first line supervisors, working for five large Greek organizations, the result indicated that perceived training effectiveness has positive relationship with job satisfaction, commitment and motivation.

Emphasizing that high quality training will result to better job satisfaction which in turn has a positive effect on organizational performance. In a study, Piccoli, Ahmad and Ives (2001) established that individual trainee characteristics (maturity, computer experience) and technology/design characteristics (reliability of technology and peer interaction) have effect on training effectiveness. Chiaburu and Tekleab (2005) sampled 119 trainees in a large organization in a metropolitan area of United State, they found that for training programs to be effective, trainees who participate in the training program should have high possibility to view the training as a channel to achieve future benefit. This advantage will completely be accomplished if the trainees can make use of what they have learned on the job in a new context and in a more complex task situation (Chiaburu and Tekleab, 2005).

### ***Self-Efficacy***

Greater emphasis has been made by many researchers on self-efficacy over the past three decades (Paglis, 2010). According to Lynch (2006), self-efficacy is a mixture of one's ability to do a given task and the level of confidence an individual has in the task. Individuals who are high in self-efficacy try more challenging tasks, make more effort in accomplishing and are more resolute in their efforts as they come across difficulty. Eom (2012) defined self-efficacy as an individual's confidence on his or her ability to achieve a specific task and produce designated levels of performance with the skills he or she has. In a study, Malliari, Korobili and Togia (2012) view the concept of self-efficacy as individuals' expectations and confidence of what they can achieve in particular situations. For instance, an individual with low self-efficacy willingly consider work as stressful while an individual with high self-efficacy usually see pressure as a change. In that way, this could bring his/her potentials into full practice to overcome the challenge (Chien, 2012).

Over the past two decades, the role of self-efficacy in organizational behavior has been widely examined in different field of studies and has been acknowledge as a significant factor in predicting effectiveness of training (Malliari, et al., 2012). It has been recognized as a psychological factor that affects individual's outcomes and the same time a concept that changes over time as new information and experiences are obtain (Malliari et al., 2012). Self-efficacy affects the beginning, strength and persistence of behavior (Paglis, 2010). These behavioral characteristics are positively associated with performance (Paglis, 2010)

The concept of self-efficacy has also been introduced to the studies on management information systems (MIS) as a significant management information system research construct. For instance, Simmering, Posey and Piccoli (2009) found that computer self-efficacy has a positive relationship with e-learning outcomes measured by average test scores in e-learning. Similarly, Johnson, Hornik and Salas (2008) established that e-learners' self-efficacy was positively associated with perceived effectiveness of the system, perceived content value, course satisfaction and course performance. Chien (2012) sampled 362 employees in the financial services industry in Taiwan, the result showed that computer self-efficacy has positive moderating effects on the relationship between system functionality with employee training effectiveness.

Additionally, the relationship between self-efficacy and different facet of organizational life has been experimented in various studies. For instance, in the field of industrial and organizational psychology, over 800 studies on self-efficacy have been published in scientific

journals over the past 25 years (Judge, Jackson, Shaw, Scott and Rich, 2007). Baron and Morin (2010) sampled 118 managers in one division of a large international manufacturing organization, the result showed that affective organizational commitment at the beginning of training has a positive effect on self-efficacy at the end of training (Baron and Morin, 2010). Emphasizing that the more employees feel psychologically linked to his/her organization, the better they build up their skills provided the organization gives them the chance (Baron and Morin, 2010). Tai (2006) sampled 126 employees from northern Taiwan, it was found that trainees with high self-efficacy will enhance training motivation and subsequently produce training effectiveness. The more employees are trained to believe in their learning ability, the better their willingness to gain more knowledge and master the program (Tai, 2006). Signifying that employees who are encouraged, confident and committed to training are valuable and make the training more effective (Chen, et al., 2007).

Therefore, it is hypothesized in this study that self-efficacy has a significant influence on training effectiveness.

### ***Training Facility***

Training facility plays a significant role in achieving effectiveness of training (Kärnä, Julin and Nenonen, 2013). According to Ghosh, et al. (2011), training facility include the contextual factors such as venue of the training program or food served. According to Tanner (2009), training facilities are significant elements that influence trainee's decisions when selecting higher education institution because high quality facilities have a significant effect on learning effectiveness. A study conducted in Norwegian university, Hanssen and Solvoll (2015) found that the quality of training facilities have significant effect on trainees satisfaction. Emphasizing that training facilities have significant affects on perceived reputation of the institution. Similarly, Hopland and Nyhus (2015) examined survey data from the Norwegian directorate for education and training showed that satisfaction with the training facilities has significant effect on students' outcome.

In view of this, Hassanbeigi and Askari (2010) argued that unsuitable facilities harm and reduce trainees' enthusiasm to learn. Thus, improving training effectiveness and trainee satisfaction required investment in training facilities subject to cost benefit analysis (Hanssen and Solvoll, 2015). This is important because most organizations have budget constraints to spend on training facilities, as such it imperative for organizations to invest in those facilities that will contribute high monetary value invested to improve trainee's effectiveness (Hanssen and Solvoll, 2015; Hopland and Nyhus, 2015). A study by Barrett et al. (2013) also found that classroom design significantly influence trainee ability to learn. Indicating that better training building significantly improve trainers confidence, reduce absenteeism and turnover and subsequently provide an indirect effect on the effectiveness of training (Buckley, Schneider and Shang, 2005). This has significant implication because a building in excellent condition, may be perceive as poor by trainees if the design is not adapted to the pedagogic ideas of the time (Hopland and Nyhus, 2015).

Thus, it is hypothesized that there is relationship between training facility and training effectiveness.

### **Methodology**

A cross-section design was used to identify the training effectiveness of trainees from a public skill training institution in Malaysia. The sample comprised of trainees who attended their convocation session held in May 2015. Self-reported questionnaires were distributed during the convocation. The questionnaire consisted of items to measure training effectiveness, self-efficacy and training facilities. The instruments used were adapted from various sources; training effectiveness measurement were from Holton and Bates (1998), self-efficacy instrument from Chen et al (2001), and training facilities adopted from [http:// www.resuscitationcouncil.co.za](http://www.resuscitationcouncil.co.za) (downloaded on 10th October 2014). All the items scale range from 1 (Strongly Agree) to 5 (Strongly Disagree). Convenience sampling method was utilized for the data collection among graduated trainees of a public skill training institution located in the Northern state of Malaysia. The unit of analysis comprised of graduates who attended the convocation ceremony. A total of 500 questionnaires were distributed but only 387 questionnaires were returned. In total, only 215 were found to be usable, representing a usable rate of 43%.

### ***Data Analysis and Results***

Data was analyzed using SMART-PLS 2.0 to determine reliability, validity and relationship between variables.

### ***Demographic profile of the respondent***

Majority of respondents were female 120 (55.8%) while the male counterparts constituted only 44.2 percent. Almost one third (31.6%) of the respondents were within the age bracket 19-21 years. This also reflect on the marital status, whereby 197 (91.6%) are single and only 16 (7.4%) are married. Majority of the respondents 105 (48.8%) were still not working, while only 76 (35.3%) working and the remainder 34 (15.8%) were self-employed.

### ***Validity and reliability***

Data was analysed using Smart PLS 2.0. To ensure the measurement items are valid and reliable, the data were analysed using: internal consistency (i.e., loading of each item); convergent validity; and discriminant validity. The results of the measurement model and the details of the results of validity and reliability are indicated in Tables 1, 2 and 3.

Table 1 show the factor loading of all measurement items. All items show factor loading above 0.50 which indicated the items are reliable to be tested. To measure convergent validity of each construct's factor loadings, average variance extracted (AVE) and composite reliability (CR) were carried out. According to Barclay et al. (1995), the values of AVE for each construct should be greater than 0.50. The results showed that the value of AVE of all constructs was greater than 0.50. In addition, to satisfy convergent validity requirements, CR for all constructs should be higher than 0.70 as suggested by Hair et al. (2010). As indicated in Table I, the value of CR for training effectiveness, self-efficacy and training facilities are 0.953, 0.932 and 0.938 respectively all of which are above the acceptable value of 0.70.

In order to examine discriminant validity, two tests were conducted which present the square root of the AVE and examine the values of items loading among the study construct (Fornell and Larcker, 1981). The square of AVE should be larger than its correlation with other constructs to assume measurement model have discriminant validity. As shown in Table 2, the

square root values of all the construct in the diagonal are larger than their correlation which indicated the measurement model have discriminant validity and show there was no multi-collinearity of items representing their hypothesized latent factors.

Table 1: Convergent Validity

Variables	Measurement item	Loading	AVE	CR	$\alpha$
Training effectiveness	TE1	0.692	0.545	0.953	0.947
	TE2	0.623			
	TE3	0.796			
	TE4	0.780			
	TE5	0.725			
	TE6	0.724			
	TE7	0.778			
	TE8	0.743			
	TE9	0.700			
	TE10	0.820			
	TE11	0.808			
	TE12	0.734			
	TE13	0.751			
	TE14	0.703			
	TE15	0.733			
	TE16	0.733			
	TE17	0.676			
Self-efficacy	SE1	0.785	0.633	0.932	0.917
	SE2	0.814			
	SE3	0.795			
	SE4	0.787			
	SE5	0.811			
	SE6	0.793			
	SE7	0.764			
	SE8	0.813			
Training facilities	TF1	0.795	0.654	0.938	0.924
	TF2	0.879			
	TF3	0.825			
	TF4	0.746			
	TF5	0.811			
	TF6	0.837			
	TF7	0.855			
	TF8	0.706			

Note: AVE = Average variance extracted; CR = Composite reliability;  
 $\alpha$  = Cronbach's alpha

Table 2: Result of Discriminant validity

Model construct	R <sup>2</sup>	1	2	3
1. Training effectiveness	0.340	<b>0.738</b>		
2. Self-efficacy	-	0.544	<b>0.796</b>	
3. Training facilities	-	0.453	0.697	<b>0.809</b>

Note: Diagonals number (in bold) represent the square root of AVE while the other entries represent the correlation coefficients; R<sup>2</sup> = R square.

### Test of hypotheses

Table 3 presents the results of the PLS analysis. The results show that 34% of the variance in training effectiveness is explained by self-efficacy and training facilities. The results of the study show that training facilities has no significant influence on training effectiveness ( $\beta = 0.122$ ,  $t = 0.135$ ,  $p < 0.01$ ). Meanwhile, self-efficacy ( $\beta = 0.111$ ,  $t = 4.276$ ,  $p < 0.01$ ) are found to have a substantial impact on training effectiveness. Hence, H1 is supported but H2 is rejected.

Table 3: Path coefficients and hypotheses testing

Hypotheses	Relationship	Coefficient	t-value	Support
H1	Self-efficacy → training effectiveness	0.111	4.276**	Yes
H2	Training facilities → training effectiveness	0.122	1.351	No

Path coefficients and hypotheses testing

Note: t value > 2.58 = significant at \*\* $p < 0.01$

### Discussion and implication

The results revealed that a significant relationship exist between trainees' self-efficacy and training effectiveness among the youth. However, the result also showed that training facilities does not have significant relationship with training effectiveness. The result indicated that self-efficacy which comprises of one's ability to do a given task and the level of confidence an individual has in the task does influence training effectiveness among the younger generation. This result provides empirical evidence to support that self efficacy is a significant predictor of training effectiveness. The result is consistent with the result by Carroll, et al., (2009), Malliari, et al., (2012) and Weng, et al., (2010) which found that self-efficacy has significant relationship with training effectiveness. The vision of any country lies in the hands of the youths. Such assertion will reinforce youth self-efficacy towards training program which subsequently determines the effectiveness of training. Believing that individuals who are high in self-efficacy try more challenging tasks, make greater effort in task accomplishment and are more firm in their efforts as they come across difficulty. Besides, some individuals have high confidence in their ability to perform a new task while others are doubtful of themselves. Therefore, the

results of this study provide that for any economy to achieve its goals, such they should constantly invest in the training of the youth by providing them with the information that are accurate, current, dependable and useful. Doing this provide them the opportunity to develop a better positive attitude to make use of their talent.

Self-efficacy was also found to be associated with academic achievement and motivation construct such as training effectiveness and academic performance (Carroll et al, 2009). The findings are consistent with the study by Chen, Sok and Sok (2007) whose finding indicated that self-efficacy is a significant element for employee training effectiveness. That is, employees with high level of self-efficacy demonstrate better outcomes (Tai, 2006). Therefore, the result indicated that it is possible to achieve training effectiveness if organizations change from self-seeking behaviour to more collaborative relationships. Thus, it is important for managers to make use of the critical success factors presented in this study for a better strategic approach to training effectiveness.

Additionally, this has also being reflected in many studies, where the role of self-efficacy has been widely examined in different field of studies and has been acknowledge as a significant factor in predicting training effectiveness. Further, it has been recognized as a psychological factor that affects individual's outcomes and a concept that changes over time as new information and experiences are obtain (Malliari et al., 2012). Following this, Carroll, Houghton, Wood, Unsworth, Hattie, Gordon and Bower (2009) indicated that self-efficacy predict academic outcomes and significantly influence other motivational constructs such as training effectiveness and academic performance. Hence, youth from the training institution reflect that self-efficacy is an important variable that influence training effectiveness.

Although previous studies (Karna et al, 2013; Gosh et al, 2011, Hopland and Nyhus, 2015) have found that training facilities positively influence training effectiveness however, this study found contrarily result. The results of this study showed that training facilities does not influence training effectiveness among youth from the training institution. Even though prior researchers has showed that training facilities influences training effectiveness, the insignificant results between facilities and training effectiveness in this study could be attributed to the differences in the expectations of the trainees in their respective institutions with regards to training facilities. Besides, the possibility of this result could also have been caused by different interpretation and expectations of the trainees on the training facilities expected by them. Thus, the fact that youth defined training facilities differently from the current situation will possibly have affected the result of this study. They may have viewed training facilities as the locations they undergo practical internship and not the facilities provided by the training institutions. Hence, this could cause the insignificant result. Thus, it is important for managers to make a diagnosis of their current training facility and develop a better source of strategies in order to improve training facility.

However, training facility and the management of these facilities, play a significant role in achieving the effectiveness of training (Kärnä, JulinandNenonen, 2013). According to Tanner (2009), training facilities are significant factors that influence trainee's decisions when selecting higher education institution because high quality facilities significantly affect learning effectiveness. Thus, improving training effectiveness and trainee satisfaction required investment in training facilities subject to cost benefit analysis (Hanssen and Solvoll, 2015). This is important because most organizations have budget constraints on training facilities, as such, it is imperative for organizations to invest in those facilities that will contribute high

monetary value to achieve training effectiveness (Hanssen and Solvoll, 2015; Hopland and Nyhus, 2015).

In view of the above, it is important to consider the interaction between people and their training environment because continuous interaction with the physical environment increases training effectiveness (Tanner, 2009). Thus, for training to be effective and favourable to learning, required a comfortable workplace where indoor air quality, acoustics, lighting, ergonomics and social activities are considered (Schraeder, 2009). Thus, wisdom suggests that integrating good training facility is the surest way to achieve training effectiveness. Therefore, the training provider should provide greater emphasis on self-efficacy and training facility to ensure the achievement of training effectiveness.

### **Conclusion**

This study has determined the relationship between self-efficacy and training effectiveness which disclose association among the variables. Thus, it can be indicated that self-efficacy is related to training effectiveness. Training is seen as an important aspect that can improve employees' knowledge, skill and abilities and can be used to shape employees' attitude and behaviour. Therefore, when the youth self-efficacy is increased, it may motivate them to utilize their skills and knowledge that they learn at the training centers. This could enhance their employability and marketability to obtain jobs in the future. This finding is only applicable to youth survey in this study and future study should examine other skill training institutions and other variables that could influence training effectiveness across the country.

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# Tax Revenue and Gross Capital An Empirical Analysis for Malaysia

**Azrai Abdullah\***

*Management and Humanities Department, Universiti Teknologi PETRONAS, Malaysia*  
Email: azraia@petronas.com.my

**Khalid Hassan**

*Management and Humanities Department, Universiti Teknologi PETRONAS, Malaysia*

\*Corresponding author

## Abstract

**Purpose:** The purpose of this paper is to evaluate the causality relationship between tax revenue and gross capital in Malaysia. The government expenditure and revenue in Malaysia played a critical role to support the economic operation, however, the economy suffer from continuously budget deficit. For that, the government tend recently to increase the revenue by introduce the Good and Services tax (GST) in order to cover the budget deficit. In light of this fact the current study is work to assess how the association between tax revenue and gross capital can affect the country economic growth.

**Design/methodology/approach:** The study utilized co-integration techniques and granger causality included an Error Correction Mechanism (ECM) as the methods of estimation

**Findings:** The results conclude bidirectional long run causality relationship between tax revenue and gross capital. Furthermore, short run unidirectional observed from gross capital to tax revenue. Finding from this study reveal that increase in total tax revenue (TTX) crowd in gross capital in long run. As well as, the result indicate gross capital is main contributor to tax revenue.

**Practical implications:** The results of the present study could help to better understanding for the nature of the relationship between tax revenue and gross capital in Malaysia. Findings suggested from this study can help government and policy designers for an appropriate fiscal policy.

**Keywords:** Tax revenue; Gross capital; Error Correction Mechanism

**Paper type:** Research paper

## Introduction

Taxes revenue is one of the major source contribute to the government revenue in most countries. As term taxes refer to the “*revenue that is collected by the government to provide services and finance themselves*”(Carnahan, 2007). Taxation is essential source of financing and provides governments with the funding that require to facilitate economic development and growth. Taxes are collected from different level of economic activities including among other individual activities (personal income tax), firms activities (business tax), and good and service consumption activities (GST tax). The role of taxation in effecting country economic

growth has long been interest to country policy creator as well as to academics and scholars. Numerous of studies have been conducted to discover the influence of taxation in the economic performance. The scholars tried theoretically and empirically to identify the association among these factors. Some of studies support the assumption of significant relationship between tax and economic growth, while other conclude no effect, further studies show negative relationship between `taxation and economic growth.

According to the theory of tax competition variation in tax rate will led to different impact to an open economy. Likewise, The country expected to cut the taxes on mobile asset through the occurrence of globalization due to rise in economic growth (Hakim and Bujang, 2012). Tax competition theory examined by Bretschger (2010), where he found negative effects of corporate taxes on the economic growth in 12 OECD countries. The author argues that, reduce tax rate will cause capital inflow to a country. This is due to; the tax rate is one of the determinant of investment climate by affecting the cost of capital holder (Bretschger, 2010). Furthermore, Wilson, (1991) and Bucovetsky (1991) concluded that return in private investment is influenced significantly by the changes in capital taxes (Bucovetsky, 1991) and (Wilson, 1991). Broadly, the role of tax revenue and expenditure in supporting the economic activities have been investigated widely. The continuous change in fiscal policy and the rapid increases in tax rate rise many questions regarding the correlation between economic growth and tax revenue. Empirical studies in this area include, among others, Easterly (1994), Similarly (1999), Chang (1999), Padovano and Galli (2002), Koch (2005), Lee and Gordon (2005), Karran, (1985), and Kneller (1999) (Taha, Nanthakumar, and Colombage, 2011). Most of these studies used time series data to measures the relationship between tax revenue and economic growth. A central question have been always subject to analysis in the literature is whether or not tax revenue support the economic activities.

The earlier literature discussions associated to the relationship between tax revenue and economic activities can be divided into two groups. The first group emphases on the influence of tax policy on economic growth through argue the effect of policy changes in economic growth. Majority of the literature in this group suggested that tax distortion will reduce the growth. In other words there are negative relationship between economic growth and tax policy. Second group conducted an empirical investigation for the effect of tax revenue in economic growth. The literature proposed that the nature of relationship could be positive or negative, it depend on how the tax revenue located to support economic and encourage investor. The common funding of most previous literature in this regard suggested that greater taxation rate inhibit economic activity and economic growth.

Following the tradition, the key objective of this article is empirically assess the relationship between taxes revenue and the gross capital formulation in Malaysia over the past 40 years. The study applied granger causality through using error correction dynamic model ECM. This study is aims to highlight some of most important matters that politicians and Fiscal policymakers should monitoring for formulation and implementation an appropriate tax policy support the strategy of economic growth and development in Malaysia.

Tax revenue in Malaysia can be approximately classified in terms of economic activities into differently categories. Tax revenues comprise of Direct and Indirect Taxes. Direct taxes are collected by the Inland Revenue Board of Malaysia (IRB) which involves of income tax from individuals, companies, and stamp duty (Narayanan, 2007). Indirect taxes include export duties, import duties, excise duties, service tax and sales tax. Indirect taxes is manage by the Royal Customs and Excise Department. Another form of government revenue in Malaysia is

Non-tax revenues and it is mainly include fees for issue of permits and licenses, rental of government property, fees for particular services, bank interests, proceeds from sale of government assets and returns from government investments fines (Pope and Abdul-Jabbar, 2008). During the early stages of its development, Malaysia like many other developing countries depend heavily on indirect taxes which accounted for 76 percent during 1960s (Kasipillai and Abdul-Jabbar, 2006). However, as the economy developed less dependence was placed on indirect tax. Recently, the key contributor to government revenue is direct tax, which account 69 percent. In 2005 the value of direct tax represents 51 percent of the Government total revenue (Loganathan and Taha, 2007). During 2015s, the Malaysian government agreed the good and services tax (GST) as new form of tax in the country. Introduce the GST tax in the Malaysian economy is expected to influence significantly the size of investment and thus the economic output.

The relationship between tax revenue and the performance of the Malaysian economic have been subject to a limited number of study. Suresh (2007), investigate the difficulties of increasing revenues and restructuring subsidies in Malaysia. The author note that the main challenge for the fiscal management in malaysia is to discover more stable sources of revenue, redirecting expenditures on economic operation for more productive uses and stopping wasteful of expenditures in the unproductive projects. Another study conducted by Roshaiza, Loganathan and Nanthakumar (2011) found no support to the supply-side hypothesis which consider the influence of tax towards economic growth. Dine (2015) wrote article concerns an exploration into Malaysia's recent introduction of a goods and services tax (GST) (Taha et al., 2011). Furthermore, Nazim (2016) seek to find out the theoretical relationship between the revenue and the expenditure in Malaysia. The author suggested reduce the operating expenditure and spend more on the development expenditure (Ullah, 2016).

### **Tax Revenue and Economic Growth: Theoretical Framework**

The effects of government sector on economic growth have been investigated in different theoretical and empirical studies. At the theoretical level, one point of view proposed that bigger size of public sector is likely to be harmful for the economy due to, government operation mostly conducted unprofessionally and many of government fiscal policy tend to distort economic operation and led to lower productivity. Another point of view proposed that involvement of government in economic process could be powerful for economic growth and development (Ram, 1986). The main theoretical thought in this regards is the Keynes school, neoclassical model and new growth framework. New classical model considered government revenue and expenditure to have a transition influence in economic growth. . However, new growth theory or the endogenous growth framework suggested that government revenue and expenditure could have temporary and permanent effects on a country economic growth (Barro, 1988) .

However, the supply side hypothesis that argue the association between economic growth and tax revenue has supported the contrary relationship between tax rates and economic growth. The hypothesis record that increases in the tax rate would cause a significant negative impact on economic growth. Base on Harberger (1962, 1996), higher corporate taxes may reduce investment rate, and the net growth in the capital stock, through affecting on individual and corporate income. Furthermore, scholars suggested that increase tax rate can also disillusion productivity growth and reducing research and development (RandD) activities which can

potentially boost the productivity of existing resource (Mendoza, Milesi-Ferretti, and Asea, 1997)

Another point of view for the supply side hypothesis is taxes may decrease the work incentive which will diminish the labour force participation in economic activities and hours of work, it may also create biased occupational choice in education, skills and training. High rate of taxation on labour supply can interrupt the effective use of human capital through discouraging labour from employment in a productivity sector but a heavy tax burden. Furthermore, Tax policy may affect the marginal productivity of capital through misleading investment from high taxed to low taxed industries, which might hinder balance growth and thus economic development (Dzingirai Canicio and Zachary, 2014).

Broadly, the theoretical literature associated to the cause of economic growth and tax revenue acknowledged three main theories to clarify the relationship between them. First one is the tax and grow hypothesis that assumed a unidirectional causal relationship running from tax revenue to economic growth. This theory was supported by Friedman (1978), who discussed that increase in tax revenue would lead to more fiscal space, which will drive growth. The second one is the grow and tax hypothesis which considers increased tax revenue as a result of economic growth achieved. Peacock and Wiseman (1979) assumes that government spending might increase due to crises. They believed that increased levels of accelerated expenditure growth continue even after crisis is over, which supports the Keynesian growth theory and the tax effect. They are assumed that crisis initially forces up government expenditure to encourage economic growth rate, more than tax revenue growth rate. The main idea derived from Peacock and Wiseman (1979) theory is that tax revenue often increases due to the crisis, this phenomenon becomes a lasting feature in tax policies. In an empirical view, this hypothesis suggests unidirectional causality running from economic growth to tax revenue growth. The third theoretical view is the fiscal synchronization hypothesis developed by Barro's (1979). This hypothesis clarifies that government tax spending prompts growth and tax revenue maximization the size of economic output. The idea is that tax revenue and real GDP change concurrently. In an empirical view, this hypothesis proposes bidirectional causality between economic growth and tax revenue.

### **Literature Review**

Number of empirical studies have been done to investigate the capability of the said theories. Most economists have always declared that there is a strong association among economic growth and fiscal policies. Testing the association among economic growth and tax revenue have been widely performed particularly in developed economies. Most of the results of these studies found that economic growth and development was the main determinant of tax level. For instance Easterly (1994) has revealed how the distortion in tax structure could depress the economy growth rate [16]. In contrast, Chang (1999) was found that an increase in income tax may cause an increase in economic operation if the time preference is endogenously determined. The author was further presumed that transforming income tax revenue into a productive public expenditure might have a positive effect in the economic operation (Kneller, Bleaney, and Gemmell, 1999).

Padovano and Galli (2002) verified the strength of the relationship between tax revenue, categories and growth through gradually including extra key variables from the government sector in the growth regression. Furthermore, Lee and Gordon (2005) applied cross-country time series data to examine how fiscal policies and tax revenue affect a country's

growth rate. The author found that any increase in tax rate cause lower future economic growth. A similar conclusion was recorded by Koch (2005) who, used data for the period of 1960-2002 to verified the association between tax policy and economic growth by applying a two-stage modeling method. The findings show that the rate of economic growth are strongly connected with the variations in tax revenue. Moreover, study recorded that tax revenue effect the economic operation in developing economies larger than economic operation in developed economies. Based on vector auto regressive model (VAR) Castro (2008) found that increases of tax often produce a positive effect in the economy (Castro and Cos, 2008).

Furthermore, Tah, Nanthakumar and Colombage (2011), tested the empirical relationship between economic growth and tax revenue for Malaysia over the period of 1970-2009. The authors used Granger causality method via applying vector error correction model (VECM). Findings showed that the level of taxes revenue influence the distribution of resources and often corrupt the economic growth. The result of their study further showed that there was a unidirectional causality relationship running from economic growth to the total government tax revenue. The ECT value show adjustment to reach equilibrium at speed of 21% in the long-run. Based on their findings, the authors highlighted some of main concerns that policymakers should consider for real taxation policy formulation in line with the strategy of the Malaysia economic development (Taha et al., 2011). The empirical literature on the relationship between tax revenue and economic operation has produced mixed outcomes because of the various time periods analyzed, different methodology and lag length specifications.

Therefore considering the significant impact of public sector policy in economic growth this study aim to point out the long run and short run relationship between tax revenue and gross capital formation in Malaysia through analysis time series data and applying empirical methods. The analysis of the relationship between total tax revenue and the size of capital in Malaysia is an essential to support and manage policy formulation and implementation particularly after the country started to adopt the good and service tax (GST), which expected to have significant effect in investment and economic growth.

### The Study Methodology

The study models build base on the assumption of causality relationship between gross capital and total tax revenue. For the study purposes the study adopt ECM methods to test the long run and short run relationship between the variables. The proposed models has been assumed as follows.

$$\begin{aligned}
 LGFCF = & \alpha + a_1ECT_{t-1} + \beta_1LGFCF_{t-1} + \dots + \beta_pLGFCF_p + \delta_1LTAXR_{t-1} \\
 & + \dots + \delta_pLTAXR_{t-p} \quad (1)
 \end{aligned}$$

$$\begin{aligned}
 LTAXR = & \alpha + a_1ECT_{t-1} + \beta_1LTAXR_{t-1} + \dots + \beta_pLTAXR_p + \delta_1LGFCF_{t-1} \\
 & + \dots + \delta_pLGFCF_{t-p} \quad (2)
 \end{aligned}$$

The equation No 1 and 2 evaluate the causality relationship between of tax revenue and gross capital in Malaysia, where  $LGFCF$  is refer to gross capital and  $LTAXR_t$  is tax revenue. The  $LTAXR_{t-p}$

and  $LGFCF_{t-p}$  are the lag length for tax revenue and gross capital respectively while  $\delta_1 \dots \delta_p$  and  $\delta_1 \dots \delta_p$  are coefficient in the two model.

Regression modeling objective became more difficult when using time series data that is because of the assumption of the long-term effect of independent variable on the dependent variable. As the most of the economics data is a time series, the method of stationary and co-integration applied to confirm the validity of the data and created models to deliver accurate results. Therefore, unit root methods used to test the order of integration among the time series variables. Subsequently, the first undertaking in this empirical analysis is to implement unit root test in order to recognize whether the study time series are stationary or non-stationary. If the time series variable is stationary in their level, that mean the variables integrated of order zero or I(0); and if the variables are not stationary in their level but they are stationary in its first differenced form, it is said to be integrated of order one or I(1). One of the most common tests of unit root is the Augmented Dickey-Fuller (ADF) and the Phillips–Perron (PP) unit root test. Stationarity in time series data is a prerequisite for all the results of the regression analysis to be valid (Hamilton, 1994). Furthermore, the study used Johansson co-integration test to identify whether there is any evidence of long run relationship between the variables. Further analysis conducted to determine the direction of causality relationship. The Eview software has been used to run the analysis.

**Results and Discussion**

The first stage in the empirical analysis is to apply stationary test to conclude the order of integration for each variable. The study examine the unit root test using the augmented Dickey and Fuller (1981) ADF and Philips and Perron (1988) PP tests. Table 1 and 2 present the result of the ADF and PP unit root tests of the variables at levels and at their first differences. The outcomes proposed that all variables are not stationary at their level, however, the variables are stationary in their first difference, in another word they are integrated at order one I(1). The study therefore, used Johansson co-integration test to identify whether there is any indication of long run or co-integration relationship between the variables.

Table 1: Unit root tests results: ADF test

variables	ADF test			
	At level		At first differences	
	T- statistic	P value	T- statistic	P value
LGFCF	-1.3605	0.5848	-5.3286	0.0002
LTAXR	-2.3203	0.1737	-6.4275	0.0000

Note: The critical values at level at 1%, and 5% are -3.724070), and (-2.991878) respectively. The critical values at 1st difference at 1%, and 5% are (-3.73785), and (-2.99187), respectively

Table 2: Unit root tests results: PP test

variables	PP TEST			
	At level		At first differences	
	T- statistic	P value	T- statistic	P value
LGFCF	-1.3402	0.5944	-5.42099	0.0002

variables	PP TEST			
	<i>At level</i>		<i>At first differences</i>	
	T- statistic	P value	T- statistic	P value
LTAXR	-2.3203	0.1773	-6.41183	0.0000

Note: The critical values at level at 1%, and 5% are (-3.72407), and (-2.9862) respectively.

The critical values at 1st difference at 1%, and 5% are (-3.73785), and (-2.991878), respectively.

Since the data are integrated to the first difference the two variables might be co-integrated. The study therefore used Johansson co-integration test to determine the rank of co-integration between the variables. Applying Johansson co-integration test need first to determine the appropriate lag length for the suggested models. Akaike Information Criterion (AIC) for lag selection has been a pointed with maximum two lags. The optimum lags are selected based on minimizing the AIC value. The Johansson test result reported in the table 3.

Table 3. Johansson co-integration test results:

Hypothesized	Eigenvalue	Trace Statistic	0.05 Critical value	Prob.**
None *	0.637092	32.33598	15.49471	0.0001
At most 1 *	0.324503	9.023063	3.841466	0.0027
Trace test indicates 2 co-integrating eqn(s) at the 0.05 level				

Based on Johansson co-integration test result in Table 3, the study conclude that the tax revenue and gross capital are co-integrated. The rank of co-integration estimated at two implying that two co-integration equation are exist. The study proceed further to estimate the error correction term (ECT) value in order to detriment the speed of adjustment toward equilibrium, as well as highlighted the estimated coefficients and significance in short run.

Table 4. ECT Estimation Results

Regressor	Coefficient Estimation	
	Tax model	Gross capital model
D(LGFCF) <sub>-1</sub>	0.17334 (0.7155)	0.04621 (0.8195)
D(LGFCF) <sub>-2</sub>	0.17083 **(0.0926)	0.36460 (0.1085)
D(LTAXR) <sub>-1</sub>	-0.86178 (0.7155)	0.33241 (0.1513)
D(LTAXR) <sub>-2</sub>	0.08812 (0.6410)	-0.16312 (0.7456)
ECT <sub>t-1</sub>	-0.615598 *(0.009)	-0.79294 *(0.0074)

\*Significant at 1%, and. ... \*\* Significant at 10%

The results in table 4 illustrate that there is a bidirectional long run relationship between gross capital and tax revenue. The coefficients of error correction term ECT as the speed of

adjustment to restore equilibrium is proved the existence of long run effect in the two models. The coefficient of ECT in gross capital model estimated at -0.79294 which is negative and statistically significant at the level of 5% implying that gross capital contribute significantly to cover the government budget deficit through convert tax revenue toward equilibrium at speed of 79 percent. In another hand. The result also show long run causality from tax revenue to gross capital where the ECT coefficient is estimated at -0.615598 impaling that tax revenue also support gross capital in long run. Table 5 show the short run causality along with long run.

Table 5: Granger Causality results

Causality assumption	Long run causality (ECT)	Short run causality ( F- statistic)
LGFCF does not cause TAXR	-0.61559 *( 0.009)	3.3478 **( 0.049)
TAXR does not cause LGFCF	-0.79294 *( 0.0074)	1.915207 *** ( 0.094)

\*Significant at 1%, and. ... \*\* Significant at 5%..... \*\* Significant at 10%

The short run dynamics result shows unidirectional causality from gross capital to tax revenue. The null hypothesis (LGFCF does not cause TAXR) has been rejected at 5% as the corresponding P-value to F-statistic estimated at 0.04 (0.04%) impaling significant effect form gross capital in tax revenue. However the study also conclude absent of short run causality from tax revenue to gross capital at 5%. The table VI report the model diagnostics test result. The value of R2 square for the models along with F- statistic and Durban Watson suggested good regression model. However, it is essential to proceed the residual tests in order to test the models efficiency. The Godfrey LM test for autocorrelation, Jarque–Bera test for normality and Breusch-Pagan-Godfery test for heteroscedasticity applied in order to check for the model accuracy.

Table 6: Model Diagnostics Result

<i>Diagnostics test</i>	<i>GFCF MODEL</i>	<i>TAXR MODEL</i>
R <sup>2</sup>	0.676046	0.52629
Durban Watson	2.002	1.787
Godfrey LM test autocorrelation	0497844 (0.7796)	1.0532 (0.5906)
Jarque – Bera test normality	92.5267 (0.072)	7.5527 (0.061)
Heteroskedastic Breusch Pagan	6.17885 (.4035)	7.3011 (0.2993)

The result of residuals test in Table VI show that the null hypothesis in serial correlation, normality and heteroscedasticity tests for the suggested models have been accepted since the p-values are greater than the level of significance. This result indicates that the residuals in the three models are not serially correlated, not heteroscedasticity and normally distributed.

### **Conclusion**

The study examined the causality association between tax revenue and gross capital in Malaysia using time series data from 1970 to 2015. The study adopted granger causality thought included a mechanism of error correction model (ECM) as the method of analysis. The empirical analysis for the relationship between tax revenue and the gross capital in Malaysia illustrates the existence of bidirectional long run relationship between the two variables. Furthermore, the granger causality test suggested short unidirectional causality running from gross capital to tax revenue. Findings from this study reveal that an increase in total tax revenue (TTX) encouraged gross capital to increase in a long run. This result reflects the significant role that played by the public sector in Malaysia to support the national economy during the last four decades. As well as, the result indicates that gross capital is one of the main contributors to tax revenue and thus to cover the government budget deficit.

Although the public sector played an important role to support economic operation, however, the Malaysian economy suffers from a continuous budget deficit. Recently the government seeks to increase the revenue by introducing Goods and Services Tax, which is expected to increase government revenue significantly. However, increasing tax revenue through applying such type of tax could have serious economic problems and might be effective negatively in investment and economic operation in the long run. To cover the budget deficit, the government should tend to reduce the operating expenditure and spend more on the development expenditure.

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# The Role of Public Sector in Economic Growth Evaluation for the Impact of Government Expenditure in Sectoral Output: The Case Study of Sudan

**Khalid Hassan**

*Management and Humanities Department, Universiti Teknologi PETRONAS, Malaysia*

**Azrai Abdullah**

*Management and Humanities Department, Universiti Teknologi PETRONAS, Malaysia*

## **Abstract**

**Purpose** – This study examines the role of government revenue and expenditure in economic output of agriculture, industrial and services sectors in Sudan. The study analyses the impact of government expenditure components on sectoral output for the period 1960-2013 based on the endogenous growth framework.

**Design/methodology/approach** – The study applied Autoregressive Distributed Lag model (ARDL) and bound approach for co-integration as the methods of estimation

**Findings** – The results show that the government expenditure components have long-run effect in agriculture and industrial GDP. This implies the potential of government expenditure in supporting agriculture and industrial output in Sudan economy. However, the result also suggest in long run the components of government expenditure not support the services sector output.

**Practical implications** – The study findings could help to highlight the nature of the relationship between government expenditure and the sectoral output of Sudan, which might help government to adopt an appropriate fiscal policy in order to allocate public resource and expenditure to support economic operation

**Keywords** - Government expenditure; Services GDP; Agriculture GDP; Industrial GDP; ARDL model.

**Paper type:** Research paper

## **Introduction**

The relationship between public sector and economic growth have been received more attention as an important case in macroeconomics and growth studies. The world economy adopt for a decades a growth strategy depends on underscoring the role of private sector on production process. This strategy led to a curtailment the contribution of public sector in economic output and hence in the development process. However, numerous of study have pointed out the influence role of public sector in economic growth. (Aschauer, 1990) examined empirically, the impact of public capital accumulation on US private investment and economic output. The finding implies positive effect of capital spending in both cases. Aschauer's study was followed by a rapidly growing literature such as (Gramlich, 1994), (Argimon, Gonzalez,

and Roldan, 1997), (Barro, 1988), (Devarajan, Swaroop, and Zou, 1996), (Ram, 1986). Most of this study argue the case of public infrastructure investment as a factor of substitutability in economic output.

The intensive literature associated to the macroeconomic impact of public sectors on economic growth during the recent years brought this case again into the spotlight. Empirical studies include, among others, (Rajkumar and Swaroop, 2008), (Nurudeen and Usman, 2010), (Loizides and Vamvoukas, 2005), (Bouakez and Rebei, 2007), (Akinlo, 2013), and (Dzingirai Canicio and Zachary, 2014). Most of these studies used cross country time series data to measures the relationship between public sector and economic growth. Two trend appeared in this literature. First trend is focused on investigated the role of public spending in support private capital accumulation, while the second trend is concentrate on the direct effect of public spending in economic growth.

A central question have been always subject to analysis is whether or not public expenditure support the long run steady growth in the economy. The general view of most theoretical assumption in this regards is that public expenditure, notably on human capital and physical infrastructure could enhance a country economic growth. Public expenditure may directly or indirectly enhance a country output through its interaction with the private sector and provision of necessity infrastructure and social services. Public expenditure can be approximately classified in terms of purpose as development and recurrent expenditure. Recurrent expenditure refers to expenditure made on ongoing programmers or activities such as constitutes spending on salaries and wages, administration entitlements, and welfare services. Recurrent expenditure may impact economic growth through effecting on people's ability to work, save and invest. Development expenditure mention to expenditure that is generally made on new projects and activities, it constitutes of investment in national schemes including construction of roadways, railways and power projects, establishment of communication systems and support community development activities. Implementing such project would raise economic growth both directly and indirectly through encouraging private investment.

### **Theoretical Framework and Literature Review**

The effects of government sector on economic growth have been subject to appraisal in different theoretical and empirical studies. At the theoretical level, one point of view proposed that larger size of government is likely to be harmful for the economy due to, government operation mostly conducted unprofessionally and many of government fiscal policy tend to distort economic operation and led to lower productivity. Another point of view suggested that intervention of government in economic operation could be powerful for economic growth and development (Ram, 1986). The main theoretical thought in this regards is the Keynes school, Wagner law, view of neoclassical model and the new growth framework. New classical model considered public expenditure to have a transition effect in economic growth. However, new growth theory or the endogenous growth framework suggested that government expenditure could have temporary and permanent effects on a country economic growth (Barro, 1988).

The important of the size of public sector along with private sector in economic growth have brought to attention by British economist John Maynard Keynes in 1936 during the great depression follow the world war. Unlike classical economics view, Keynes believe that the government have an important role to play in economic sustainability. Keynesian approach argued that markets would not automatically caused full-employment equilibrium, in fact the economy could reach equilibrium with still high level of unemployment income. In this point,

Keynes believe that economy need to be boost by the government to stimulate growth. The government intervention by putting more expenditure would manage the economy through increases the demand on goods and services in the markets. As a result of the extra demand, firms would employ more people, which would cause more income in the economy. Therefore, Keynesian macroeconomic thought tend to conceder government expenditure as an important factor in economic growth. The model of aggregate expenditure based on Keynes set as  $y = f(I, C, G, NX)$  where  $I$  is capital investment,  $C$  is house hold consumption,  $G$  is a government expenditure and  $NX$  is a net export (Blinder, 2008).

In the neoclassical growth framework private capital is key factor in economic growth while the public spending assumed to boost the economy output temporarily. The Solo and Swan (1956) growth model pointed accumulation capital along with workforce and productivity as the key factors in production process, based on neoclassical growth framework increase in capital stock, labor supply and productivity would rise the aggregate production. Neo-classical growth model based on Douglas function production function  $y_t = A_t f(K_t, L_t)$  has been a central of empirical studies and used extensively in literature to investigate the relationship between aggregate expenditure and aggregate production, where,  $y_t$  is the level of output or aggregate production,  $A_t$  is measures factor of productivity or the technology level at time  $t$  and  $(K_t, L_t)$  are the stock of physical capital and size of labor respectively.

On the other hand, endogenous growth models  $Y = f(AK)$  for economic growth assumed that investment in human capital, innovation, and knowledge are significant contributors to economic growth. The value of  $Y$  (economic output) in the model is depend on  $A$  (technology) and  $K$  (capital including human resource). In contrast with neoclassical growth model, new growth framework link increase in government expenditure to the steady economic growth rate. Based on the endogenous growth point of view, public investment in human capital and infrastructure would support the private sector and economic output.

Following the endogenous growth models Ram (1986) investigated the size public expenditure and economic growth. He tend to separate between public and private sector effect in economic output. Ram obtained private investment, government expenditure and labor force growth rate as exogenous factors for his study [10]. Furthermore, Barro (1990) investigate empirically the government spending in a simple model of endogenous growth. According to him, public investment on productive activities contribute positively to economic growth rate of nearly 78 countries' involved in his cross-country study. However, Barro recognized that the government consumption expenditure is expected to have a limited effect in economic growth (Barro, 1988).

In Sudan, the correlation between government spending and economic output had been subject to a few number of study. (Badawi, 2003), investigated the substitutability and complementarity of government capital to private sector investment in a neoclassical growth framework. He found that investments of both public and private sectors exert positive long run effect on gross real output. (Abdulrahman, 2013) worked to evaluate the role of fiscal policy on economic growth in Sudan during the period 1996-2012. The author set GDP to represents the economic growth and government expenditure and taxation to represent the country fiscal policy However, it is yet not clear whether or not the sectoral output in the economy have been affected positively by the size of government expenditure. More study

conducted by (Salih, 2012) using VAR model examine the correlation between public sector and economic output under the assumption of Wagner law. Therefore, this study applied more factors from government expenditure to evaluate the impact of public sector in sectoral output.

### The Study Models and Methodology

The study models build base on the Ram (1986) model and according the new growth theory assumption associated with role of government in economic growth. New growth theory assumed that economic might growth when labour and capital are augmented by additional government input in the production function. The empirical studies associated with new growth view found that government spending and revenue will have both temporary and permanent effect in economic output. According to Ram, government input should be separated from private sector input in order to provides clear understanding for the role of public sector in economic growth. Ram conclude through his study that government spending impacted positively in economic growth for the most countries he considered in his study. Simply, the Ram model specification is as follow

$$\frac{\hat{Y}}{Y} = \beta_0 \left(\frac{I}{Y}\right) + \beta_1 \left(\frac{\hat{L}}{L}\right) + \beta_2 \left(\frac{G}{Y}\right)$$

Where  $\frac{\hat{Y}}{Y}$  ratio of economic growth,  $\frac{I}{Y}$  is ratio of accumulative investment to country output,

$\frac{\hat{L}}{L}$  is labor growth rate and  $\frac{G}{Y}$  is ratio of government expenditure to economic output.  $\beta_1$ ,  $\beta_2$

and  $\beta_3$  are the elasticity of capital, labor and government expenditure respectively. (Güenalp and Gür, 2002). The theoretical framework presented above presumed that economic growth is subject to the ratio of gross investment to GDP, growth of labour force and ratio of government expenditure to GDP . The Ram model was chosen in this study due to it is recognize the role of government expenditure without overlapping with private sector activities, which would allow to show clearly how the expenditure by government exercised an externality effect on output in the long run. For the research purposes, the study considered more government expenditure components as explanatory variable. The study adopt recurrent government expenditure, government consumption and government revenue along with total export to justify the impact of public sector in the economic output of Sudan. Since the study is focuses in the level of GDP sectors, the formulation of GDP sectors models will be as follow:

$$\Delta R_{agro}G_t = \beta_0 + \beta_1 R\Delta g_c f g_t + \beta_2 R\Delta c g e_t + \beta_3 R\Delta g r_t + \beta_4 R\Delta f g c_t + \beta_6 R\Delta \exp_t + u$$

$$\Delta R_{inds}G_t = \alpha_0 + \alpha_1 R\Delta g_c f g_t + \alpha_2 R\Delta c g e_t + \alpha_3 R\Delta g r_t + \alpha_4 R\Delta f g c_t + \alpha_6 R\Delta \exp_t + u$$

$$\Delta R_{serv}G_t = \partial_0 + \partial_1 R\Delta g_c f g_t + \partial_2 R\Delta c g e_t + \partial_3 R\Delta g r_t + \partial_4 R\Delta f g c_t + \partial_6 R\Delta \exp_t + u$$

Where  $R_{agro}G_t$  is refer to the contribution of agriculture sector to GDP,  $R_{inds}G$  contribution of industry sector to GDP and  $R_{serv}G_t$  contribution of service sector to GDP. The government expenditure components included in the models are Grosse fixed capital formation from public

sector ( $cgfg_t$ ), current government expenditure ( $cgel_t$ ), final government consumption ( $fgc_t$ ), government revenue ( $gr_t$ ) and total export ( $exp_t$ ).

In order to use time series data in statistical analyses, we need first to determine whether these the time series is stationary or not. Unit root methods are beneficial to test the order of integration among the time series variables. Subsequently, the first task in this empirical analysis is to perform unit root test in order to identify whether the study time series are stationary or non-stationary. If the variable is stationary in its level, it is said to be integrated of order zero or I(0); and if it is not stationary in its level form but stationary in its first differenced form, it is said to be integrated of order one or I(1). One of the most common tests of unit root is the Augmented Dickey-Fuller (ADF) and the Phillips–Perron (PP) unit root test. Stationarity in time series data is a prerequisite for all the results of the regression analysis to be valid (Hamilton, 1994).

The study adopt Autoregressive distributed lag model (ARDL) as a dynamical system with the characteristics to determine long run and short run relationship in multi-factor mode. To capture the co-integration among set of variables thorough applying the new version of ARDL model, Pesaran (2001) assumed that unrestricted error correction model should be develop as part of the general model (Pesaran, Shin, and Smith, 2001). The specification of the model will be as follows

$$\Delta y_t = \beta_0 + \sum^n \beta_1 dy_{t-i} + \sum^n \beta_2 d\chi_{1t-i} + \sum^n \beta_3 dx_{2t-i} + \beta_4 y_{t-1} + \beta_5 x_{1t-1} + \beta_6 x_{2t-1} \dots (15)$$

The ARDL methods used in the study to interpret and explain the causality relationship between the GDP sectors and the government expenditure components. Where  $\sum^p$ ,  $\sum^q$  and  $\sum^r$  is lag length of the variables  $y_t$ ,  $x_{1t}$  and  $x_{2t}$  at the first differences. The first part of the model  $\sum^n \beta_1 dy_{t-i} + \sum^n \beta_2 d\chi_{1t-i} + \sum^n \beta_3 dx_{2t-i}$  is measure the short run causality from the past value of  $y_t$  ( $y_{t-i}$ ),  $x_{1t}$  ( $x_{1t-i}$ ) and  $x_{2t}$  ( $x_{2t-i}$ ) toward  $y_t$ , the model use first difference data when estimating short run causality. The rest of the model  $\beta_4 y_{t-1} + \beta_5 x_{1t-1} + \beta_6 x_{2t-1}$  is evaluate the long run relationship from  $y_{t-1}$ ,  $x_{1t-1}$  and  $x_{2t-1}$  toward  $y_t$ ; in this stage, the model used data at level. In order to capture the long-run relationship between the concerned variables, the bound test applied to determine the value of F-statistic was carried out. Test null hypotheses  $H_0 = \beta_4 = \beta_5 = \beta_6 = 0$  indicate absent of long-run; while alternative hypotheses  $H_1 = \beta_4 = \beta_5 = \beta_6 \neq 0$  indicate existence of long-run. In another word, zero coefficients of  $y_{t-1}$ ,  $x_{1t-1}$  and  $x_{2t-1}$  implies absent of long run relationship. Following the assumption of ARDL model, the study develop number of models to evaluate the causality relationship between public expenditure components and the output of economic sectors in Sudan. The models are set as below:

$$\begin{aligned}
 R\Delta lagroG &= \alpha + \sum^n \alpha_1 \Delta lagroG_{t-i} + \sum^n \alpha_2 \Delta \lg r_{t-i} + \sum^n \alpha_3 \Delta lcge_{t-i} + \sum^n \alpha_4 \Delta lgcfcg_{t-i} \\
 &+ \sum^n \alpha_5 \Delta lfgc_{t-i} + \sum^n \alpha_6 \Delta l \exp_{t-i} + \alpha_7 lagroG_{t-1} + \alpha_8 \lg r_{t-1} + \alpha_9 lcge_{t-1} + \alpha_{10} lgcfcg_{t-1} \\
 &+ \alpha_{11} lfgc_{t-1} + \alpha_{12} l \exp_{t-1} + \varepsilon \dots \dots \dots (16)
 \end{aligned}$$

$$\begin{aligned}
 R\Delta lindsG &= \beta + \sum^n \beta_1 \Delta lindsG_{t-i} + \sum^n \beta_2 \Delta \lg r_{t-i} + \sum^n \beta_3 \Delta lcge_{t-i} + \sum^n \beta_4 \Delta lgcfcg_{t-i} \\
 &+ \sum^n \beta_5 \Delta lfgc_{t-i} + \sum^n \beta_6 \Delta l \exp_{t-i} + \beta_7 RlindsG_{t-1} + \beta_8 \lg r_{t-1} + \beta_9 lcge_{t-1} + \beta_{10} lgcfcg_{t-1} \\
 &+ \beta_{11} lfgc_{t-1} + \beta_{12} l \exp_{t-1} + \varepsilon \dots \dots \dots (17)
 \end{aligned}$$

$$\begin{aligned}
 R\Delta lsergG &= \delta + \sum^n \delta_1 \Delta lsergG_{t-i} + \sum^n \delta_2 \Delta lcge_{t-i} + \sum^n \delta_3 \Delta \lg r_{t-i} + \sum^n \delta_4 \Delta lgcfcg_{t-i} \\
 &+ \sum^n \delta_5 \Delta lfgc_{t-i} + \sum^n \delta_6 \Delta l \exp_{t-i} + \delta_7 RlsergG_{t-1} + \delta_8 lcge_{t-1} + \delta_9 \lg r_{t-1} \\
 &+ \delta_{10} lgcfcg_{t-1} + \delta_{11} lfgc_{t-1} + \delta_{12} l \exp_{t-1} + \varepsilon \dots \dots \dots (18)
 \end{aligned}$$

The three equation above evaluate the effect of public expenditure in economic output of agriculture, industrial and services sectors. Where  $\sum^n$  is lag length of first difference exogenous variables  $\Delta lcge_{t-i}$ ,  $\Delta \lg r_{t-i}$ ,  $\Delta lgcfcg_{t-1}$ ,  $\Delta lfgc_{t-i}$ ,  $\Delta lcge_{t-i}$  and  $\Delta \exp_{t-i}$  respectively, and  $\beta_1 \dots \beta_{12}$ ,  $\alpha_1 \dots \alpha_{12}$  and  $\delta_1 \dots \delta_{12}$  are the slop coefficient in the three model. From the estimation models the coefficient of,  $\lg r_{t-1}$ ,  $lcge_{t-1}$ ,  $lgcfcg_{t-1}$ ,  $fgc_{t-1}$ , and  $l \exp_{t-1}$  are expected to capture the log run causality from public expenditure to GDP sectors, while The short-run effects would be measure by the coefficients of the first-differenced variables with estimated lag length in equation. The models basically investigate the short run and long run causality from Gross capital formation of public sector (GCFG), final government consumption (FGC), recurrent government expenditure (CGE), Government revenue (GR) and export (EXP) to the contribution of agriculture, industrial and services sectors to GDP respectively. The study has used 52-year annual data from 1960 to 2012. The data used in this study was obtained from Ministry of Finance (MOF), Central Bank of Sudan (CBOS), and central Bureau of Statistics in Sudan (CBS) .The gathering data covered the real GDP for economic sectors and the components of government expenditure. The research used data at constant prices for the year 2005. The data also transferred to logarithm for the research purposes.

### Results and Discussion

The Autoregressive Distributed Lag (ARDL) approach proposed by Pesaran *et al.* (2001) is appropriate for variables that are I(0) or I(1). Consequently. The study investigate the unit root test of the variables using the augmented Dickey and Fuller (1981) ADF and Philips and Perron (1988) PP tests. Table I introduce the result of the ADF and PP unit root tests. The results proposed that all variables are stationary in their first difference in another word they are integrated at order one I(1). The study hence, could use the ARDL approach to test the co-integration among the variables.

Table 1: Unit root tests results

variables	*ADF Test		*PP Test	
	<i>T- statistic At level</i>	<i>T- statistic At first differences</i>	<i>T- statistic At level</i>	<i>T- statistic At first differences</i>
LAGROG	-1.0446	-7.08055	-1.0501	-7.07929
LINDSG	-0.8415	-9.10086	-0.7311	-9.32104
LSERVG	-1.7871	-6.42111	-1.7915	-6.37658
LGCFG	-1.5625	-9.5370	-1.4022	-11.7297
LFGC	-1.4008	-7.72421	-1.4008	-7.73112
LGR	-1.3494	-7.51901	-1.3374	-7.51695
LEXP	-0.7104	-9.19350	-0.5847	-8.99140
LCGE	1.54638	-3.62052	1.4468	-6.55690

\*critical at level are -4.140858 at 1%, -3.496960% at 5% and -3.177579 at 10 %. Critical at 1differences are -4.144584 at 1%, -3.489692 at 5% and -3.178578 at 10%.

\*\*critical at level are -4.140858 at 1%, -3.496960% at 5% and -3.177579 at 10 %. \*Critical at 1differences are -4.144584 at 1%, -3.489692 at 5% and -3.178578 at 10%.

The first step in applying an ARDL model is determine the appropriate lag structure for the suggested models. Akaike Information Criterion (AIC) for lag selection has been a pointed with maximum two lags and auto selected methods. The optimum lags are selected relying on minimizing the AIC value. The Eview software has been used to examine the long run effect of the government expenditure in sectors GDP based on the bound test methods. The test result reported in the Table 2.

Table 2. Bound test result

BOUND TEST RESULT		
MODELS	AIC optimal lags	F Statistic
<i>F(lagroG/ lgcfg, lfgc, lgr, lcge, lexp)</i>	1, 2, 2, 1, 1,2	4.71899
<i>F(lindsG/ lgcfg, lfgc, lgr, lcge, lexp)</i>	1, 0, 0, 1, 2,1	6.62736
<i>F(lservG/ lgcfg, lfgc, lgr, lcge, lexp)</i>	1, 2, 2, 1, 1,2	1.28155

Based on the bound test result in Table II the F-statistic for the bound test is 4.718, and 6.6279 for agriculture and industrial model respectively. This clearly exceeds the 5% critical value for the upper bound. Accordingly, the study strongly reject the null hypothesis (No Long-Run Relationship) and conclude the long run equilibrium relationship between the variables in the Agro GDP and industrial GDP models. However, the result also suggested no evidence of long

run relationship between government expenditure and the contribution of service sector to GDP as the F statistic estimated at 1.28155 which is below the lower critical value .Based on these findings, the study proceed further to estimate the error correction term (ECT) value in order to detriment the speed of adjustment toward equilibrium, as well as highlighted the estimated coefficients and significance in short run.

Table 3. Long-run estimation results

<b>Long-run Estimation Coefficient and P-values</b>			
<i>Regressor</i>	<i>AGROG MODEL</i>	<i>INDSG MODEL</i>	<i>SERVG MODEL</i>
LGCFG	0.837434 (0.0135)	0.67110 (0.000)	0.847807 (0.3539)
LFGC	5.793177 (0.0100)	0.18079 (0.6488)	3.419221 (0.2196)
LGR	0.632390 (0.8122)	0.41780 (0.2690)	-1.68464 (0.4452)
LEXP	0.145524 (0.5562)	0.28762 (0.0378)	-1.625506 (0.2681)
LCGE	-0.145345 (0.2792)	0.02315 (0.8008)	0.46010 (0.5505)

The results in table III show that in the long run, government capital with estimated P-value of 0.0135 (0.01%) and government consumption 0.0100 (0.01%) have a significant and positive impact in agriculture GDP. An increase of one percent in government consumption and capital is associated with increase of 5.79 and 0.83 percent in agro GDP. However, the result also proposed no influence form recurrent government expenditure, export and government revenue, where the computed p-value for the variables are statistically insignificant at 5 percent level of significant. The results in table III also show that in the long run, only the government capital reported significant and has positive affect in the economic output of industrial sector. The P-value corresponding to t-statistic for the government consumption, revenue and recurrent expenditure estimated at 0.6488 (64%), 0.41780 (41%) and 0. 8008 (80%) respectively, recording insignificant values and implying a no effect in industry sector output. Furthermore, the estimations results of long-run coefficient appeared in the associated with services GDP model illustrate the all variables were insignificant in long run. Event more, the result suggested negative relationship between government revenue and the services GDP in on hand, and between export and services GDP in another hand.

Table 4. Short-run estimation results

<b>Short-run Estimation Coefficient</b>			
<i>Regressor</i>	<i>AGROG MODEL</i>	<i>INDSG MODEL</i>	<i>SERVG MODEL</i>
D(LGCFG)	0.218794 (0.0040)	0.357663 (0.0001)	-0.073424 (0.5346)
D(LGCFG) <sub>-1</sub>	-	0.176408 (0.0703)	
D(LFGC)	0.480957	0.50508	0.312984

<b>Short-run Estimation Coefficient</b>			
<i>Regressor</i>	<i>AGROG MODEL</i>	<i>INDSG MODEL</i>	<i>SERVG MODEL</i>
	(0.0077)	(0.0066)	(0.1986)
D(LFGC) <sub>-1</sub>	0.677943 (0.0004)		
D(LGR)	0.526604 (0.00150)	-0.33381 (0.0132)	-0.580065 (0.008)
D(LGR) <sub>-1</sub>	-0.676285 (0.0006)		-0.299899 (0.0848)
D(LEXP)	0.023268 (0.7938)	-0.22740 (0.0319)	-0.303932 (0.0848)
D(LEXP) <sub>-1</sub>	-		0.369947 (0.0235)
(LCGE)	0.125367 (0.3114)	0.00466 (0.9646)	0.284312 (0.0954)
(LCGE) <sub>-1</sub>	0.125356 (0.0034)		0.351380 (0.0453)
ECT <sub>t-1</sub>	-0.251829 ( 0.000)	-0.82618 ( 0.000)	0.213240 ( 0.0026)

The short run dynamics result of the ARDL models appeared in Table IV pointed that government capital, consumption has also significant effect in agriculture GDP while recurrent expenditure and government revenue are remain insignificant. Furthermore, the export is found to be insignificant in short run and long run. Although much of the empirical work support the assumption of export led economic growth. However, there no evidence of this positive relationship between export and agriculture GDP in Sudan cause study, which in line with a number of empirical research did not find much support to the export led economic growth hypothesis. These research including among other (Dodaro, 1993), (Yaghmaian, 1994), (Anwer and Sampath, 2000) and (Oxley, 1993). The result also show that the first lag of government revenue is significant and negative indicating increase government revenue would cause decline in agriculture GDP. Sudan government revenue is mainly composed from tax and indirect tax revenue. Many studies confirm that maximization of tax revenue is incompatible with the maximization of the country output.

The result also illustrate the coefficients of error correction term as the speed of adjustment to restore equilibrium in the dynamic model. The ECT coefficient shows how the parameters of government expenditure in the model converge sector output to equilibrium in the long run. The coefficient of ECT estimated at -0.251829 and -0.8261 for agriculture and services GDP models respectively, which is negative and statistically significant at the level of 5%. This implies that the disequilibrium occurring due to a market shock is totally corrected in a rate of 0.25 percent for agriculture sector and 82 percent for services sector a year. It is important to proceed further to conduct model diagnostic test in order to ensure that the produced models are delivering reliable result. The table IV report the model diagnostics test result for the three models

Table 5. Model diagnostics result

	<i>AGROG MODEL</i>	<i>INDSG MODEL</i>	<i>SERVG MODEL</i>
R <sup>2</sup>	0.50	66	0.67
F- statistic	22.4 (0.002)	7.279 (0.00)	6.8641 (0.00)
Durban Watson	2.11	2.115	2.083
Godfrey LM test autocorrelation	0.68853 (0.7087)	1.8250 (0.4015)	0.96163 (0.6183)
Jarque – Bera test normality	19.9531 (0.3268)	2.9673 (0.9864)	4.14668 (0.1257)
Heteroskedastic Breusch Pagan	2.2367 (.0964)	5.8988 (0.8800)	16.15415 (0.4404)

The value of R square for the ARDL model along with F- statistic and Durban Watson suggested good regression model. Nevertheless, it is important also recognize the residual tests in order to examine the fully models efficiency. The Godfrey LM test for autocorrelation, Jarque–Bera test for normality and Breusch-Pagan-Godfery test for heteroscedasticity applied in order to check for the residual in the ARDL models.

The result show that the null hypothesis in serial correlation, normality and heteroscedasticity tests for the suggested ARDL models have been accepted since the p- values are greater than the level of significance. This result indicate that the residual in the three model ae not serially correlated, not heteroscedasticity and normally distributed. Furthermore, the cumulative sum control chart (CUSUM) applied to investigate the stability of the long-run along with the short-run dynamics coefficients. Test result appeared in figure I, II and III proved that the models were stable since the model curve within the border of 5 percent level of significance.

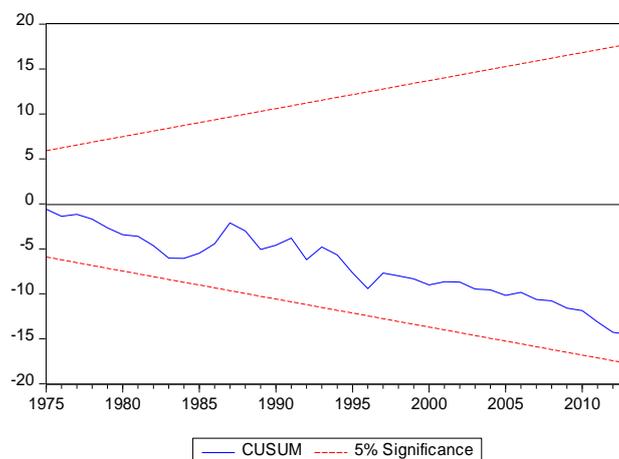


Figure 1. Figure I. CUSUM test for AGROGDP model

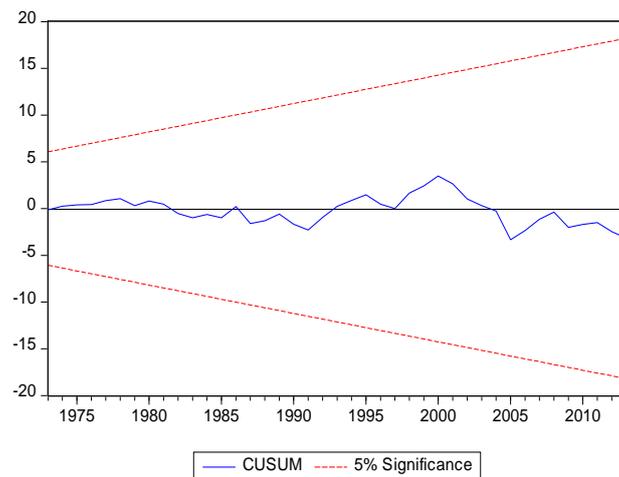


Figure 2. CUSUM test for industrial GDP model

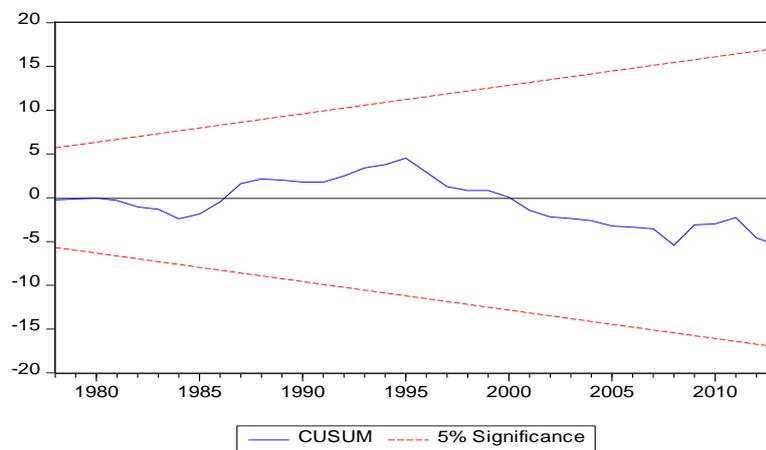


Figure 3. CUSUM test for services GDP model

### Conclusion

The empirical analysis for the relationship between the components of government expenditure and economic output of GDP sectors illustrate existence of long run relationship. Based on the ARDL model and bound test of co-integration, the F-statistic value was estimated at 4.7099 and 6.6279 for agriculture and industrial models respectively and this clearly exceed the 5% critical value for the upper bound test that proposed at 3.38. Accordingly, the study strongly reject the null hypothesis (No Long-Run Relationship) and conclude the long run relationship among government expenditure and agriculture sector in one and between government expenditure and industrial out but in another hand. Output. However, the empirical result obtained from ARDL model for the relationship between the components of government expenditure and economic output of services sector illustrate absent of long run relationship as, the F-statistic value was estimated at 1.28155, which is clearly low than the 5% critical value for the lower bound.

Although, the result show that public capital and consumption have significant influence in agriculture an industrial sectors output, however, the major value of government capital in

Sudan is driven from the acquisitions of new or existing fixed assets include equipment, buildings and other intermediate goods. This type of capital classified as unproductive expenditure. Unproductive government expenditure do not create any productive asset which can bring income or returns to the government. Such type of spending would not ensure real economic growth. Furthermore, the critical literature regarding agriculture production in the Sudan point's low technical efficiency in the gross Sudanese agriculture projects, particularly in the traditional sector. This a condition along with poorly infrastructure and absent of appropriate management seem to be the main reasons laid behind low participation of private investment in agriculture activists. Therefore, it most important to allocate more productive expenditure from the government to establish the necessity infrastructure facilities for economic activities. Furthermore, Introducing modern technologies in the economic process and improved national infrastructure projects in addition to maintaining the fertility of the land in agriculture sector and develop a quality manpower could enhance the sector's performance and encourage private investment.

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# Organisational Justice and Organisational Citizenship Behaviour: Evidence from A Developing Country

**Nurharani Selamat\***

*Faculty of Education, Universiti Teknologi MARA, Kampus Puncak Alam, Selangor, Malaysia*

*Email: nurharani@gmail.com*

**Norshidah Nordin**

*Faculty of Education, Universiti Teknologi MARA, Kampus Puncak Alam, Selangor, Malaysia*

*Email: norshidah@salam.uitm.edu.my*

**Chan Yuen Fook**

*Faculty of Education, Universiti Teknologi MARA, Kampus Puncak Alam, Selangor, Malaysia*

*\*Corresponding author*

## **Abstract**

**Purpose:** The purpose of this study is to examine the relationship between organisational justice and organisational citizenship behaviour.

**Design/Methodology/Approach:** This study has employed quantitative approach using a cross-sectional survey strategy to obtain data from 395 teachers in Malaysia. Proportional stratified sampling was applied to ensure each individual has an equal chance to be selected as respondents. The collected data were then subjected to descriptive statistical analysis and structural equation modelling analysis.

**Findings:** The finding shows that the path coefficient from organisational justice to organisational citizenship behaviour was significant and in expected positive direction.

**Research limitations:** The use of self-administered questionnaire and single-source data may lead to bias concern. The cross-sectional survey employed in this study may also contribute to data inaccuracy.

**Practical implications:** The finding of this study implies that principal needs to create healthy climate in school by providing fair treatment, treat every teacher equally and with respect in order to motivate teachers to exhibit OCB.

**Originality/Value:** The results of this study offer insight on the importance of fair treatment provided by principal to teachers. Moreover, there are limited studies on the relationship between organisational justice and OCB in educational organisations in Malaysian education context.

**Keywords:** Organisational citizenship behaviour, organisational justice, teachers, structural equation modelling.

**Paper type:** Research paper

## **Introduction**

Globalization and growing demands for high education performance are among the factors that drive school organizations to become more effective. In line with schools' effort to provide quality education to the students, Malaysian government has introduced various programmes and policies to enhance school's effectiveness. Despite the huge expenditure on education by the Malaysian government compared to other Asian countries, the quality of Malaysia education system is still falling behind other Asian countries such as Singapore and Thailand. This indicates that higher education budgets and various education reforms are not the most crucial drivers in promoting school effectiveness.

Organisational citizenship behaviour is a voluntary behaviour exhibited by teachers who undertake jobs beyond their prescribed tasks without expecting any official reward from the organization. Based on social exchange theory, organisational citizenship behaviour promotes school effectiveness, and could also be stimulated when the principal exhibits fair treatment to all teachers. However, there has been little research investigating the effect of organisational justice on organisational citizenship behaviour in educational setting.

In fact, the main key to increase schools' effectiveness is very dependent on the teachers as the front liners of the system. The teachers' willingness to go above and beyond their prescribed jobs will improve his/her school's performance and effectiveness (Begolovsky and Somech, 2010). According to (Organ, 1998), voluntarily extra-role behaviour is termed as organisational citizenship behaviour (OCB). The voluntarily extra effort contributed by teachers does not only include conducting extra classes, but also in preparing additional learning materials for the students. These voluntary efforts are expected to improve the students' academic achievement. Furthermore, teachers who assist their colleagues with their teaching and administrative tasks may also lead to organisational efficiency.

This implies that school effectiveness can no longer depend on teachers who only perform their prescribed jobs. School organization needs to cultivate OCB among the teachers to ensure its survival. Thus, it is vital to recognize the determining factors that could influence the teachers to engage OCB as teachers who exhibit OCB are great assets to the school's organization. Research conducted by P.M. Podsakoff, MacKenzie, Paine, and Bachrach (2000) and Spitzmuller, Van Dyne, and Ilies (2008) revealed that organisational justice plays a significant role in stimulating employees' OCB. However, research on the relationship between organisational justice and OCB remain scarce in Asian countries (Young, 2010), especially in educational setting (Burns and DiPaola, 2013). Scholars (Hassan and Noor, 2008; Hollensbe, Khazanchi, and Masterson, 2008; R. Jain and S. Jain, 2015) also claimed that employees may perceive justice differently according to cultural context. Due to these highlighted issues, this study attempts to investigate the effect of organisational justice towards OCB among the teachers in Malaysia.

## **Literature Review**

### ***Organisational Citizenship Behaviour***

Chester Barnard and Daniel Katz' concern on the importance of employees voluntarily extra-role behaviour in promoting organisational effectiveness has drawn the interest among scholars in organisational behaviour field. Due to this reason, scholars attempted to develop various concepts to represent this type of behaviour such as spontaneous behaviour (Katz and Kahn, 1966), OCB (Bateman and Organ, 1983), prosocial organisational behaviour (Brief and Motowidlo, 1986), organisational spontaneity (George and Brief, 1992), and contextual

performance (Borman and Motowidlo, 1997). However, (LePine, Erez, and Johnson, 2002) asserted that those concepts are similar with OCB.

OCB is defined as “individual behaviour that is discretionary, not directly or explicitly recognized by the formal reward system and that in the aggregate promotes the effective functioning of the organization. By “discretionary”, we mean that the behaviour is not an enforceable requirement of the role or the job description that is, the clearly specifiable terms of the person’s employment contract with the organization; the behaviour is rather a matter of personal choice such that its omission is not generally understood as punishable” (Organ, 1988, p.4). This OCB concept highlights three crucial components of OCB. Firstly, employees’ extra-role behaviour cannot be enforceable. Secondly, employees’ willingness to exhibit extra-role behaviour is not rewarded by the formal reward system. Thirdly, employees’ OCB could enhance organisational effectiveness.

Based on this conceptualization, Organ (1988) formulated five dimensions of OCB known as altruism, conscientiousness, courtesy, sportsmanship, and civic virtue. These dimensions have been widely recognized and used by researchers in examining OCB (N.P. Podsakoff, Whiting, P.M. Podsakoff, and Blume, 2009). The first dimension, altruism, involves the tendency to help colleagues in solving work-related problems. The second dimension, conscientiousness, refers to effort made by employees to do the right and proper things for the organization. Courtesy as the third dimension is proposed by (Organ, 1988) and constitutes the employees’ behaviour to prevent work-related problems. Fourthly, sportsmanship, refers to employees’ tolerance when experiencing unsatisfactory condition at the workplace. Finally, civic virtue, is the behaviour indicating the willingness to actively participate in the organisation. However, comprehensive review by Van Dyne, Cummings, and Parks (1995) on Organ’s (1988) OCB conceptualisation suggested that future research should categorize the dimensions proposed by Organ (1988) (altruism, conscientiousness, courtesy, sportsmanship, and civic virtue) as an affiliative/promotive behaviour oriented OCB because these five dimensions comprise employees’ behaviour that are helpful, cooperative and maintain the status-quo.

Following the suggestion provided by Van Dyne et al. (1995), this study conceptualized teachers’ discretionary behaviour as helpful and cooperative in school organization as OCB. Furthermore, Somech and Drach-Zahavy (2000) asserted that teachers’ OCB consist of helping behaviour towards students, colleagues, and school. Therefore, the OCB dimensions in this study consist of helping students, colleagues, and school. The first dimension, helping students, refers to teachers who are willing to assist students with their academic revision after school hours. The help may come in the form of assistance and conducting extra classes during school holidays. Secondly, helping colleagues consists of teachers’ willingness to help their colleagues with their teaching tasks and workloads. Finally, helping school illustrates teachers’ discretionary behaviour who actively participate in school programmes.

### ***Organisational Justice and Organisational Citizenship Behaviour***

Social exchange theory is among the most dominant theories used to explain OCB among teachers (Blau, 1964). Social exchange theory posits that teachers would perform OCB to repay the intangible reward they receive from school principal. For example, the teachers will reciprocate by exhibiting OCB when they deem the school principal as providing fair treatment to all teachers, which enhances the school’s effectiveness. During social exchange process, individuals (teachers and school principal) tend to seek for equality. For example, a teacher may feel unjustly treated if his or her colleagues get better treatment from the principal while

exhibiting equal level of OCB. On the other hand, the principal may also feel dissatisfied when the teachers unwilling to exhibit OCB despite the fair treatment provided to them. Individuals who perceive the presence of reciprocity and equity in the exchange relationships are more likely to feel satisfied and maintain these relationships. Principal's fair treatment to teachers could create high quality of social exchange relationship. As a result, teachers feel obliged to repay the principal's deed by performing OCB (Moorman, 1991). In fact, P.M. Podsakoff et al. (2000) who conducted extensive analysis on OCB predictors discovered that organisational justice is the key antecedent for OCB which is drawn from social exchange theory. Therefore, the research framework of this study (Figure 1) is predominantly based on the social exchange theory by Blau (1964). Organisational justice serves as an independent variable while OCB is the dependent variable.



Figure 1: Research Framework

Organisational justice can influence employees' behaviour towards their work and, in turn reduce or raise the employees' work performance and the organization's success rate (Moorman, 1991). The conceptualization of organisational justice theory was derived from Adams (1965) equity theory. Equity theory empathized on the concept of input and outcome. According to Adams (1965), input refers to individual's contributions, while outcome refers to rewards that an individual receives based on the input provided during the process, for which he or she expects a fair return. Thus, employees regards justice to exist in the organization when their input-output ratio is equitable and the comparison between the input-outcome levels of them and their colleagues is reasonable (Adams, 1965; Baldwin, 2006). Employees would feel poorly treated when their input-output ratio is not reasonable or their colleagues received more output (Cropanzano and Greenberg, 1997).

In this study, the organisational justice refers to teachers' perceptions on equal and fair treatment they receive from principal. Specifically, Greenberg (1990) defined organisational justice as the employees' perceptions on employer's behaviour which are fair, respectful, and equitable. Under the school setting, according to Rego, Miguel, and Carlos (2009) the organisational justice is operationalized as a five-dimensional construct. The first dimension, task distributive justice, refers to principal's fairness in allocating the tasks to teachers. Secondly, reward distributive justice consists of teachers' perception on the awards allocation for them. Thirdly, the procedural justice, refers to the extend teachers perceive fair decision making process. The fourth dimension, interpersonal justice, includes the principal's treatment to the teachers which comprise dignity, respect, and polite. Finally, the informational justice illustrates the explanations provided to the teachers. However, reward distributive justice was excluded in this study as many studies claimed that the dimension is not an OCB predictor due to OCB's noble nature of not expecting any tangible rewards (Lambert and Hogan, 2013).

Despite the limited studies on the relationship between organisational justice and OCB, a significant relationship is reported between the variables. Study by R. Jain and S. Jain (2015) on the bank managers in India discovered that organisational justice explains 16.6 per cent of OCB variation. Under the school setting, Demir (2015) found that preschool teachers exhibit high level of OCB when their principals create organisational justice at the working place.

Moreover, study by Awang and Ahmad (2015) in Malaysia revealed that polytechnics lecturers would exhibit OCB as an exchange of the fair treatment they received from the organization. These findings suggest that organisational justice plays a crucial role in influencing employees' OCB, hence, it has become significantly important for the principal to nurture organisational justice by conducting fair decision making procedures, fair tasks allocation, ethical behaviour, and provide necessary information to the employees when required. Based on these empirical evidences, this study proposes:

H1: Organisational justice has positive and significant relationship with organisational citizenship behaviour.

## **Methodology**

### ***Sample and Procedure***

Based on Krejcie and Morgan (1970), the sample for this study was supposed to be drawn from 327 secondary school teachers in Selangor. However, the sample size was increased to 395 respondents as the response rate for a survey is often less than 100 percent (Bartlett, Kotrlik, and Higgins, 2001). A proportional stratified sampling technique was employed in this study and the respondents were stratified based on school locations. Based on the proportional stratified sampling technique, 15 secondary schools in urban area and 5 secondary schools in rural area were selected to form a sample of 395 secondary school teachers. In order to ensure accurate perceptions were received, the sample of this study was drawn based on the following criteria: permanent teachers who have minimum 1 year of teaching and working experience, and must not hold any administrative positions such as principal, senior assistance, and subject head.

This study employed a cross-sectional survey to obtain the teachers' perceptions on organisational justice and OCB. Based on 395 distributed questionnaires, 384 questionnaires were returned and only 375 questionnaires were valid and usable. The remaining 375 respondents are suffice for further analysis as it exceeds the required sample size suggested by Krejcie and Morgan (1970). The study was approved by the Educational Planning and Research Development Unit, Ministry of Education, Malaysia and Selangor State Education Department.

### ***Instrument***

The first part of the questionnaire consists of demographic details, while the second part discusses the measurement for organisational justice, and the final part comprises measurement for OCB. The measurements for organisational justice and OCB were assessed using the 7-point Likert scale, where 1 represents "strongly disagree" and 7 indicates "strongly agree". This study adapted the organisational justice scale developed by Niehoff and Moorman (1993) and Rego et al. (2009) and to measure teachers' perceptions on organisational justice practice in their schools. The measurement included four variables which are the task distributive justice, procedural justice, interpersonal justice, and informational justice. As for organisational citizenship behaviour scale, this study adapted the scales developed by DiPaola and Tschannen-Moran (2001), Hussin and Chin (2014), Oplatka (2006), Somech and Drach-Zahavy (2000), and Williams and Anderson (1991) to develop a psychometrical measurement for OCB. The questionnaire was reviewed and refined by five experts with at least 10 years experiences in human resource development, education, and psychometrics evaluation before

being tested in a pilot study. A pilot study was administered to 360 secondary school teachers in Selangor, but only 305 questionnaires were valid for validity and reliability assessments. Validity assessment was conducted by using the exploratory factor analysis, through the principal axis factoring with varimax rotation method. Items with less than 0.5 factor loading were dropped. Table 1 and Table 2 summarise the loadings of each factor for organisational justice and OCB. As shown in Table 1, component 1 consisted of items from procedural justice (D05, D07, D06), informational justice (D12IFJ and D11IFJ), and interactional justice (D08ITJ and D10ITJ). Component 1 was labelled as procedural justice as all items loaded on this component were initially from procedural justice scale (Niehoff and Moorman, 1993). Meanwhile, component 2 was labelled as task distributive justice as it comprised original items from this component. The initial two items were dropped as their factor loadings were less than 0.5.

Table 1: Factor Loadings for Organisational Justice

Items	Components	
	1	2
D12IFJ	.876	
D08ITJ	.875	
D10ITJ	.826	
D05PJ	.799	
D07PJ	.781	
D06PJ	.743	
D11IFJ	.705	
D01DJ		.902
D02DJ		.869
D03DJ		.656

Table 2 shows that OCB consists of only one component with three items (B02A, B03A, and B04A). The initial five items were dropped due to factor loading of less than .50.

Table 2: Factor Loadings for Organisational Citizenship Behaviour

Items	Components
	1
B02A	.788
B03A	.775
B04A	.720

After performing a validity analysis, both variables were subjected for reliability analysis. The Cronbach's  $\alpha$  values for organisational justice and OCB were 0.935 and 0.783, respectively. The results indicate that the scales used in this study were reliable as the Cronbach's  $\alpha$  values were greater than the 0.7 threshold.

### Data Analysis

In this study, descriptive statistical analysis was employed to examine the respondents' demographic profiles. For the hypothesis testing, structural equation model with two-step approach was utilized to assess the reliability and validity of the constructs. In the first step, measurement model was applied to the confirmatory factor analysis to assess the validity of organisational justice and OCB constructs. Meanwhile, the structural model was assessed in the second step, in order to test the hypothesized structural model

## Results

### *Demographic Profiles*

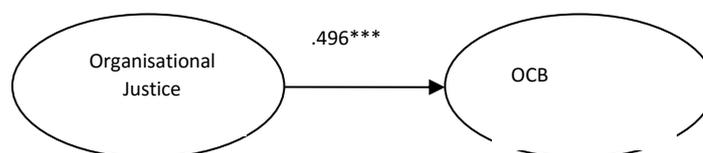
The descriptive analysis shows that most respondents are female (74.6%). As for respondents' age group, majority of the respondents were aged between 31 to 40 years old (40.7%). Most respondents are Malays (82.3%), Bachelor degree holder (84.1%), and have 6 to 10 years of teaching experiences (26.2%). Finally, in term of the number of years the respondents are positioned at their present school, most of them have been working in their current school for 1 to 5 years (42.1%).

### *Assessment of Measurement Model*

Confirmatory factor analysis was conducted using the AMOS version 21. Result showed that all loadings in the model were statistically significant ( $p < 0.001$ ), and the loaded indicators were very well on their respective factors. The fit indices also reveal that the fit level for this model was acceptable,  $\chi^2/df = 2.79$ ,  $p = 0.00$ ; comparative fit index (CFI) = 0.96; Tucker-Lewis index (TLI) = 0.94; and root mean square error of approximation (RMSEA) = 0.069.

### *Assessment of Structural Model*

As the measurement model exhibited an adequate fit model, the hypothesized structural model as shown in Figure 1 was tested. Result showed that the model's fit was acceptable,  $\chi^2/df = 2.81$ ,  $p = 0.00$ ; comparative fit index (CFI) = 0.96; Tucker-Lewis index (TLI) = 0.94; and root mean square error of approximation (RMSEA) = 0.069. In addition, it was found that organisational justice significantly affected the teachers' affiliative oriented OCB ( $\beta = .496$ ,  $p < 0.001$ ), thus, supported hypothesis H1.



\*\*\*  $p < .001$

Figure 2: Structured Path Model

## Discussion and Conclusion

The finding of the study affirms the social exchange theory as it supports the significant and positive relationship between organisational justice and OCB. This implies that the relationship between principal and teachers in school organization requires "give and take" reciprocity. When the principal treats the teachers fairly and ethically, teachers would like to maintain the quality relationship by reciprocating with OCB. The result of this study confirms earlier

findings which supported the relationship between organisational justice and OCB and the organisational justice as significant predictor of OCB.

As teachers' OCB may enhance the school's effectiveness, school principal should understand the factors that could influence the teachers to exhibit OCB. This study has provided empirical evidence that one of the factors that could influence the teachers to exhibit OCB is the organisational justice. A healthy condition created by the principal in school could motivate teachers to exhibit OCB. In other words, a sense of justice in school is dependent on the principal's capability to create justified perceptions among the teachers. In line with this, the principal should employ the organisational justice principle during the decision making process. Not only the principal needs to be fair in the decision making, but the principal must take into account the teachers' opinions during the process. Principal must also take the responsibility for any decisions that were made and willing to refine poor decisions after acquiring more information from reliable sources. Furthermore, principal must be fair in distributing the tasks among teachers. Every teacher must receive equal tasks in term of teaching and administrative works. When the principal employs fair and just treatment to all teachers, high level of OCB will be exerted and may in turn enhance the school's effectiveness. As for the limitation and suggestion for future research, this study suggests that future research could investigate other factors affecting teachers' OCB such as job characteristics, personality traits, and workplace spirituality as this study only discussed the relationship between organisational justice and OCB. Future studies could also extend the research framework of this study by including principal's support as a moderator to strengthen the relationship between organisational justice and OCB. Moreover, since this study relied only on cross-sectional data and single source data, it is suggested for future studies to employ a longitudinal study and use multiple respondents (e.g. principal and teachers) in order to investigate the factors affecting teachers' OCB.

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# Ownership Structure Attributes, Outside Board Members and SMEs Firm Performance with Mediating Effect of Innovation in Malaysia

**Aamir Iqbal Umrani\***

*Department of management and Humanities, Universiti Teknologi PETRONAS, Malaysia.  
Email: umrani.aamir@yahoo.com*

**Satirenjit Kaur Johl**

*Department of management and Humanities, Universiti Teknologi PETRONAS, Malaysia.*

**Mohammad Yussoff Ibrahim**

*Department of management and Humanities, Universiti Teknologi PETRONAS, Malaysia.*

*\*Corresponding author*

## **Abstract**

**Purpose** – The purpose of this study is to explore a model to measure the SMEs firm performance based on the ownership structures and outside board members, and to examine the mediating role of innovation on family ownership, foreign ownership, outside board members and firm performance.

**Design/methodology/approach** – Extensive literature review was carried out to identify the variables and to propose the conceptual model.

**Findings** – Based on the discussion and literature review, a conceptual model is presented to investigate the ownership structure, the outside board members, innovation and firm performance.

**Originality/value** – Much has been investigated on different ownership structures, outside board members and their relationship with innovation or firm performance. None of the past studies presented a holistic approach to investigate the mediating effect of innovation on the ownership structures, the outside board members and firm performance with particular reference to Malaysian SMEs

**Keywords:** Family ownership, foreign ownership, outside board members, innovation, firm performance, SME, Malaysia

## **Introduction**

In today's rapidly developing world, innovation becomes a critical success factor for the businesses. Innovation is a critical success factor for almost every organisations' development and success. According to the OSLO Manual, "Innovation is the implementation of a new or significantly improved product or process, a new marketing, or organisational method in business practices" (OECD, 2005). Prior studies were focused on the impact of internal and external corporate governance (CG) practices on the innovation performance of the SMEs (Belloc, 2011; Sapra, Subramanian, & Subramaninan, 2011). This conceptual paper attempts

to fill the research gap by examining the family ownership, foreign ownership, outside board members and firm performance using innovation as a mediator. Past literature on SMEs ignored the investigation of the mediating effect of innovation with the relationship among family ownership, foreign ownership, outside board members and firm performance (Kotadkiewicz, 2013; Xie, Zeng, Peng, & Tam, 2013). Thus, the presence of innovation variable would be significant to enlighten the differences in concepts based on the SMEs responses towards the innovation. SMEs are the central subject in this research because of its vital presence in the economic growth of the country. SMEs represent 97.3 percent of overall business establishment in Malaysia. Specifically, there are 645,136 SMEs in Malaysia, compared to the 17,803 large firms (Malaysia, 2012). SMEs are the major contributor to the labour productivity and employment growth; SMEs also have the higher number in overall employment growth. In terms of Gross Domestic Product (GDP), the Malaysian SMEs shares 32.5 percent of the overall country's GDP (Malaysia, 2012). Therefore, Malaysian SMEs contribution is critical for the country to become a high-income nation by 2020.

Different ownership structures, e.g., family ownership and foreign ownership influenced the innovation. In Malaysia, most of the SMEs are family owned. Almost 67 percent of the SMEs in Malaysia are family concentrated (Umrani, Johl, & Ibrahim, 2015). Past research revealed that the family ownership or concentrated ownership has a negative relationship with innovation and firm performance. Raoul, Pierluigi, and Monica (2012), concluded that the ownership concentration has the negative impact on innovation. Prior studies were mainly focused on developed countries. Therefore, the findings of those studies cannot be generalised in the developing country's context (M., Oosterhout, & Carney, 2012; P., Essen, & Oosterhout, 2009). However, few researchers from past focused the Malaysian listed companies registered under the Malaysian stock exchange in their analysis (A. & M., 2005; N., 2006). Secondary data was used for the investigation; data was gathered from annual reports of the companies. There is scarce literature regarding the study to investigate the relationship of family ownership, foreign ownership, the board of directors and firm performance using primary data collected via survey questionnaires in the Malaysian context.

Therefore, an exploratory study is important on the SMEs to investigate the relationship between family ownership, foreign ownership, outside board of directors, firm performance and innovation variables in developing countries. Thus, an empirical study on this issue needs serious consideration. Hence, our aim is to explore a model for firm performance based on the ownership attributes, outside board members and innovation. We seek to investigate the relationship between family ownership, foreign ownership, outside board members and firm performance using innovation as a mediator. The following sections will discuss the related literature on the ownership attributes, the board of directors, firm performance and innovation. In conclusion, we discuss the suitable methodologies and expected results in the conclusion.

### **Family Ownership**

Different types of ownership, e.g., family ownership and foreign ownership have controlled SMEs. Whereas, family owned firms are the common type of firms around the globe (Umrani et al., 2015). In such type of firms, families have the control of the firm, whereas, the members of the board of directors (BoDs) are chosen from the family or close friends. Such BoDs may work for their own benefits rather than in the interest of other shareholders (Umrani et al., 2015). Mostly in the family firms, the majority shareholders take most of the decisions of the

firm.

Past researcher investigated that, the ownership concentration depresses innovation (Raoul et al., 2012). Further, they stated that concentrated ownership has a negative relationship with innovation and firm performance. Italy is one of the countries that represents an ideal environment to study conflicts of interest between large and minority shareholders and their possible impact on innovation. In fact, the Italian corporate sector has the strong presence of individual owners, which hold sizable equity stakes in companies, while institutional ownership is less diffused compared to the United States. The results suggest that the conflicts of interest between large and minority shareholders indeed contribute to the negative effect of ownership concentration on innovation.

In a research, Chrisman and Patel (2012) concluded that non-family firms invest more in RandD compared to the family firms. Further, they mentioned that such investments are dependents on readjustments if the family firm increases or decreases its performance. Another sample of 500 firms, Block (2012) also finds the negative relationship between family ownership and RandD investment. Moreover, few other studies also support the argument that family firms spend less in RandD compare to their non-family counterparts (Fernando & Maria, 2011; Munari, Oriani, & Sobrero, 2010).

On the other hand, some studies find a positive link between the introduction of new products, service and innovation outcomes and family involvement. The significant justification of those studies is that family firms own distinctive characteristics and resources, which encourage innovation. For instance, family firms choose innovation and learning as their long-term goals (Zellweger, 2007), their informal knowledge sharing, and stewardship behaviour (Eddleston & Kellermanns, 2007). Ayyagari, Demirgüç-Kunt, and Maksimovic (2012), proved that family firms produce a higher number of new products compared to the non-family firms. They find the positive relationship between family ownership and the introduction of new products. Similarly, other researchers also find positive relationship between innovation and family firms (Craig & Dibrell, 2006; Westhead, 1997). In summary, past literature produced mixed conclusions regarding innovation in family and non-family firms.

H1a: Family ownership has positive relationship with innovation

H1b: Family ownership has positive relationship with firm performance

### **Foreign Ownership**

There is always a substantial charm to attract foreign direct investment (FDI), no matter whether a country is developed, emerging or less developed (Thompson & Zang, 2015). FDI has always been encouraged and given special assistance. Apart from direct benefits, such as the creation of new jobs and access to new technologies (Acs, Brookesbank, O'Gorman, Pickernell, & Terjesen, 2007), the presence of foreign-owned firms bring several spill-over benefits to the domestic economy. Such benefits could come in the form of transfer of skills, technology diffusion, increased competition, market access effects, and productivity enhancement.

It has been observed that the foreign-owned firms perform better in terms of productivity than the local firms (Thompson & Zang, 2015). The positive impact of FDI towards productivity of home country depends on either own-firm effect on improved productivity in firms with substantial foreign ownership or over spillover effects. Masso, Roolaht, and Varblane (2013),

suggested that the performance of a foreign owned company versus local company can be assessed by looking at the variation in the degree of innovation and RandD.

In contrast, in some studies, FDI has been negatively attributed with innovation (Görg & Strobl, 2003), and looking places with lowest labour costs degrading the source of this benefit (Bellak, Leibrecht, & Riedl, 2008). Thus, FDI may not entrench itself within local countries, meaning that only a few domestic businesses may take advantage of supply contracts (Classen, Carree, Gils, & Peters, 2013). Employees in such foreign firms would have limited space to exhibit their independence and intuition, putting the local workforce away from ownership and entrepreneurship making it insignificant. Furthermore, the competition between foreign-owned and local firms may weaken the existing SME sector (Masso et al., 2013).

H2a: Foreign ownership has positive relationship with innovation.

H2b: Foreign ownership has positive relationship with firm performance.

### **Board of Directors**

Nevertheless, some studies from developed economies focused the impact of external and internal corporate governance (CG) approaches on the innovation performance of the SMEs (Belloc, 2011; Sapra et al., 2011). Past literature suggested different mediums of CG, where CG can affect innovation. In such situation, Long-term block shareholders are bases of patient capital. For instance, owners who have control using leveraged buyouts (Ughetto, 2010) and institutional investors having extensive investment horizon (Aghion, Van Reenen, & Zingales, 2013) can improve innovation by putting resources to the innovation and through offering long-term benefits to managers with career concerns. In concentrated ownership, the owner has the advantage to check the innovative activities of management and it has been expected that to generate sustained objectives, such as innovation. A competent board of directors, with the separation of board chairperson and CEO, can improve the innovation through accessing the outside resources and monitoring (Lacetera, 2001).

### **Outside Board Members**

Board of directors having outside members on board could influence the corporate performance either negatively or positively. Past studies provided different arguments against both viewpoints, highlighting the monitoring or advising role of outside board members.

It has been argued that, outside board members are more independent than insiders, because of their personal career does not depend on the relations with direct board colleagues or the CEO (Ferris, Jagannathan, & Pritchard, 2003). Further, they concluded that the experienced outside board members have a positive impact on intensive monitoring and the advising service provided. Masulis and Mobbs (2011), further illustrates that the firms with inside directors and outside board members perform better than the firms' with inside board members only. The Researcher concludes that outside board of directors helps to reduce the agency cost (Mobbs, 2013).

In contrast, some researchers presented the negative relationship between outside board members and performance. Coles et al. (2014), finds that the CEO in most firms influence the board through the appointment of new board members in their favour. Appointing a person who has personal contacts with the CEO may not monitor the managers adequately. Existing

literature shows the positive link between boards and firms' corporate performance. A broad proof on the impact of board structure on innovation is as yet missing (Balsmeier, Buchwald, & Stiebale, 2014). To the best of our knowledge, Baysinger, Kosnik, and Turk (1991) were the first to investigate the relationship between some of the board structures and innovation. They presented the positive relationship between a portion of board members and RandD expenditure. Whereas, J. L. Coles, Daniel, and Naveen (2008), finds that firms focused on RandD have a greater number of inside board members having the firm-specific knowledge, which is directly related to the greater firm value.

*H3a: Outside board members have positive relationship with innovation.*

*H3b: Outside board members have positive relationship with firm performance.*

### **Firm Performance**

Firm performance, defined as how a firm uses its internal resources to sustain in the marketplace (Thompson & Zang, 2015), reflects the achievement of its strategic goals and growth objectives (Hult, Hurley, & Knight, 2004). Firm performance is the effect of the relationship between actions taken in response to competitive forces that allow the firm to utilise its internal resources and adjust to its external environments, integrating the ideas of efficiency and effectiveness. In this regard, firm performance is linked with the overall firm accomplishments due to new or improved measures taken to increase profit and growth (Gunday, Ulusoy, Kilic, & Alpkan, 2011). Financial and non-financial measures need to be used to achieve the strategic goals and to measure prolonged success (Avci, Madanoglu, & Okumus, 2011). Firm's innovation capacity may influence the firm performance (Talke, Salomo, & Kock, 2011). Effective innovation can be progressively seen as a significant element to increase the firm performance in numerous industries and sectors (Zahra, 2010), and it can bring the competitive advantage to the firm and help to survive in the marketplace (Jiménez-Jiménez & Sanz-Valle, 2011).

Occasionally, SMEs are short term focused and they cannot identify the advantages and opportunities available to them in the marketplace. Prior literature provided the mixed results on SMEs performance. Few authors concluded with the positive relationship between innovation and firm performance, while others found the negative or no relationship (Geroski & Machin, 1992; P. et al., 2009). Keskin (2006), analysed that, innovative capabilities of SMEs help to improve their firm performance, whereas J. L. Coles, Daniel, and Naveen (2014) do not find such relationship. According to Otero-Neira, Lindman, and Fernández (2009), innovation has the positive impact on firm performance and firms' other performance levels are depending on a variety of innovations developed (Forsman & Temel, 2011). An SME works in a niche market by creating close contact with its customers. There is mutually dependent and supporting an association between innovation and firm performance (North & Smallbone, 2000). In summary, researchers provided mixed and inconsistent results of the relationship between innovation and firm performance.

### **Innovation**

An important factor contributing the success of industrial firms is the level of their innovativeness. Because of the extreme international competition, demanding and fragmented markets, and fast changing technologies, innovation has been considered as one of the utmost

factors of firms' success. Particularly, it is commonly recognised that innovation influences the financial performance (Hult et al., 2004).

Similarly, innovation is an important factor of the competitive performance of firms and countries equally. Innovation is mainly vital to the developing economies, as such economies try to increase the productivity and incomes (Shapiro, Tang, Wang, & Zhang, 2015). As a great developing economy, China identifies the critical significance of innovation and has embraced strategies to enrich innovative activities. Existing literature suggests that the RandD activities improved significantly over past decades (Huang, 2010), and this led researchers to investigate the factors of innovation in China, particularly the effects of RandD. The RandD activities within Chinese SMEs have a positive relationship with innovation and firm performance (Sun & Du, 2010). These positive effects are moderated by foreign knowledge access and incentive schemes (Yuan, Chenlu, Yi, & Mingfang, 2010).

Therefore, the innovation can be seen as a critical driving force for the economic development. Innovation has been considered as the most critical source of strategic change within the business environment, which help firms to sustain in the marketplace. Additionally, Aminreza, Maryam, and Lagha (2011) structured the reasons why enterprises realised the necessity of innovation: create new markets, to increase product quality, expand product range, reduce labour costs, improve production processes and materials; environmental damage and energy consumption; and replace products or services. Therefore, since past decades, innovation had been studied in deep research and analysis.

However, if countries are not capable of nurturing the innovation, then those countries may highly rely on imported innovative products. Similarly, it is critical for firms to engage in innovation activities, otherwise, firms may lose their market share due to the customers' shift toward innovative products. Therefore, innovation is one of the critical sources to meet customers' requirement and enable firms to adopt new technologies, and this becomes the most important concern of many enterprises. The capacity of a firm should not be limited to maintain the existing business, but it is to take the business to the new horizon and introduce the innovation for their survival. In this regard, Wang and Kafouros (2009) assumed that the firms which are unable to update their products and processes find their survival in the worst situation, because of the immense contribution of innovation to firms' success and competitiveness.

Innovation is one of the important aspects of company's growth. Prior studies find that innovation activities are relatively significant in determining firm performance (Chen, Cheng, & Hwang, 2005). As such, innovation can be seen as one of the most powerful competitive weapons in the business operations. Past researches focused on the innovation and firm performance in large firms (Gilmore, Galbraith, & Mulvenna, 2013; Zhu, Wittmann, & Peng, 2011). Thus, the generalizability and findings of such studies need further investigation on the SMEs.

*H4: Innovation has the positive mediating effect between ownership structures, outside board members and firm performance.*

Past studies focused on finding the link between ownership structures, board of directors and firm performance (J. W. Coles, McWilliams, & Sen, 2001; McGuire, 2000). None of the studies in the past examines innovation with ownership structures, board of directors and firm

performance in one study.

### Conclusion

Based on the discussion, this study develops the conceptual model (Fig-1) which proposes the relationship between family ownership, foreign ownership, outside board members, firm performance and innovation.

We predict that a variance in the mean score of SMEs firm performance based on the different ownership structures, outside board members and innovation. We also foresee a positive correlation between ownership structures, innovation and firm performance. The outside board members assumed to significantly explain the variance in SMEs firm performance. This study would help in understanding the SME corporate governance and firm performance in the Malaysian context. This study will apply the exploratory mixed method, as we anticipate the need for qualitative and quantitative approaches. We hope that by applying mixed method approach, we could minimise the disadvantages and maximise the advantages connected to a particular methodology adopted. This empirical study will involve a series of research activities such as interviews with the regulatory body, academicians and top management persons of

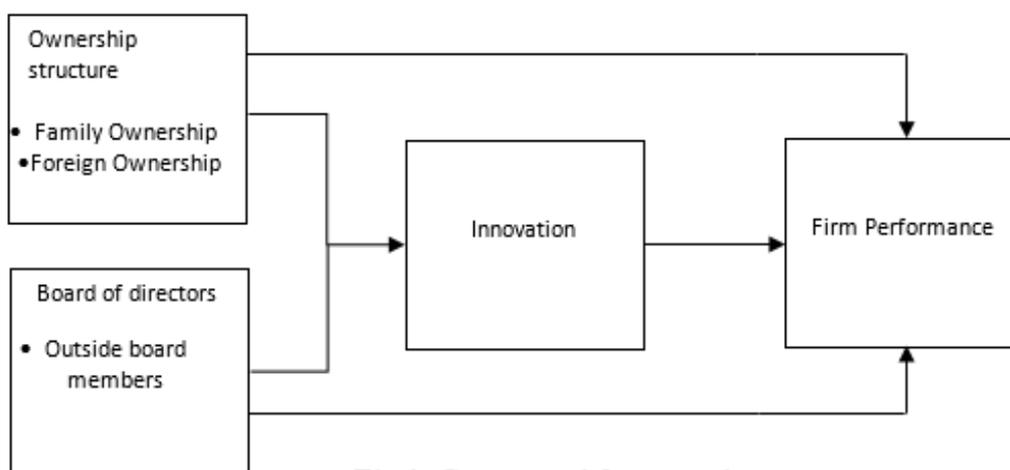


Fig.1. Conceptual framework

SMEs for a better understanding of the research problem and it will help to develop quantitative survey questionnaire. The quantitative process would comprise of the distribution of the survey questionnaires to the senior management of SMEs across four states of Malaysia, including Selangor, Kuala Lumpur, Perak and Penang. One of the most significant contributions is the introduction of the conceptual model on ownership structures attributes, outside board directors, innovation and firm performance based on Malaysian context. It is also interesting to know whether the “innovation” attributes a have positive (negative) relationship with ownership attributes and outside board members, as well as to understand the mediating effect of innovation between ownership structures, outside board members and firm performance. This preliminary conceptual work is the part of the PhD research. Furthermore, this study is looking forward to further empirical work to consider the effects of ownership attributes, outside board members, innovation and firm performance towards Malaysian SMEs perspective.

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# A Literature Review of Competence Development on Academic Career Advancement: A Human Resource Development Perspective

**Lawrence Arokiasamy**  
*UCSI University, Malaysia*

**Nazanin Mansouri**  
*HELP University, Malaysia*

**Rani Ann Balaraman**  
*Universiti Sains Malaysia (USM), Penang, Malaysia*

**Normalini Md Kassim**  
*Universiti Sains Malaysia (USM), Penang, Malaysia*

## **Abstract**

**Purpose** – Malaysia is becoming one of the education hubs in the region. Based on the 10th Malaysia plans, the aim of the government aims for education sector to become one of the biggest contributors to the economy. Moreover, Malaysia is moving fast to become a knowledge based economy. One of the key elements of this process is having quality academics. To develop the academics, incentives such as advancement in academic career need to be developed.

**Design/methodology/approach** – Therefore, formulating academic career advancement based on internal and external factors become more and more important. This study aims to explore the effect of competence development on academic career advancement in Malaysian private universities.

**Findings** – The major outcomes of this paper are competence development individual factors have great effects on academic career advancement in Malaysian private universities.

**Practical implications** – The contributors of competence development are four individual factors namely: knowledge, skills, attitude and behavior.

**Originality/value** – To date, with the best knowledge from the study, there is no research has been conducted in the area of competence development on academic career from human resource development perspective. This research going to be the first study conducted in in this manner.

**Research limitations** – The study has challenges on defining academic career and competence model from human resource development perspective.

**Keywords:** Competence development, academic career advancement and private universities.

**Paper type:** Research Paper

## **Introduction**

This study provides an overview of academic career advancement, competence development and its relation with career advancement in Malaysian private universities. Based on the 10th Malaysia Plan (2011-2015), the main agenda in attaining the status of a developed nation is engendering excellent skilled labor. Therefore, multiple grants from the Human Resource Development Fund have been brought forward by the government to aid employers in educating their employees. For that reason, Institutions of Higher Learning (IHLs) must advance graduates' competency rate with the goal of 75% PhD employees and in total 18,000 in research universities by 2015. Moreover, absorbing retired and foreign academic employees by reconsideration on salary package have a significant effect (Arokiasamy, Ismail, Ahmad and Othman 2011).

Generally, advancing up an arranged hierarchy through an organization or profession is called 'career'. The concept was each person 'chose' a career that reveals in an arranged way. It was a noble notion, which led to the result that some people had a career, most of them had a job and some don't have a job or career. Nowadays, in the post-modern era, this concept is shaken. The fast changing global environment and technology changes force the organizations to constantly adapt them and change regularly. Hereupon, organizations are less likely to make a long-term devoting to individuals and are more interested about flexibility and changeability of the tasks and roles that each individual can play.

Right now, universities and professors are under pressure from different industries as they have become more global and competitive in nature. But still, career system in academia has a unique nature, which always makes it distinct from the other career models based on hierarchical segmentation. Now, with changes in the nature of careers, many organizations are trying to coincide their career advancement model with the academic career advancement model. Baruch and Hall claimed that the academic career model can serve as a "role-model" to the innovative new career concepts such as the protean (Hall, 1976) and (Hall, 1986).

Competency is defined as an individual's cryptographic capability to effectively perform a specified task or problem situation, somehow that is objectively tangible and assessable (Hoekstra and Van Sluijs, 1999). Therefore, competence development is the concept of improving and creating competence in a human being with knowledge, skills, behavior and attitude as the key factors. These factors and the method of measuring them is called competence development model.

## **Research Problem and Research Question**

Procedure of characterizing the knowledge, skills and qualifications that are needed to be successful is called competency (Dubios, 2002). For several years, organizations have been using competency modeling as a foundation of development, such as providing training (Marrelli, 1998; Dubois, 2002). The main purpose of competency modeling is to determine and explain the competency that makes some people successful, moreover it helps to hire staff who possess these qualities or developing qualities in other people, which often lead to changing or reassigning those who can't reach the bottom line of the competencies (Smart, 1999). Thus, the entire quality and bottom line of the company will improve (Teodorescu, 2004). Competencies provide necessary tools to be successful, but it can't guarantee it (Teodorescu, 2004). For example, using a test based on essential knowledge and skills to measure competency. Often, staff that pass these tests are less and not very successful on the assigned job (Hale, 2000). This

difference can be due to the principle that test grades might mirror acquisition of competencies, but it will not show the job performance requirements in real world (Hale, 2000).

Accordingly, the competence developments' elements must be wisely defined, with respect to the goal of the organizations. Competence development can lead to career advancement in different aspects. It is a continual practice of balancing advance in work and learning. The quality of this procedure remarkably specified the character and modality of employees living as well as who they will become, the sensation of goal they obtain and the salary they have access to. Other than that, career advancement also determines the influence the employees have in the society they live in and the economic contribution they have on the communities that they are members.

In knowledge economy index, according to World Bank (2008), "education and training" is one of the four important parameters. From different perspective, career advancement can be defined differently. It can be classified as subjective and objective career achievement. Objective achievements are the tangible result related to the work that is the effect of each person's work experience such as salary and promotions (Judge 1995; Seibert 1999). Subjective advancement can be defined as positive psychological outcome focus on natural sight such as career satisfaction (Dierendonck 2013). In conclusion, objective and subjective career are the most important for career advancement.

Research Question: How the competence factors contribute to academic career advancement?

### **Literature Review**

In this study, measuring competency is necessary. For measuring competency development, a competency model has been introduced which has four important factors that are the independent variables. They are (1) Knowledge; (2) Skills; (3) Behavior; (4) Attitude.

#### ***Knowledge***

In Oxford dictionary, knowledge is defined as facts, information, and skills acquired through experience or education (Oxford Dictionary, 2013). For a long time, knowledge has become one of the most important aspects of the world economy and society. World wealth today is concentrated less in factories, land and machineries (World Bank 2000). The world is fast progressing from a production-based economy towards a knowledge-based economy (Drucker, 1993); (Powell and Snellman, 2004). Knowledge, skill and resourcefulness of the people are most important to increasingly critical to the world and national economies.

Consequently, organizations have become more and more Knowledge-Intensive (Alvesson, 1995). Knowledge has become a center stage of economic development (Wawire and Nafukho, 2006). The dependency on the innovative knowledge to create value in the organizations is increasing (Kim and Mauborgne, 1997). Some researchers studied the "object" of learning knowledge and proposed that all knowledge is tacit and impossible to express explicitly (Drejer, 2000).

The most important of university is the creation, production and dissemination of knowledge, and to this end its workers carry out teaching, research, and administration (Harley, Camen and Collin. 2004). The nature of academies contains all three activities, which are teaching, research and administration (Blaxter, Hughes and Tight, 1998). The commodification of academic knowledge production which is increasingly judged in terms of its exchange value, represented in research funding and position in university league tables, rather than in terms of its intrinsic value as an original contribution to knowledge (Harley, *et al.* 2004). In order to

make teaching interesting, academics should continuously update their teaching content using the latest knowledge (Ismail and Rasdi, 2007).

Continuous pursuit of knowledge or lifelong learning is important for employees in any organization, especially knowledge-based organizations such as Universities. Therefore, the employees will transform into a capability for clients who in this study are the students and organizations that need universities for their researches, and it will benefit the organization and contribute to career advancement (Adler, Kwon and Heckscher, 2008).

The most important aspect of this competency factor is the understanding of changes in knowledge. This is necessary to being aware of rapid changeability and temporary nature of knowledge (Adombent and Hoffmann, 2013). It means the body of knowledge needs to be ready for rapid and dramatic changes in conditions and structures.

Managing complex systems is more depending on knowledge rather than technology. For example, capability of a company to deliver customer customised orders with a specific quality at the promised day less relies on technology and more dependent on knowledge (Drejer, 2000). There is a different aspect of knowledge that argued in previous literatures. These are not separate independent variables but they are properties of knowledge in the universities.

**Knowledge management:** academic culture mainly consists of intellectual capital, incentive of the employees' knowledge system-embedded knowledge, and up-to-date business principles of knowledge management. Knowledge and capability for learning and growing are not essentially results of knowledge regulation. The value of intellectual capital has been identified and approved by universities; the value of this is not the institution, but it is the individual faculty property (Baruch and Hall, 2004).

**Academic labor markets:** both internal and external of the labor market are knowledge based with worldwide rival governing in specific countries. Recent global nature of academic market was focused by Taylor (1999). A range of attributes such as plans, aims, and career aspiration which are accepted internationally are utilized by people. These factors are built for reputation. Individual or professional as well as manifest, for instance in scholarly resume. On the other hand, it is difficult for individual to enter into this field. Although in the past years, ample number of Ph.D. holders gave their effort to commence their career in the academic field; there were declines in their career application. Whilst baby boom generation boom generation reaches to retirement stage, noticeable number of fields will witness a shortage of Ph.D. graduates (Baruch and Hall, 2004).

Baruch and Hall (2004) research shows that the academies facing shortage of academic staff with PhD, therefore gaining more knowledge in terms of academic certificate such as PhD and Post Doc will affect academic career advancement.

### **Skill**

Skill is defined as the ability to do something well or expertise (Oxford Dictionary, 2013). It is necessary to obtain desired skill in any work. Skills designate "an ability to perform complex motor and/or cognitive acts with ease, precision, and adaptability to changing conditions" (OECD, 2009). Skills have multiple construct; they comprise of the cognitive -knowledge and what is learnt; the affective –emotional expression and what is experienced or?? felt; the behavior –action at strategic, tactical and personal levels; and the context – sectorial, occupational, job and task level, including the breadth, the demands and the inherent

responsibilities (Chell, 2013).

Skills can be developed and learned with proper guidance. Experienced co-worker uses guided learning to assist a less experienced worker in learning new skills and improving work performance (Ismail and Arokiasamy, 2007). Network and having relationship with other professionals help an individual to create and improve his/her skills. Primary network may be directed to larger circles of network (Ismail and Rasdi, 2007). Larger circles of network would give more opportunities for collaboration that would further recognize respondents' specialization and skills (Ismail and Rasdi, 2007).

Having the necessary skills of an academic staff is important, and universities and higher education systems are trying to make sure the academics have the appropriate skills. An important role of organization, in the elaboration and implementation of investment on human capital is to identify the skills needed both in the present and in future. For instance, in Germany, habilitation method is used. The habilitation is normally an individual monograph, and is a cornerstone of the German academic system. Together with the doctorate, this lengthy qualification process exerts a form of direct social control that aims to achieve a standardization of skills and induction into shared academic values (Harley, *et al.* 2004) (Gellner, 1992).

Some of the major drivers in career advancement are basic literacy and numeracy skills, management skills, and leadership skills (Heimler, Rosenberg and Morote, 2012). In other words, there is basic employability skills which can be transferred to professional talents that represent necessary functional and enabling knowledge, skills and abilities needed to succeed at all levels of employment (Heimler, *et al.* 2012) (Overtoom, 2000). Heimler studied 8 dimensions of necessary skills (Heimler, *et al.* 2012): They are: (1)Basic literacy and numeracy skills; (2)Critical thinking skills; (3)Management skills; (4)Leadership skills; (5)Interpersonal skills; (6)Information technology skills; (7)Systems thinking skills; and (8)Work ethic disposition.

The environmental barriers have been divided into proximal and distal influences. (Lent, Brown and Hackett 2000). The proximal influence is an external?? (Missing word) while distal influence is the barriers, which needs time to occur. Skill is a distal influence, for example, opportunity for skill development, which needs time to occur (Lent, *et al.* 2000). Environmental variables are assumed to influence cognitive-person variables and other factors of career behavior (Arokiasamy, *et al.* 2011).

Drejer (2000) considers skill and knowledge as part of technology, which he believes technology is the most visible part of competence. Learning and advancing in skills are not consistent for everybody. The novice employees may need to focus more on basic necessary skills, whereas the more skillful employees are focused to innovate using the skills they already know (Drejer, 2000).

Skills can be benefited from the internationalization of academic functions that bring new skills and practices. Also, it enhances research networks and advancing communication skills (Ismail and Rasdi, 2007). Ismail (2007) also mentioned that skills need to be recognized and known, and suggested that networking can boot this process.

### ***Behavior***

One of the factors that Human Recourse Development (HRD) is focusing on is attitude and behavior (Arokiasamy, *et al.* 2011). One example is new employees always learn the behavior, attitude and norms in their new organization (Baruch and Hall, 2004). Also, behavioral repertory in task cycle with relevant elements of behavior for execution of task per phase is

important for organizations (Roggema and Heusden, 2004).

Kaplan (2008) suggests that individuals need to take a fresh look at their behavior in three main areas: (1) knowing yourself; (2) excelling at critical tasks; (3) demonstrating character and leadership.

Moreover, reaching your potential requires introspection and certain proactive behaviors (Kaplan, 2008). Also, for transition in the career, some of the behaviors need to be left behind and some need to be evolved (Benjamin and O'reilly, 2011). One of the most difficult challenges in facing new circumstances and struggling with something new that are not encountered before by employees is changing their behavior (Benjamin and O'reilly, 2011).

Teodorescu and Binder (2004) mentioned good behavior as worthy behavior, which is the behavior producing accomplishments, that generates more value than they cost the company to produce. Also, inappropriate behavior can cause problems for the person and behavior is something that each person needs to take the responsibility of it (Fosstenlokken, 2007). Moreover, based on the social learning theory, behavior is a subsequence of the observation (Ismail and Arokiasamy, 2007). It says that people can regulate their own behavior to some extent by visualizing self-generated consequences. Dierendonck and Gaast (2013) stated that most people have a dominant goal orientation to guide their behavior. Based on the recent insight from the field of positive organizational behavior, interventions are being developed and aimed at enhancing a more pro-active approach at work (Vazire and Carlson, 2011). Therefore, a good behavior much related to career advancement.

Academic staff is also expected to generate human behavior along with knowledge (Arokiasamy, *et al.* 2011). Behavior is something personal and most of the people think they know themselves better than others know them. Research shows that for some perspectives of behaviors, others may be able to have a better understanding of an individual's behaviors (Johnson, Bamett, Elman, Forrest and Kaslow 2013). Also, performing some behavior can affect the beliefs about individuals' self-efficacy (Abele and Spurk, 2009). All these are much significant for good career advancement for the academics.

### ***Attitude***

Having an entrepreneurial attitude is one of the ways to achieve career advancement (Kaplan, 2008; Heimler, *et al.* 2012). The attitude is also important for two groups of people (Heimler, *et al.* 2012). They are the faculty members who taught the graduates and the human resource managers who recruit the graduates. Wang (2013) explained that "Career attitude refers to a person's confidence in his or her career and career planning", moreover he mentioned that attitude is not only an influential factor of career advancement but it also needs to be considered as ability. Researchers also examined the attitudes of each respondent on career advancement potential (Loscertales, 2007). Attitude plays an important role in career success because career reveals over time and it is usually driven by individual's attitude and behaviors (Boudreau, Boswell, Judge and Bretz, 2001).

Several studies have shown the importance of attitude to good career advancement. Benjamin and O'reilly (2011) mentioned attitude as one of the factors flourishing graduates from the beginning. Benjamin and O'Reilly (2011) stated that changing attitude and self-awareness is necessary in cases of advancing and competency of management career. Organizational sponsorship variables strongly influence work attitudes (Ng, Eby, Sorrensen and Feldman 2005). Differences in work experiences may be a function of dissimilar work and career histories between men and women as well as sex role attitudes and gender stereotypes (Ng, *et*

*al.* 2005).

Ling and Lee (2012) explained that showing good attitude is an important part of hiring. They mentioned that enthusiasm to the work is reflected in the attitude of applicants. They also showed that advancing in career is deeply related to attitude. This is because positive attitude leads an individual to be responsible and self-motivated, moreover people with positive attitude can learn things faster than others and therefore, they become knowledgeable and knowledge asset for the organization (Ling and Lee, 2012). Some attitudes such as give-and-take attitude and reciprocity attitude are important for having career success through the networking of an individual (Ismail and Rasdi, 2007).

### ***Academic Career Advancement***

Career has very general meaning which previous theories and researchers have defined it in different concepts. A career is the pattern of work-related experience that spans the course of a person's life (Dwyer, 2004). Loscertales (2007) provided the context in which we viewed career advancement by defining it as the ability for individuals to achieve improved access to resources and higher status within an organization. Career advancement is believed to be one of the dominant factors for the growth of the academic profession and universities (Altbach and Knight, 2007; Altbach, 2009; Arokiasamy, Ismail, Ahmad and Othman, 2011).

There are numerous studies showing the importance of career advancement for academics. Kuijpers (2006) considered career competencies as a person's self-management of working and learning experiences to achieve specific career advancement goals. Ismail and Rasdi (2007) argue that career advancement and development of the 'new' academic career are individually determined. Arokiasamy, *et al.* (2011) said that academics particularly from private universities face uncertain career advancement.

Studies show that career advancement was first, subject to performance (e.g. publications) rather than tenure, and second, self-initiative (Baruch and Hall, 2004). Researchers categorized career advancement in different categories. Weber (2008) categorized career advancement in three aspects, namely career satisfaction, career strategies, and career barriers. Insights into the three aspects of career advancement are important for two reasons in particular. First, knowledge of the perceived importance of selected career strategies by senior academics is likely to assist junior academics and more senior academics who are facing career advancement barriers to either confirm or revise their career strategies, thus aiding faster progression. Second, administrators are likely to gain a better insight into sources of staff dissatisfaction and consequent low staff morale, and together with knowledge of perceived key career advancement strategies may be able to better facilitate career progression of their staff.

### **Theoretical Development**

Social cognitive theory is the base of the theory which is used in this study. This theory was established by Bandura (1986) and focuses on certain stages in the modeling process:

*Attention:* Attention is the stage that a person needs to learn new things. Things that are different and striking are more likely to get more attention, for example due to the color. If the person find something more prestigious, attractive or etc. it will be more noticeable.

*Retention:* Retention is the process of recovering and remembering or retaining the thing that a person paid attention to. Two important factors in retention are imagery and language. A human mind stores what it sees in the two models of verbal description or mental images and later on, the human mind brings these mental images and verbal descriptions to reproduce the

model with its own behavior.

**Reproduction:** In this stage, human mind will translate the images or descriptions into actual behavior. The person must be able to repeat or reproduce the behavior in the first place. For example, if a person watches the car racing, the person may not be able to reproduce their high speed turn if the person doesn't know how to drive a car. The abilities improve even when the mind is just imagining itself performing it.

**Motivation:** If the person is motivated, he or she will try to imitate the model. Bandura states a number of motivations: (1) Past reinforcement; (2) Promised reinforcement; (3) Vicarious reinforcement. Albert Bandura had a huge impact on personality theories because his theories are action-oriented and he uses problem-solving approach.

**Social cognitive career theory (SCCT):** SCCT (Lent, *et al.* 1994) is derived from Bandura's (1986) which is also known as general social cognitive theory to further understand individuals' career interest, goals and performance. This theory features individual factors (e.g. family, personal characteristics, interests, self-efficacy and goals) together with the environment (e.g. organizational factors) and its influence on outcome expectation and hence, the process of career development (Lent, *et al.* 1994; Bandura, 1986; Arokiasamy, Ismail, Ahmad and Othman, 2011).

Lent *et al.* (1994) had organized SCCT into two components. The first component is about learning experiences that will shape self-efficacy and outcome expectations. This component describes how a person's physical background interacts with the background contextual environment to form a variety of learning experiences. The second component is about external factors to the person, which is called (known as) environmental support, and environmental influences such as social and organizational factors that can provide positive support or negative barriers (Flores and O'Brien, 2008). Later, Lent *et al.* (2000) divided environmental variables into proximal and distal influences. They defined proximal influences as external barriers to career goals that occur instantly, whereas distal influences need time to occur (e.g. opportunity for skill development that helps to shape interests and self-cognition). These important environmental variables are assumed to influence cognitive-person variables and other aspects of career behavior (Arokiasamy, Ismail, Ahmad and Othman, 2011).

From the theoretical perspective, this study aims to extend the existing knowledge of career advancement with specific reference to the SCCT (Lent, *et al.* 2000) that was used as the underlying theory for this research. The theory basically consists of person inputs, contextual influences, outcome expectation or performance. In this study, person inputs are represented by individual variables; while contextual influences are represented by organizational factors and outcome expectation by career advancement (Arokiasamy, Ismail, Ahmad and Othman, 2011).

Career advancement is conceptualized to include an objective and more comprehensive measure of subjective career advancement as suggested by Heslin (2003) and Arokiasamy, Ismail, Ahmad and Othman (2011). Subjective career advancement measures both the organizational perspectives and non-organizational or individual perspectives. In addition, most career studies using SCCT involved adolescents or students as the study subjects and were largely done in a Western context (Constantine, *et al.* 2006; Gushue, Clark, Pantzer and Scanlan, 2006).

A career study conducted in Malaysia (Rasdi, Ismail, Uli and Noah, 2009) involved managers

in the public sector. Therefore, the present study addresses the previous argument in an effort to increase our understanding of academics' career advancement in private universities in an Asian country. It further extends research on SCCT; however, it is limited only to individual and organizational variables that influence the career advancement of academics (Arokiasamy, *et al.* 2011).

### **Practical Implications**

Benjamin and O'reilly (2011) mentioned that advancing in a career and flourishing in work is dependent on knowledge, skills, abilities and attitude. They also mentioned that to achieve career advancement and gain visibility in the workplace, not only hardworking and work better needed but also behavior and assumptions that guided the behavior need to be changed (Benjamin and O'reilly, 2011).

A study by Drejer (2000) showed that it is crucial for employers to work with colleges to recruit the best prepared job candidates and to also be aware of the likely need to help incumbent workers to upgrade their skills for career advancement. Heimler, Rosenberg and Morote (2012) showed that different skills such as system thinking skills, leadership skills, information technology skills and other skills contribute to career advancement, therefore we can conclude that skills has a relationship with career advancement.

Enhanced sense of competence through skill development in this regard, public or private universities are also expected to generate new knowledge and innovation not only in technology, but also in human behaviors an actions; one of the latter is in relation to career development. (Arokiasamy, *et al.* 2011). Pinnington (2011) said that one of the ways to improve information about career advancement is to know more about attitudes of employees. There are several implications from the Human Resource Development perspective. Kuijpers and Scheerens (2006) developed and tested competencies of career self- management that include six categories of competencies which focused primarily on career development, career reflection and work exploration, being a lack of employability and attitude abilities. De Vos and Soens (2008) indicated that the career attitudes of a person have (play) a key role in determining their career success. All of these studies have shown that employability and attitude abilities are potentially critical components of career competencies.

Numerous scholars and educational institutions have recently indicated that employability training should be addressed from a career development perspective to develop positive attitudes in people towards work. Numerous scholars have asserted that in addition to influencing career success, a positive work attitude should also be considered an ability (Akrivos *et al.* 2007; De Vos and Soens, 2008; Ng and Pine, 2003). Examples of positive work attitude include taking the initiative, willingness to accept challenges, enthusiasm and energy, working hard, resilience, integrity, and maintaining a professional appearance. Wang (2013) studies show that work attitude, communication and networking are not only influential factors of career success, but should also be considered abilities.

### **Conclusion**

This study is the first study that choosen competence development factors such as knowledge, skill, attitude and behavior. Those variables from competence development model and find the association of these factors with academic career advancement in Malaysian private universities. These factors can be found separately in different literatures. Knowledge can be found in studies of Adler, Kwon, and Heckscher (2008) and Baruch and Hall (2004), skill can

be found in studies of Heimler, Rosenberg and Morote (2012), attitude can be found in studies of Arokiasamy, Ismail, Ahmad, and Othman (2011) and Benjamin and O'reilly (2011), and behavior can be found in Kaplan (2008) and Heimler, Rosenberg, and Morote (2012). Overall, this study produces an association between competence development and academic career advancement in Malaysian private universities. The literatures of the study show that knowledge, skill, attitude, and behavior have significant relationship with academic career advancement in Malaysian private universities. Therefore, academic staff should come up with plans to improve their competence developments especially in various aspects of knowledge, skill, attitude and behavior to gain academic career advancement and better long-term career advancement in a competitive environment in universities.

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## Occupational Stress among Women Managers

**Lai Ka Fei**

*Faculty of Business and Finance, Universiti Tunku Abdul Rahman, Malaysia*

Email: [laikf@utar.edu.my](mailto:laikf@utar.edu.my)

**Ng Yin Kuan**

*Faculty of Business and Finance, Universiti Tunku Abdul Rahman, Malaysia*

**Fong Chee Yang**

*Faculty of Business and Finance, Universiti Tunku Abdul Rahman, Malaysia*

**Lim Yoong Hing**

*Faculty of Business and Finance, Universiti Tunku Abdul Rahman, Malaysia*

**Wong Kok Yaw**

*Faculty of Business, Management and Social Sciences,  
Quest International University, Malaysia*

**\* Corresponding Author**

### **Abstract**

**Purpose:** One of the Malaysian national development agenda in Tenth Malaysian plan is to empower women. More attentions need to be paid by practitioners on women employment related issues such as occupational stress. It is vital to understand the unique stressors faced by women to increase their well-being in workplace. The purpose of this paper is to investigate and identify the causes of occupational stress among women middle managers. This study examines the relationship between (i) work-family conflict, (ii) barriers to career achievement, and (iii) workplace social support towards occupational stress among women middle managers in Malaysia.

**Design/methodology/approach:** The primary data for this study was collected using self-administered questionnaires from 285 female middle managers in Malaysia urban areas.

**Findings:** The major findings of this study are that work-family conflict and barriers to career achievement were positively related to occupational stress among women middle managers, while workplace social support was found to be insignificant in this study.

**Practical implication:** This paper offers practical recommendations to organizations on how to deal with women middle managers' occupational stress.

**Originality/value:** This is one of the original studies about occupational stress among women middle managers in Malaysia.

**Keywords**—stress; women managers; Malaysia

**Paper type:** Research Paper

## **Introduction**

One of the Malaysian national development agenda in Tenth Malaysian plan is to empower women. More attentions need to be paid by practitioners on women employment related issues such as occupational stress. It is vital to understand the unique stressors faced by women to increase their well-being in workplace, which encourage their continuous contribution to the Malaysian economy development. Occupational stress among women middle managers has a significant impact on their work performance and satisfaction thereby affects their productivity and effectiveness in organizational performance.

Occupational stress is a significant workplace issue that received considerable concern in developing countries (Taap Manshor *et al.*, 2003). Lack of studies on occupational stress in Asian developing countries has motivated researchers to focus more on this issue (Kortum, Leka and Cox, 2010). For example, previous studies have been conducted to examine the meaning, causes and consequences of occupational stress in Malaysia. However, these studies fail to provide insights on women's occupational stress in Malaysia.

Women managers in Malaysia are found to be more stressful than men in workplace (Taap Manshor *et al.*, 2003). Excessive stress may lead to serious consequences; for instance poor work performance and health status (Joseph, 2016), and greater turnover rate. Women turnover rate can exceed 2.5 times than of men as the result of distress (Jiang and Klein, 2002). It is crucial to identify the sources of occupational stress experienced by women managers to minimize stress and maximize job satisfaction (Cooper and Melhuish, 1984) by formulating strategies to cope with it (Kortum Leka, and Cox, 2010). This has raised the interest among current researchers to thoroughly identify the causes of occupational stress among Malaysian women managers, so that appropriate actions can be taken by organizations to build more positive outcomes among women managers and consequently improve their well-being in the future.

The objectives of this paper are to investigate the levels of stress and to identify the causes of stress among women middle managers in Malaysia. This study will examine the relationship between (i) work-family conflict, (ii) barriers to career achievement, and (iii) workplace social support towards occupational stress among women middle managers.

## **Literature Review**

### ***Occupational Stress among Managerial Women***

Women are identified as an important resource to achieve national development agenda (Omar and Davidson, 2001). In Malaysia, the number of women holding management positions had increased from 29 percent in year 2014 to 34 per cent in year 2015 (Ismail, 2015). From the statistic, many of them are holding middle managerial positions. Women have been actively participated in management due to their education background and promotion of equal opportunity in the organization by government. However, the number of women advancing to middle position is still lacking. Piteman (2008) mentioned that they are generally facing higher stress in the leadership path as compared to male counterparts. Previous researches on stress found working women to be more stressful than men (Adekola, 2010).

Literatures have shown that different gender perceives occupational stress differently. Psychological studies have indicated women experience more distress than men. In addition, women may experience extra pressure than men in workplace (Cohen and Janicki, 2010).

Furthermore, women are seen not fit to fill up managerial position because of gender stereotype (Othman and Othman, 2015).

Occupational stress will lead to serious consequences for organization. It brings the effects on job performance and satisfaction. Employees who perceive higher stress have stronger intention to quit from the organization. Occupational stress has been linked to lower productivity, absenteeism and higher rate of accidents. Besides, it is a critical factor in reducing employee's motivation level (Bateman and Snell, 2013). It is also a source of tension which impacts on behavior including individual, group and organization (Prochaska, 2013). The common stressors faced by women middle managers to be studied in this paper are work-family conflict, barriers to career achievement and workplace social support.

### ***Work-Family Conflict***

Work-family conflict has become an issue in the field of organization behavior, sociology and human resource management (Xu, 2009). It is one of the core stressors that can erode employee's well-being (Baral, 2016). Women who cannot balance their time between work and family life are found to be hard to maintain a balanced lifestyle while achieving their careers simultaneously (Scott *et al.*, 2009). Research also evidenced that the level of work-family conflict for women managers was higher than women non-managers and all level of male employees because women managers viewed family as their primary obligation (Simon, 1995). In addition, those married women managers with children experienced more work-family conflict than men (Lawson *et al.*, 2013). Therefore, they will experience more stress on their family responsibility and this may lead to less focus on their job (Carlson and Kacmar, 2000).

Work-family conflict is "a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect" (Greenhaus and Beutell, 1985, p.77]. In other words, high level of job demand will result in severe work-family conflict. Employees who are facing job overload, usually find it hard to enjoy the time at home as they are worrying about the problems encountered at workplace (Bacharach *et al.*, 1991).

Work-family conflict may lead to various outcomes in the workplace such as job dissatisfaction (Netemeyer *et al.*, 2004), turnover intention (Blomme *et al.*, 2010), absenteeism (Amstad *et al.*, 2011) and occupation stress (Grzywacz and Smith, 2016). Other work-family conflict outcomes are related to physical and mental health (Sackey and Sanda, 2009) such as the degree of clinical depression, anxiety, work distress (Nelson and Burke, 2000), and burnout (Kossek and Ozeki, 1999). For instance, female managers face difficulties in completing non-office duties when they are under anxiety (Edwards and Rothbard, 2000).

Previous studies indicated that both work-family conflict and occupational stress were positively related (Armstrong *et al.*, 2015). Work-family conflicts are perceived to be more stressful among managerial women, lead to anxiety, depression, irritation and hostility (Beatty, 1996). According to Ahmad and Omar (2010), work-family conflict has a strong relationship with occupational stress in Malaysia. Therefore, it is suggested that higher level of work-family conflict will lead to higher degree of occupational stress experienced by managerial women (Apperson *et al.*, 2002).

H1: Work-family conflict is positively related to occupational stress.

***Barriers to Career Achievement***

In recent years, women have gain significant presence in labor market. Certain sectors are easier for women to participate as compared to other male dominated sectors. Undeniably women's progress in career is hindered by barriers rooted in societal level or organizational related setting. Consequently, their presence in top management level remains low. Barriers are defined as "events or conditions either within the person or in his/her environment that make career progress difficult" (Swanson and Woitke, 1997, p. 434).

Previous studies always insisted a negative view on women occupational success. Female managers are found to be less initiative, risk adverse (Garland, 1991) and lower commitment due to family responsibilities. Not surprisingly, women are continued to be discriminated. For instance, glass ceiling always in place to hinder women from progressing in their career. Early research also found women to be more suitable to hold clerical positions (Betz and Fitzgerald, 1987). Such discriminative conditions remain whereby women receive lower promotion opportunities and career development. These barriers seem to become tighter as they move up their career ladder. These barriers prevent women from reaching the top although they are competent (Hoobler *et al.*, 2014) which created stress in the workplace (Gaumer *et al.*, 2006). Such scenario happened in Malaysia as well. Women are unrepresented in managerial positions (Abidin, *et al.*, 2009).

There is a positive relationship between barriers to career achievement and occupational stress (Aizzat *et al.*, 2004). Lacking of career progression will increase sense of insecurity and causing stress (Carr *et al.*, 2015). Furthermore, barrier to achievement which causes occupational stress among women resulted in poor work performance, burnout and lower satisfaction level (Taap Manshor *et al.*, 2003). Nevertheless, this result may be inconclusive due to different level of discrimination in different organizational setting and sex role stereotype between eastern and western country. This study will examine the relationship between barriers to achievement among women in management towards occupational stress in Malaysia.

H2: Barriers to career achievement is positively related to occupational stress.

***Workplace Social Support***

Workplace social support comprises of the perceived availability of support and help actually received by an employee at the workplace (Schwarzer and Gutierrez-Dona, 2005). In general, various sources can provide social support, including networks that are formal and informal. Formal networks refer to professional human resource service delivery system initiated for employee well beings, for example counseling service (Steeter and Franklin, 1992). Informal networks are obtained from social interaction with friends, supervisors, co-workers; from spouse and family members (Kristan, 1997). Workplace social support is considered as resources provided by informal network which included assistance and guidance on task from supervisors and co-workers (Lee, 2002).

Supervisor relationship exists between a superior and subordinate whereby an employee is being supervised by the person who hold a higher position (Erturk, 2007). It was discovered that the most effective way in mitigating occupational stress is supervisors support. They are responsible to help subordinates to face difficulties and complete the tasks (Zhang and Zhu, 2007).

Co-worker refers to colleague who holds same level of position and works together among each other to complete the tasks given by superior (Beehr *et al.*, 2010). Support from co-workers can be their cooperation and abilities to complete the tasks especially when working in a team, and seems to be more useful for men than women in workplace (Brandes *et al.*, 2004). Co-worker support can help to improve employees' relationship and employees are more willing to help colleagues to complete the tasks (Rupp and Skarlicki, 2010). Women employees generally reported to receive more support from relatives and friends but not colleagues (Daalen *et al.*, 2005).

Worker from higher occupational level will face higher occupational stress; they usually perceive less social support (Frans *et al.*, 1988). Hence, the relationship between workplace social support and occupational stress is negative (Ganster *et al.*, 1986). Low level of social support may lead to poor health and affect work performance. Male and female employees experience occupational stress generated from social support differently (AbuAlRub, 2006). Managerial women were experiencing lower interpersonal social support in the workplace compared to male (Geller and Hobfoll, 1994). For instance, women generally do not have equal access to informal social interaction and communication which enjoyed by their male peers (Nelson *et al.*, 1990).

The findings from western research may be different with cross cultural research especially those conducted in eastern countries (House *et al.*, 2004). A cross cultural study conducted in Malaysia revealed that Malaysian managerial women are less in socializing due to cultural influences (Glenice and Uma, 2006). Managerial women usually perceived that they received less social support from their co-workers and supervisors (Kaila, 2007). Therefore, this research is important to confirm the association between workplace social support and occupational stress experienced by Malaysian managerial women.

H3: Workplace social support is positively related to occupational stress

### **Methodology**

A modified snowball sampling strategy was employed in this study to identify women middle managers in various sectors and organizations as the name list of women managers was not available due to the difficulty of locating the member of population (Babbie, 2013). Questionnaires were then distributed to the identified respondents in urban areas: Kuala Lumpur, Selangor, Perak, Penang, Malacca and Johor. These areas were selected due to higher population (Economic Planning Unit and UN Country Team, 2005). Besides, urban concentration contributed to economic growth (Henderson, 2003), consisted of key organizations in the country, resulted in higher women participation in jobs. A total of 285 samples were collected for this study. The data was then analyzed using SPSS software. The relationships between independent variables and dependent variable were analyzed with multiple regression analysis.

### **Research Framework**

The following framework showed the relationship between the independent variables (work-family conflict, barrier to career achievement and workplace social support) and dependent variable (Occupational stress).

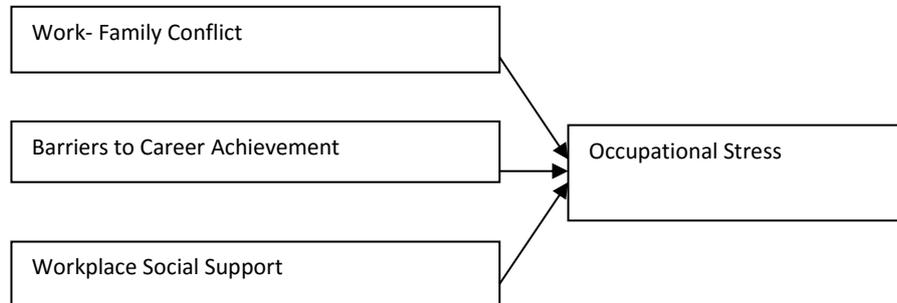


Figure 1: Hypothesized model of study

## Finding and Discussion

### *Descriptive Analysis*

Table 1: Frequency Table

Variable	Frequency	%
<b>Age</b>		
Below 25	4	1.4
26-35 years old	214	75.1
36-45 years old	49	17.2
Above 45 years old	18	6.3
Total	285	100.0
<b>Race</b>		
Malay	42	14.7
Chinese	220	77.2
Indian	23	8.1
Total	285	100.0
<b>Marital status</b>		
Married	128	44.9
Single	157	55.1
Total	285	100.0
<b>Number of years worked</b>		
Less than 5 years	133	46.7
5-10 years	66	23.2
11-15 years	39	13.7
16-20 years	31	10.8
Above 20 years	16	5.6
Total	285	100.0
<b>Gender Mix in workplace</b>		
More men than women	154	54.0
Equal men and women	46	16.2
More women than men	85	29.8

Total	285	100.0
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There were 285 usable data collected from women middle managers in this study. Majority of the respondents were aged between 26 to 35 years old; occupied 75.1% of the total respondents. However, the age group above 45 years old was the lowest among the groups, which was 6.3%. The respondents consisted of four races: Malay, Chinese, Indian, others. Most of the respondents were Chinese (77.2%), followed by Malay (14.7%) and Indian (8.1%). In term of marital status, most of the respondents were single (55.1%). Most of the respondents worked less than 5 years (46.7%) compared to 5.6% that worked more than 20 year. In term of gender mix in workplace, most of the respondents were from the workplace with more men than women (54.0%).

### ***Reliability Test for Each Independent Variable***

Table 2: Reliability Test

Construct	Cronbach's Alpha (Actual Study)	Number of Items
Work-family Conflict	0.854	7
Barriers to Career Achievement	0.896	7
Workplace Social Support	0.870	7
Occupational Stress	0.875	8

The values of Cronbach's Alpha in the reliability test for work-family conflict (0.854), barriers to career achievement (0.896), workplace social support (0.870) and occupational stress (0.875) were above 0.8, which were considered to achieve a very good reliability.

### ***Multiple Regression Analysis***

Table 3: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	77.258	3	25.753	145.374	.000 <sup>a</sup>
Residual	49.778	281	.177		
Total	127.036	284			

a. Predictors: (Constant), WSS, WFC, BA

b. Dependent Variable: OS

Table 3 showed that the p-value was less than 0.05 (Significant at 0.000). This showed the model for this study was fit to confirm the relationship between the predictors and dependent variable.

Table 4: Coefficient

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.741	.421		1.762	.079
WFC	.475	.049	.468	9.602	.000
BA	.302	.077	.327	3.931	.000
WSS	-.074	.075	-.075	-.990	.323

a. Dependent Variable:  
OS

The first independent variable (work-family conflict) and second independent variable (barriers to career achievement) were significant to predict the dependent variable (occupational stress) in this study (p-value less than 0.05). However, third independent variable (workplace social support) was not significant (p-value is 0.323, more than 0.05) in predicting the dependent variable (occupational stress). Nonetheless, this study had found that the workplace social support was negatively related to occupational stress.

**Discussion**

***Hypotheses 1: Work-family Conflict***

The present study confirmed with the previous researches' results that work-family conflict is positively related to occupational stress (Judge *et al.*, 1994). When work-family conflict is high, women middle managers will experience more occupational stress. Work-family conflict is one of the sources of work stress (Demerouti *et al.*, 2001). It is the most significant independent variable among the three independent variables and it may lead to high dissatisfaction and affect their work performance (Mauno and Kinnunen, 1999).

***Hypotheses 2: Barriers to Career Achievement***

As consistent with previous study (Hoobler *et al.*, 2009), when women managers encountered high barriers to career achievement, their stress level will increase. Although studies showed that there is an increase in number of women in managerial positions, however there are still encountering informal barriers to their career achievement (Azzat *et al.*, 2004). These barriers would create significant impacts on occupational stress.

***Hypotheses 3: Workplace Social Support***

Workplace social support is not significant in explaining occupational stress. This finding is inconsistent with the previous research (Ganster *et al.*, 1986), which previously concluded that there are negative effects of stress when the managerial women perceived less workplace social support. When employees face difficulties on their job, support from their superiors and colleagues are insufficient to reduce emotional distress, in contrary to the finding of (Krogstad *et al.*, 2005). Current research finding infers that there are perhaps other types of more important supports needed by women middle managers, for example managerial family support (Hafeez and Akbar, 2015) to mitigate stress caused by work-family issues rather than work

issues alone.

### **Implication**

It is essential to reduce the occupational stress experienced by women middle managers in every organization. Work-family conflict and barriers to career achievement are significant stressors which lead to negative consequences. Therefore, practitioners need to focus on mitigating work-family conflict and barriers to career achievement.

Organizations can offer time management training program and flexible work schedule to employees in middle managerial positions to balance between work and family time for stress reduction, thereby creating more enjoyment in everyday life (Amiri *et al.*, 2014). These methods allow employees to accommodate and balance their work and personal lives demands (George and Jones, 2012).

It is essential for organizations to ensure that women middle managers are given equal opportunities as men so that their career achievement will not be hindered. Furthermore, setting more transparent policies and practices will encourage fairness in career advancement decisions. It is suggested that female employees should be given opportunity to be involved in career development appraisal. This is to ensure that managerial women will be treated equally as their male counterparts in terms of career advancement.

### **Conclusion**

Human resource is an important asset for organization. Occupational stress among women middle managers will not only affect individual health but eventually will lead to lower organizational performance. Organizations should implement effective measures to make sure female middle managers are free from work-family conflict and the barrier to career achievement. Conversely, workplace social support was found to be insignificant in explaining the relationship towards occupational stress in this study. This may be attributed to workplace social support (supervisor and coworker support) is insufficient to reduce occupational stress among women middle managers.

### **Acknowledgement**

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# An Overview on Relationship between Corporate Entrepreneurship and Firm Performance

**Majid Hussain Serai\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*Email: majid.serai@gmail.com*

**Satirenjit Kaur Johl**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*Email: satir@petronas.com.my*

**Maran Marimuthu**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*Email: Maran.marimuthu@petronas.com.my*

*\*Corresponding author*

## **Abstract**

**Introduction:** Recently, the corporate entrepreneurship (CE) dimensions have been given a considerable attention among researchers in academia and industry to investigate the relationship between corporate entrepreneurship and firm performance. Thus, several studies have been conducted in different contexts and economies that have demonstrated the impact of CE dimensions on firm performance.

**Objective:** Some studies have concluded that some dimensions have positive, others moderate or negative relationship on firm performance. However, existing studies suggested that there is no consensus on findings and CE dimensions in different contexts. It has been recommended to explore the dimensions extensively to further investigate the impact on firm performance.

**Methods:** The growing popularity of CE dimensions on firm performance creates a need to review and assess the literature. Therefore, the motivation is to present an overview of corporate entrepreneurship dimensions that govern the impact on firm performance.

**Conclusion:** This survey paper provides a comprehensive understanding of corporate entrepreneurship dimensions and firm performance. It will also be helpful in identifying some limitations of the existing studies that have been conducted by considering the different contexts or cases. Consequently, it assists in advocating some suggestions and proposing future work.

**Keywords:** Entrepreneurship, Corporate entrepreneurship, Firm performance.

## **Introduction**

Recently, corporate entrepreneurship has been given considerable attention among researchers in academia as well as in the industry to enhance the entrepreneurial activities and their

relationship with firm performances. Corporate entrepreneurship is reflected in the long term planning of any organization. Review of the literature reveals several empirical studies that have been conducted in different settings with numerous entrepreneurial activities known as corporate entrepreneurial dimensions. Therefore, by looking at the importance of corporate entrepreneurship dimensions, this paper aims to conduct a literature overview of the relationship between dimensions of corporate entrepreneurship and firm performance. Corporate entrepreneurship has also been considered essential in social sciences research due to its prominent impact on both the developing and competitive environments of all types of markets including local and international markets. It assists in developing a competitive environment for recognized firms to increase their economy and also help in economic development. In addition, it has been an extremely important factor for sustaining the long term economic development of firms (Zahra et al. 2000). Over the years some important dimensions of corporate entrepreneurship have been identified, which includes innovativeness, proactiveness, risk-taking, competitive aggressiveness and autonomy and self-renewal (Zahra and Garvis 2000; Lumpkin and Dess 1996; Covin and Miles 1999; Pittaway 2001). It has been witnessed that corporate entrepreneurship has become more important since 1990's and most of the studies have been initiated in the developed countries. The literature survey of this study was conducted by reviewing numerous empirical research studies. Most of them considered corporate entrepreneurship dimensions as significant tools for economic development of firms and overall economy of the country. They have also suggested that the corporate entrepreneurship dimensions have an influence on firm performance. This shows an important part in maximizing the profitability of the firm based on financial measures, therefore, the impact is measured through firm performance (Keh et al. 2007; Pinchot 1985; Hornsby et al. 2002).

The findings of the aforementioned studies further indicate that the corporate entrepreneurial dimensions have to play a vital role in delivering the successful firm performance, which also helps the managers in decision making (Lumpkin and Dess 2001; Tajeddini 2010). However, it has been concluded that the existing studies are mostly context dependent in terms of location and are subject to the different firm sizes, firm age, and manufacturing and non-manufacturing have different outcomes. The relationship between some of the corporate entrepreneurship dimensions and the firm performance ranges from positive, moderating, to negative. The outcomes further elaborate that corporate entrepreneurship studies have been measured as context dependent studies. Thus, it has compelled for a growing interest amongst researchers around the world to investigate it intensively in different settings and economies.

### **Corporate Entrepreneurship**

Corporate entrepreneurship (CE) refers to the expansion of new business concepts and prospects inside the large and recognized business corporations (Birkinshaw 2003). In some studies, CE is described as an entire process of the development where established corporations work by following innovativeness, risk-taking and proactiveness activities (Dess et al. 1999; Dess et al. 1997; Guth and Ginsberg 1990). CE activities have many consequences in terms of the outcomes that may result in the development of new products, services and processes for a business unit. CE is selected as an approach to improve the financial performance of the firm. It also indicates ,other than financial profits, improvement in the employees confidence, collaboration with others and the establishment of a creative work environment (Hayton 2005). Furthermore, CE is considered as creation of new organizations as spin-out ventures (Hornsby

et al. 1993). It includes internal renewal of an existing company and restructuring process for maximizing the firm performance (Volberda et al. 2001)

It is common in business that the entrepreneurial activities are mostly introduced by the top level management to comprise and reshape the business idea. The entrepreneurial managers provide reforms and frameworks to firms for inclusive changes and innovation in the existing structure (J. Ferreira 2002). Developing the new sources reflects the struggle to expand an organization's competitive advantage. Innovations are usually produced within the organization that significantly regulates the stability of competition. It is noticed that all these efforts have been made to generate entirely new business (J. Ferreira 2002). In addition, the entrepreneurial orientation is an energetic force for strategic management and is a collective principle to produce a stronger push in the direction of innovation, risk-taking and aggressiveness to follow innovative opportunities (Dess and Lumpkin 2005).

Despite the existing CE dimensions, Lumpkin and Dess further suggested two new dimensions, which are autonomy and proactiveness. After the inclusion of these two dimensions in CE, the entrepreneurial orientation collectively includes the five dimensions, i.e., innovativeness, autonomy, risk-taking, competitive aggressiveness and proactiveness. In some cases, it has been noticed that individual firm's characteristics might vary along with all the CE dimensions. Moreover, some more dimension have been also introduced such as new ventures, new business and alliance, communication selfrenewal (Guth and Ginsberg 1990; Antoncic and Scarlat 2005). However due to thire unsuitable and inconsistent effects; these demensin have been opposed. These five dimensions of CE such as innovativeness, proactiveness, risk taking autonomy, competitive aggressiveness are taken all together that significantly affect the decision making, modifications and organizational practices of managers that work as a team (Dess and Lumpkin 2005). Considering the importance of CE dimensions on firm performance, this paper includes all the CE dimensions as suggested by Lumpkin and Dess in their framework to investigate the firm performance (Lumpkin and Dess 1996).

Table 1: List Dimensions of CE by Authors and Years

<b>Dimensions</b>	<b>Authors</b>	<b>Year</b>
Innovativeness	Miller	1983
Proactiveness	Miller	1983
Risk taking	Miller	1983
Competitive aggressiveness	Dess et al.	1997
Autonomy	Lumpkin and Dess	1996
Self-renewal	Guth and Ginsberg	1990
Autonomy	Lumpkin and Dess	1996
Competitiveness Aggressiveness	Dess et al.	1997
New Ventures New Businesses and Alliance	Antoncic and Scarlat	2006
Communication	Antoncic and Scarlat	2006

### ***Innovativeness***

Generally entrepreneurs are known to be creative and motivated individuals that always seek new approaches for feature development of products, services, approach to a new markets, and new technological innovations (Schumpeter 1934). In De Jong's study it is advocated that innovativeness is generally demonstrated as an individual characteristic that is reasonable for

steady and long-lasting in different circumstances at the individual level (de Jong et al. 2003). The recent literature review has made it obvious that innovativeness is one of the most vibrant and permanent dimension of CE and it has been the prime theme for entrepreneurship (Baden-Fuller 1995; Covin and Slevin 1991; Thomas and Mueller 2000; Tan 2008). It explores and highlights the creativity in all aspects like product or services development. It also provides significant answers to the requirements of the business and working problems in the firm (Darling et al. 2007)

### ***Proactiveness***

Proactiveness involves the refinement of the originality by seeking possibilities for succeeding. This requires that the several possibilities are implemented in advance and play their role in the development of market (Lumpkin and Dess 1996). It also contains the attitudes and skills that allow the execution and control of the creation of new products, services and processes, before other participants and competitors in the same business (Morris and Paul 1987). Therefore, it highlights that first mover participant gets the advantage in market (Miller 1988) and also obtains a room in the market while predating and performing on future needs and requirements (Lumpkin and Dess 1996). Proactiveness contains an attitude that shows aggression for the competitors. It is also continuously engaged in the implementation and determination of the future strategies to achieve the objectives of business aggressively (Knight 1997).

### ***Risk taking***

Numerous CE researchers have recognized “willingness to assume risk” as one of the most prominent characteristics of entrepreneurs (Begley and Boyd 1987; Brockhaus 1982; Cunningham and Lischeron 1991; Lumpkin and Dess 1996; Koh 1996). These researchers, defined individual’s risk-taking ability as an entrepreneurial orientation to take chances and risks during managerial decision making in undefined situations. Different from traditional companies, the entrepreneurial companies innovate confidently although they take extensive risks in their strategy-making, production and marketing level (Miller and Friesen 1983). Previous studies have discovered empirical support to entrepreneurial orientation, whereby it is correlated positively with innovation in the development of new product and process (Khan and Manopichetwattana 1989; Rothwell 1992; Zhou et al. 2005), but at the same time, the effects of risk-taking dimension as an road towards successful ventures is still unclear (Drucker 1985; Schumpeter 1951).

### ***Competitive aggressiveness***

Competitive aggressiveness is recorded as the competitive attitude in a business. It can be said that motivation must exist for competition and need to improve the position of firms, relatively to other firms and businesses by competitive attitude (Lumpkin and Dess 1996; Tan 2008). However, it contains an influential and dynamic attitude towards the competitors through pre-emptive actions and aggressive responses as well as solutions for problems (Lumpkin and Dess 2001).

### ***Autonomy***

Autonomy is an important dimension of CE that shows self-determining actions of an individual or team, which comes up with an idea or a vision for future development (Lumpkin

and Dess 1996). Working environment is considered important whereby it need to be highly independent, which means employees have been given individual autonomy to forecast their current and future actions and define how work should be comprehensively completed (Langfred and Moye 2004).

### **Firm Performance**

It is established in literature review that company's financial performance is a major strength and success factor in competitive business environment. It is investigated and measured through many ways that describe the success and failure of any firm. Therefore, company's financial performance and operational processes are characteristically linked. Researchers have discovered and discussed the idea of firm performance in many aspects (Aktan and Bulut 2008; Wiklund and Shepherd 2005). Inside the firm's performance, financial aspects are continuously emphasized in related activities. Adding more to this, investors, shareholders and stakeholders are regularly concerned with information about the company's financial performance conditions. Financial performance data (return on investment, sales growth, return on equity and profitability) are extremely categorical and effective information between the additional performances measures (Zhao et al. 2011).

### **Corporate Entrepreneurship and Firm Performance**

The changing practices in business for long term economic development always demand for finding relationship between CE and firm's performance. Therefore, it is not only about focusing on studying the CE and its dimension, but it is about studying the extent and the level CE relates to firm's performance. In this perspective, some studies have been conducted by researchers in the academia and industries for the past two decades. Moreover, CE is studied in established economies, in particular, after 1990's. It has been explored that entrepreneurial action in a firm, is crucial to delivering positive firm's performance (Pinchot 1985; Zahra and Covin 1995; Barringer and Bluedorn 1999; Lumpkin and Dess 2001; Simsek et al. 2009; Javalgi et al. 2012). Later on, most of the studies indicated that CE can be used as a multidimensional arrangement in firm performance. Mostly, the proposed dimensions of CE are determined and tested using parameters such as innovation, risk taking, competitive aggressiveness and proactiveness (Sharma and Chrisman 1999; Dess et al. 2003) to identify the relationship with firm performance. Although, the existing studies suggest that there is a relationship between CE and firm performance, but it is not yet proven that there is relation of CE with corporate performance in different contexts, because there are no consensus among results of past studies (Zahra 1991; Antoncic and Hisrich 2004; Dess and Lumpkin 2005).

It is observed through literature review that some of studies demonstrate the relationship between CE dimensions and firm performance, but such studies were conducted in the context of developing countries only. It does not validate the relations in the general perspective. The relationship has been investigated in case of Istanbul Stock Exchange (ISE). The results of this study suggest that CE dimensions have a positive relationship with the firm performance. It is concluded that this positive relationship increases the profitability of a firm. However, it is also found that certainly there is no significant relationship with growth (Danışman and Erkocaoğlu 2007). Another study (where) has been conducted in which CE dimensions such as innovation, risk taking, proactiveness and competitive aggressiveness have been investigated. The finding of this study shows that there is relatively weak influence on firm performance (Aktan and Bulut 2008). Moreover, it is concluded that there is a moderate and

positive relationship among CE and firm performance. In this study, human resources was engaged as an intermediary among these two measures (Kaya 2006). In order to investigate the firm performance, a study has been conducted in which (write down study) 347 firms have been involved. This study, confirms the strong relationship between CE and firm performance (Fis and Cetindamar 2009). The profitability and growth remain as elements of performance that are considered important to CE.

Table: 2 shows some literature of recent years:

Year	Author	Context	Results
2000	Zahra and Garvis	U.S	Innovativeness Proactiveness Risk taking
2006	Harry Entebang	Malaysian GLCs	Innovativeness Proactiveness Risk taking Competitive aggressiveness
2008	Bulut and Yilmaz	Turkey	Innovativeness Proactiveness Competitive aggressiveness Risk taking
2009	Kusumawardhani et al.		Innovativeness Proactiveness Risk taking Competitive aggressiveness Autonomy Networking
2009	Awang et al.	Malaysian	Innovativeness Autonomy Proactiveness Risk taking Perceived environmental (moderating )
2011	Tajeddini and Mueller	Swedish	Proactiveness Innovativeness Risk taking Competitive aggressiveness Autonomy
2012	Mokaya	Malaysian	Proactiveness Risk-taking Innovations Self-renewal
2012	Gómez-Haro et al.		Innovativeness Proactiveness Self-renewal New business venturing
2013	Karacaoglu et al.	Istanbul	Innovativeness Proactiveness Risk taking Autonomy Competitiveness aggressiveness

2013	Lwamba et al.	Kenyan	Innovativeness Risk taking Proactiveness Autonomy Competitive aggressiveness Environmental factors and organizational factors was used as moderating variables.
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### Conclusion:

The aim of research paper was to conduct a comprehensive literature review on corporate entrepreneurship and its dimensions. As a conclusion, corporate entrepreneurship have considerable attention in social science research. Moreover, studies have been conducted with several perceptions and in different contexts. For this study the aim was to conclude the past literature on relationship between corporate entrepreneurship and firm performance. Therefore, recent studies as well as historical literature reviewed and suggested that there are several corporate entrepreneurship dimensions, which have been introduced over the years such as innovativeness, proactiveness, risk-taking, competitive aggressiveness, autonomy and self-renewal. Furthermore, it has been established that corporate entrepreneurship dimensions have inconclusive outcome in different contexts. Some studies concluded positive impact and while others have moderate effect. Moreover there are some negative relationships with firm performance were also found. Therefore, it was suggested based on the current statistics that, there is no consensus on the outcomes of corporate entrepreneurship dimensions with firm performance in changed contexts. Therefore, this study suggests a detailed exploration of dimensions while using different circumstances and situations. Recent literature also shows the importance of sustainability. This study also identified the limitations of past studies which need to be further investigated.

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# Ascertaining the Influence of Task Motivation and Constructive Cognition of Self-leadership on Career Development of Women Leaders

**Esther Kadarko Dizaho\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: estherdiza@yahoo.com; tazamu89@gmail.com*

**Rohani Salleh**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Azrai Abdullah**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*\*Corresponding Author*

## **Abstract**

**Purpose:** Effective leadership of women leaders remain questionable, which paves way for low rate of women career development to top management positions. Therefore, this study encroaches into a more inward leadership approach to examine the influence of self-leadership strategies consisting of task motivation and constructive cognition on career development of women leaders.

**Design/methodology/approach:** This study employed a quantitative approach and conducted a survey with 148 women leaders. Multiple linear regression was conducted to achieve results.

**Findings:** Findings shows a positive significant relationship between task motivation and career development as well as a significant relationship between constructive cognition and career development. The results reveal that task motivation and constructive cognition are predictors of career development of women leaders and changes in career development can be accounted for or explained by task motivation and constructive cognition.

**Practical Implication:** Women career development remains a constant challenge prompting women to make drastic career changes, but the big question is “are women self-led”? From this findings, women leaders will learn how to effectively lead themselves in order to effectively lead others through taking inward self-reflection of themselves and attributing efforts in developing inward motivation for task and managing their thoughts and cognitions constructively and positively in order to enhance career development.

**Originality:** Self-leadership has gained wide attention but there is limited studies examining how self-leadership strategies including task motivation and constructive cognition influences career development of women leaders.

**Keywords:** Career development, constructive cognition, self-leadership, women leaders, and task motivation.

**Paper Type:** Research Paper

### **Introduction**

The emergence of women into leadership positions has been progressively slow, although women in leadership have increased over the past decades, however the rate at which women are progressing into leadership positions is low. A study by the international federation of journalist conducted on the issue of media and gender in (Asia Pacific Region, 2015) reported high gender stereotyping still exist and that women are still deemed the weaker gender and hence career privileges are for women are ignored compared to their male counterparts. According to (Dizaho *et al.*, 2015) women advanced more slowly in organizations than men. Malaysia women are moderately educated compared to their male counterparts and according (Department of Statistic Malaysia 2016), Malaysian women encompasses of 53.6% of the country's workforce. However, although women are progressively participating in the labour market, it remains a dilemma why less and lesser women are holding managerial/leadership positions. This puzzle has caught the attention of Prime Minister Najib Tun Razak and he, strategically suggested that every organization should have at least 30% of women involve in executive level (Malaysia Debt Ventures Online 2016). While this degree was introduce to encourage women in taking up more decision making positions and to encourage men in closing the gender inequality in the country, the emergence of women in the elite positions are steadily slow. Women managers make up only 3.2% and women professionals only 14.8%," said Women, Family and Community Development Minister Datuk Seri Rohani Abdul Karim (The Malaysia Insider 2011; The Sun Daily 8th May 2014), Therefore prompting the interest of this study.

Career development has become increasingly challenging for working women, women have reported be opting out of jobs, delaying career progressing and making the decision to delay having children to accommodate career responsibilities (Dizaho *et al.*, 2015; Louise, 2004; and Elisa; 2009). These challenges although are general prompt women into taking personal decisions that effects their career progressing , however could it be that women lack or are unaware of their self-leadership? How led are these women in their own thought, behavior and beliefs? Self-leadership, though a new concept is imperative in leading one's self and subsequently leading others successfully. Thus, this study embrace the inward approach to look deeper into this problem by taking into account the women's inward task motivation and constructive cognitive/thoughts strategies of self-leadership.

### **Objectives**

This study has two (2) main objectives;

1. To examine the influence of task motivation on career development
2. To examine the influence of constructive cognition on career development

### **Who is a woman Leader?**

In this study, a woman leader is an individual of the female gender that holds a position of power and authority over subordinates where such power is exercised in achieving efficiency.

Women with leadership position including managers, supervisors, and head of unit/department are defined as women leaders in this study.

### **Women in Leadership**

Leadership entails exercising of control in ensuring efficiency and productivity of subordinates. Leadership position is accompanied with higher responsibilities and power; exercising that power in organizing, controlling, managing and leading employees towards a common goal occurs differently depending on the leader, hence leader's employee different styles in achieving results and women leaders have been linked more with democratic style of leadership than men (Dizaho, *et al.*, 2015). Women for the past decades have made significant input on the labour workforce and women are still emerging into leadership and more elite positions. Debates have occurred that women in leadership positions exercises a more democratic approach in leading and are less effective compared to men leaders (Dizaho *et al.*, 2015). But the big question is how do these women lead themselves? What motivates them inwardly? Are they internally ready to lead others? Can they led themselves? These questions are critical in understanding why there are low rate of women in leadership positions and why women leaders reportedly are keen to opting out or choosing to restrain from career development from fear of more responsibilities. (Manz 1982; 1986), found that if we are to be effective leaders of others, we must first be effective leaders of ourselves, thus the ability to lead and manage oneself is paramount.

Sinclair (1998) identifies four major issues that explains the low rate of women at senior positions. (1) Denial; this is when the lack of women at the executive level is not regarded as a problem, (2) Women; this is where the differences between gender is acknowledge and women can solve the problem by learning to adapt to the norms of men, (3) incremental adjustment; this refers to when the problem is identified by organizations but the solution is adjusted at a margin to accommodate some individual women, (4) commitment to new culture) this is when the inclusion of women in higher positions is perceived as a solution and embracement of new age culture. The second issue points the problem and solution to women nevertheless, women are women and that fact cannot be changed and as such, the differences between men and women will always exist but does women learning to adapt with the norms and ways of men the best solution to this problem? Certainly not. Women over the past decades have been learning to live and adapt to the detection and norms of men and this has carried over to the professional and business world where women are still subjected to gender stereotypes and denied career privileges. (Dizaho *et al.*, 2015) reveals that women managers with great leadership credentials still experience difficulties in climbing up the career ladder and this causes them to make drastic career choices.

### **Self-Leadership**

Societies debates whether leaders are born or made, well self-leadership detects that leadership starts from within, whether leaders are born or made, the motivation, the zeal and the willingness to be leaders should start from within and hence, self-leadership is paramount to each and every individual leader. A leader needs to first be led, guided, inspired and zealous within, and this will boomerang back into effective leadership of others and overall organizational growth and development. Hence the foundation of self-leadership, the concept and theory of self-leadership was first developed and proposed by Manz (1983); (1986). Self-leadership has be widely acknowledged as a fundamental leadership capability that each leader

possess and ought to be examined. Self-leadership refers to the process of self-influencing in which the individuals manage their own behaviors, feelings, and thoughts to improve individual efficiency (Manz and Neck 2004). (Alves, *et al.*, 2006), define self-leadership as “a practice through which individuals influence themselves to achieve the self-direction and self-motivation necessary to achieve performance”. Self-leadership has been sub-divided into three main strategies comprising of behavior-focused strategies, focusing thoughts on natural rewards, and constructive thought pattern strategies (Houghton and Yoho 2005; Houghton and Neck 2002). Additionally, (Houghton *et al.*, 2012) with reference to changes made by Georgianna (2007) on the classic self-leadership strategies, remodeled the three strategies into behavior awareness and volition, task motivation, and constructive cognition.

- Behavior awareness and volition suggest behavior-oriented strategies of self-leadership which includes self-leadership strategies of self-observation and self-goal setting.
- Task motivation entails motivational strategies involves in envisaging individual capability and effectiveness leading to positive and successful performance outcome.
- Constructive cognition are cognitive focused strategies such as reflection, development of beliefs and assumptions, and mental imagination and practices of anticipated performance outcome.

This study takes into account the task motivation and constructive cognition prediction and influence on career development of women leaders. Self-leadership has earned positive success in self-led leaders personal life as well as the organizations as large. Manz, (1986) found that self-leadership promote a sense of empowerment which leads to innovation and organizational commitment. Georgianna, (2007) reports that self-leadership strategies have positive effects on self-efficacy, which contributes to effective performance. Manz, (1986), and Prussia *et al.*, (1998), claimed that self-leadership can increase employees’ intellectual and mental empowerment. Therefore, leaders who exercises the strategies of self-leadership will feel and have better self-sufficiency and competence which according to (Neck and Houghton, 2006), leaders who experience autonomy, self-sufficiency an competency do so because they view their work as a personal calling and they can realize their potential in working with others in the organization. Also, the self-led leaders have a sense of impact because they anchor their self-definition in their organizational roles and dedicate themselves to the organization’s success. Thus the values and identity of a self-led leader is indefinitely bound up with the self-leadership strategies. Self-led leaders have also been related to more positive reports of health, stress, and spiritual fulfillment (Christopher and Milliman 1994; Dolbier *et al.*, 2001).

### **Task Motivation**

Motivation refers to the reasons underlying behavior (Lovelace *et al.*, 2007). Guay *et al.*, (2010), refers to motivation as the power that triggers us to do or not to do something”. Thus motivation is the forces within an individual that push or propel him to do something. Motivation occurs in two forms, inwardly (intrinsic motivation) or outwardly (extrinsic motivation). Intrinsic motivation rejuvenates performances through the spontaneous satisfactions essential in effective volitional action (Broussard and Garrison, 2004). Intrinsic motivation begins from the inside and so does self-leadership, the motivational strategy of self-leadership implores internal and intentional emphasis on performance outcomes such as visualizing personal competency and effectiveness leading to successful performance (Houghton *et al.*, 2012). Task motivation revolves around envisioning successful performance and reinforcing self-rewards for successful performance outcome. Task motivation facilitate

the use of intermediate objectives in order to attain longer-term. Self-rewards are a means of encouraging oneself to strive in accomplishing goals (Houghton *et al.*, 2012). Task motivation of self-leadership comprises of constructive thoughts and behavioral focus of the three classic self-leadership strategies. Visualizing successful performance since it involves imaginary thoughts, critical thoughts, visualization is more of constructive thoughts while and self-reward which more on actions accompanying successful performance is more related to behavioral focus/natural reward.

Visualizing successful performance refers to imagining successful performance of a task before it is actually completed. According to (Deci *et al.*, 1991; Weick, 1979; Pardee, 1990) motivation energizes actions and determines the direction of action therefore task motivation through a self-led leader can energizes and triggers action which in this case is successful performance as well as guide a self-led leader towards the direction to achieving successful performance. For example, if an individual has a presentation coming up that will determine the route of his/her career, visualizing successful performance will motivate him/her in staying positive and confident while anticipating the presentation. Another example is if the self-led individual has determine to celebrate the successful performance and outcome of the presentation with family and friends, this reward of celebration will motivate the individual to strive towards achieving success in anticipation and joy of the reward. Evidently, there's lack of studies measuring the relationship of task motivation and career development of women leaders, hence instigating the first hypothesis:

*H1 – task motivation has an influence on career development of women leaders.*

### **Constructive Cognition**

Cognition is undeniably an essential aspect of human existence, its importance cannot be denied because it involves our psychological and mental well-being and essentially our abilities to use our senses in gaining knowledge and understanding through thought and experience. Positive thinking has gained wide attention lately, individuals are encouraged to be more inclined to thinking positively due to its scientifically proven outcomes including increase life span, decrease depression, decrease distress, decreased negative stress, greater resistance to catching the common cold, greater psychological and physical well-being and improved health, reduced risk of coronary artery disease and better coping skills during hardships, (Mayo Clinic 2014). (Ellis, 1975; Burns, 1980; Mayo Clinic, 2014), revealed that some of the problems that individuals encounter result from dysfunctional thinking. This proves the power of positive thinking which originated the strategy of constructive thought of self-leadership. Constructive cognition/thought self-leadership strategy is intended at restructuring some crucial mental practices in order to encourage more positive and optimistic thinking patterns and mental processes that can have a significant impact on individual performance (Prussia *et al.*, 1998; Burns, 1980; Neck and Manz, 1992). A statement by Henry Ford quotes “think you can or think you can't, either way you will be right. Thus one's thought determine one's outcome.

Constructive cognition encompasses of self-talk and evaluation of beliefs and assumptions. Self-talk (self-dialogue), refers to what we covertly tell ourselves. Self-talk is the ceaseless flow of thoughts that run through individual minds/heads daily. These instinctive thoughts can be positive or negative and approximately most of individual self-talk comes from logic and reason (Agor, 1989). Constructive cognition arises from the positive thoughts that individual engage in daily. A self-led individual can program his/her thoughts to positively influence performance. Studies reveals that self-talk tallies with individual emotional states, which in

turn affects behaviors and cognitions (Burns, 1980). Thus, a self-led individual can be able to improve his/her outlook about his/her work by managing his/her emotional state. Study by (Neck and Houghton, 2006) report that employees who bring their negative self-talk to a level of consciousness, and who rethink and re-construct their inner dialogues, may be able to enhance the spirituality of their work. Constructive thought self-leadership can help employees in influencing or leading themselves towards experiencing more spirituality in their work. Additionally, it has been reported that the leaders practicing more effective self-leadership skills particularly constructive thinking are more inclined to be innovative (Butler, 1981) and have higher comprehensive self-efficacy (Georgianna, 2007). Constructive thought strategy have also been associated to job fulfillment (Carmeli *et al.*, 2006; Judge and Locke., 1993). Furthermore, a longitudinal study found that the mental health and job-search efforts exercised by unemployed individuals were poorer in weeks when they reported negative and unconstructive thoughts (Houghton and Jinkerson, 2007). Conversely, performance has also been linked with constructive thought and self-talk were managers with low performance were associated with negative thoughts and high performing managers were found to center and construct their thoughts positively and focused more on how to overcome their hindrances rather than fear of their hindrances (Wanberg *et al.*, 2012).

A study by Manz *et al.*, (1988) reveals that employees who participated in constructive cognition self-leadership training intervention comprising of self-talk, mental imagery, beliefs and assumptions, and thought pattern strategies experienced greater mental performance, affective states, job satisfaction and self-efficacy expectations compared to the employees who did not partake in the training. Moreover, it has been advised in clinical psychology that an individual's beliefs and assumptions can have an effect in various cognitive distortions that can lead to depression. Thus constructive and positive self-talk and frequent evaluation of individual's beliefs and assumptions is encouraged, moreover, there's lack of studies examining the influence of constructive cognition on career development therefore, prompting the second hypothesis of the study:

*H2 – constructive cognition has an influence on career development of women leaders.*

### **Methodology**

This survey employed the quantitative approach to investigate the influence of task motivation and constructive cognition on career development of women leaders. 148 women with leadership positions participated in the survey. The stratified random sampling technique was used because the population was stratified and limited to only women holding leadership positions working in limited (8) industry sector. Multiple linear regression was run using Statistical Package for Social Science [SPSS] for analysis. This was so to ascertain how their self-leadership in terms of task motivation and constructive cognition influences their career development.

The recent abbreviated self-leadership questionnaires [ASLQ] by (Houghton *et al.*, 2012) was adapted, task motivation consisted of 3 items and constructive cognition consisted of 3 items. Lastly the Career Development Questionnaires {CDQ} by Berkeley Survey of Workplace Climate/Career Life Issues consisting of 8 items was also adapted for this study. All assumptions were met to ensure normality, linearity homoscedasticity, and independence of errors.

Reliability test was conducted with 35 women leaders (excluded for the primary study) to determine the internal consistency reliability of the items/scale. The Cronbach Alpha Internal

Consistency Reliability was implored. Cronbach alpha is measured within the ranges from 0 to 1.00, values nearest to 1.00 indicate high consistency of items. Acceptable value for a Cronbach alpha internal consistency is 0.7, values less than 0.7 is considered unreliable and depict inconsistency of item. The alpha value of 0.751 was achieved for task motivation and 0.722 was achieved for construction cognition and lastly 0.816 was achieved for career development and according to (Cronbach, 1951), the said values depicts very good internal consistency of the all constructs scales and items.

### Results and findings

This study employed the quantitative approach to ascertain the influence of task motivation and constructive cognition on career development of women leaders. Multiple linear regression was conducted to determine the predictive capacity task motivation and constructive cognition has on career development of women. 148 women leaders participated in this study and here therefore are the results of the study. Table 1.1 shows the descriptive statistics of the study, the descriptive statistics of the study reflects that the data were well spread out for all variables including career development, task motivation and constructive cognition.

**Table 1.1 Descriptive Statistics**

	Mean	Std. Deviation	N
<b>Career Development</b>	29.0205	4.89682	148
<b>TM</b>	11.4863	2.12452	148
<b>CC</b>	11.5000	1.82038	148

### Respondents' Profile

The respondent profile reveals personal and demographic details of participates in the study. The respondents were 100% Malaysian nationality, 76.4% had children while 23.6% did not. The racial makeup were 86.5% Malays, 8.1% Chinese and 5.4% Indians within the age ranging of 25-35 (35.8%), 36-45 (37.9%), 46-55 (20.3%) and 56-60 (6%). Among them, 79.7% were married, 15.3% single, 3.1% divorcee and 2% separated. Most of the respondent were fairly educated 17.6% certificate holders, 20.9% diploma, 46.6% bachelor degree, 10.9% master degree or equivalent and 4% where 31.8% are working in the oil and gas industry, 33.8% service industry, 14.2% banking industry, 17.9% government sector and 8.85 others, moreover, 37.8% were supervisors, 19.6% assistant managers, 20.9% managers, 16% head of unit/department and 4.7% senior managers. Table 1 depicts the details of respondents with the mean and standard deviation.

Table 1: Respondent Details

Details	Mean	SD	RESULTS				
<b>Nationality</b>	1.19	.748	100% Malaysians				
<b>Children</b>	2.43	1.47	76.4% Children	23.6% No Children			
<b>Race</b>	1.45	.729	86.5% Malays	8.1% Chinese	5.4% Indians		
<b>Age</b>	3.11	.790	35.8% 25-35	37.9% 36-45	20.3% 46-55	6% 56-60	
<b>Marital status</b>	1.78	.786	79.7% Married	15.3% Single	3.1% Divorcees	2% Separated	
<b>Education</b>	2.73	.962	17.6% Certificate	20.9% Diploma	46.6% BSc.	10.9% MSc/Eq.	4.0% Others
<b>Industry</b>	2.87	1.80	31.8% Oil and gas	33.8% Service	14.2% Banking	17.9% Government	8.8% Others
<b>Position</b>	2.61	1.60	37.8% Supervisors	19.6% Ast.Manager	20.9% Managers	16% HOD/unit	4.7% Snr Managers

### Correlations

Correlation coefficient is used to determine relationship between variables or constructs. The degree of association is measured by a correlation coefficient, denoted by  $r$ , the  $r$  coefficient signifies whether a relationship exists between two variables or more using its  $p$  value. The correlation coefficient is measured on a scale that varies from + 1 through 0 to - 1. Table 2 reveals the correlation/relationship between career development, task motivation and constructive cognition. Findings unveils a significant relationship between task motivation and career development ( $r = .358$ ,  $p = 0.000$ ) and between constructive cognition and career development ( $r = .354$ ,  $p = 0.000$ ) and lastly between task motivation and constructive cognition ( $r = .600$ ,  $p = 0.000$ ).

Table 2: Correlations

Pearson Correlation	CD	TM	CC
CD	1.000		
TM	.358	1.000	
CC	.354	.600	1.000
Sig ( 1-tailed)	.000	.000	.000
N	148	148	148

### Model summary/ANOVA

To ascertain the fit and level of variation explained or accounted for by the independent variable on the dependent variables, R<sup>2</sup> is examined. R-square (R<sup>2</sup>) is the degree of variance of the dependent construct explained by the independents (Hair *et al.*, 2014). R-square (R<sup>2</sup>) is the squared product-moment correlation coefficient with values ranging between 0 – 100 indicating the predictive capacity of the model. High R<sup>2</sup> value depicts the strength and volume in which independent construct explains dependent construct (s), hence the higher the R<sup>2</sup> value the better the model (Hair *et al.*, 2014). Interpretation of R<sup>2</sup> value depends on the particular model and the research discipline. However, R<sup>2</sup> value of 0.75 is considered substantial, 0.50 is moderate while 0.25 is weak (Hair *et al.*, 2014). Additionally, the F-test or ANOVA is used to determine whether the model is a good fit for the data using its p value. Both model 1 and 2 in this ANOVA test have a significance value of  $p = 0.000$ , thus using the p value, this model has a good fit and has worked well in explaining the variance in career development. Table 3 and table 4 depicts a significant regression equation where task motivation exhibit a significant effect on career development ( $F(1, 144) = 21.124, p = 0.000$  with  $R^2 = .398$  and constructive cognition explains a significant effect in career development ( $F(2,143) = 13.334, p < 0.000$  with  $R^2 = .423$ ).

Table 3: Model Summary

Model	R	R Square	Std. Error
1	.558	.398	4.58874
2	.598	.423	4.52396

Table 4: ANOVA

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	444.793	1	444.793	21.124	.000
	Residual	3032.146	144	21.057		
	Total	3476.938	145			
2	Regression	550.271	2	275.136	13.443	.000
	Residual	2926.667	143	20.466		
	Total	3476.938	145			

### Regression

Regression is a statistically used to examine the linear relationship between two or more variables. Regression is primarily used for prediction and causal inference thereby revealing the relationship between one independent variable and a dependent variable and depicts the level of variation in one or more variables (Campbell and Campbell, 2008). The predictive capacity of constructs was determined with regression coefficients, which have work well in explaining the relationships and strength of relationship between career development, task motivation and construction. The beta and t value of a regression coefficient are used to determine the outcome of a relationship using its p value. A coefficient is significant when the significant value is less than .05 at 95% confidence level. Table 5 depicts the regression coefficient, where task motivation predicts changes in career development of women leaders (Beta = .358,  $t(145) = 4.596$ ,  $p < 0.000$ . while constructive cognition predicts changes in career development (Beta = .218,  $t(145) = 2.275$ ,  $p < 0.025$ . Thus, task motivation and constructive cognition have predictive capacity and are good fit to explain the changes that occurs in career development.

Table 5: Regression

Model		Unstandardized B	Std Error	Standardized B	t	Sig.
1	Constant	19.551	2.095	.358	9.332	.000
	TM	.824	.179			
2	Constant	16.275	2.520	.218	6.459	.000
	CC	.586	.258			

### Discussion

Career development of women leaders have been reportedly hindered or stagnant. Studies have reported that women career development are affected by factors including work family conflict, gender stereotyping, workplace discrimination, and etc... This study took a different approach to ascertaining if individual factor such as inward task motivation and constructive thoughts/cognition of self-leadership have an influence in the career development of women.

Task motivation outlines how the leaders motivates themselves by visualizing successful performance and rewards while constructive cognition demonstrate how they constructs their thoughts, minds, imaginations positively to achieve performance.

Task motivation was found to have a significant relationship with constructive cognition and career development. A significant amount of variance or changes that occurs in career development can be explained and accounted for by task motivation. therefore, it can be agreed that the act of task motivation which includes picturing in one's mind successful performance before actually performing the task, rewarding oneself with a loved activities after successfully completing a task and visualizing successful performance before performing a task all induces changes in career development of that leader. This findings reveals that the women leaders used in this study (Malaysian women leaders) do actively engage in task motivation by usually visualizing and rewarding successful performance. This also reveals that because these women leaders are task motivated, they achieved positive changes in their career development. Visualizing successful performance is a strategic means of achieving the said performance, self-led leaders who envisages successful performance are more likely to achieve success. Imagining oneself accomplishing a task can give an individual the courage and motivation needed for the task ahead and prepare the individual for a better performance of the assigned task. Being motivated inwardly for task prepares an individual for the task better, competency is improved, confidence is improved and creativity is improved when one visualizes successful performance of task and this boomerangs into actual successful performance of task which will eventually positive influence one's career development.

Changes and variation that arises from career development can be explained by task motivation means that an increase in task motivation through visualizing successful performance or self-reward was found to amount to an increase in career development and decrease in task motivation will also account for a possible decrease in career development. Task motivation was found to be relatively predicting changes career development, hence, task motivation has the strength to influence the increase and decrease in career development. This is in line with findings by (Houghton *et al.*, 2012) who revealed that task motivation comprising of visualization of successful performance and self-reward and the use of mental imagination has been associated with a more develop positive and extensive interpretation of leaders productivity as well as their organization's potential. Therefore, it is conclusive that when a self-led leader visualizes successful performance, acknowledges self-rewards, they are motivated for the task ahead, it influences their career development and vice versa. Moreover, (Neck and Milliman, 1994) suggested that if an employee pictures him/herself mentally as not having the sense of purposes in his/her job, it will boomerang into lack of self-confidence in one's job as the individual had imagined. Therefore, it is necessary for leaders to be self-led and motivated towards task. This findings are consistent with that of (Manz and Neck 1991) who found that if an event is anticipated and thought of as already accomplished, it can be more easily achieved; and the success and failures of leaders in engaging this attitude will determine the success of their development. Additionally, self-reinforcement of reward is a strategic motivational tool that can boost the morale and confidence of the self-led leader in achieving successful performance in regard to the anticipation of the self-reward such as performing excellently for an anticipated reward.

Constructive cognition was found to be positive associated with, and responsible for changes in career development. Constructive cognition in terms of self-talk, evaluating accuracy of ones beliefs and thinking about ones beliefs and assumptions have predictive capacity on career

development of women leaders. Constructive thoughts have been acknowledged widely to be tremendously beneficial to individual's life and even work life. This findings are in track with the findings by (Neck, 1993), who found that constructive self-talk is positively related to effectiveness, creativity and originality at the workplace and vice versa for negative self-talk. This study found constructive cognition to be relatedly responsible for predicting changes in career development. Thus, when a self-led leader construct her thought positively, it has an influence on the individual career development and if the thoughts/cognition are constructed negatively, hence negative influence on career development. Due to the positive association constructive cognition, self-talk has been suggested as a self-influencing strategy for enhancing the personal efficiency of employees and managers (Neck and Manz, 1996).

Additionally, this findings reveals that career development can be explained by not just external factors but also internal individual factors such as constructive cognition. Women leaders can make the decision to construct their thoughts towards positivity since it has been found to have an influence on their career development. This can help with the feeling of inferiority of being the weaker sex. Many women believe that the workplace favors mainly men and women are just allowed career advancement only to some extent, although that is true to some extend nevertheless, maybe the another problem is with the way women are thinking, women have positioned themselves and accepted themselves as being the weaker gender in everything including career development. How about women leaders taking the initiative to not see themselves inferior to men but rather equals who are capable of achieving and accomplishing success just as men can? According to (Steven *et al.*, 2013) employees can identify and confront their dysfunctional beliefs and replace them with more rational beliefs through constructive self-talk, this has been proven to be effective in achieving success.

Changes in career development can be predicted and explained by task motivation and constructive cognition strategies of self-leadership. Although both strategies are significantly relevant in explaining and predicting changes in career development, task motivation has a higher influence on career development compared to constructive cognition although the differences is slim. Thus in comparison of both task motivation and constructive cognition influence on career development, task motivation has a higher influence on career development.

### Hypothesis Findings

Table 6: Hypothesis Testing

N	Hypothesis Statement	Remarks
H1	Task motivation has an influence on career development of women leaders.	Supported
H2	Constructive cognition has an influence on career development of women leaders.	Supported

### Recommendations and Limitation of the Study

Career development is a feat for an individual as a result of work effectiveness/fulfillment and beneficial to the organizational productivity and competitive edge therefore, career development can be improved through self-leadership strategies including task motivation and constructive cognition. According to (Manz and Neck, 2004) self-leadership has to do with

self-influencing in which the individuals manage their own behaviors, feelings, and thoughts to improve individual efficiency. Thus leaders can influence and manage their behaviors, feelings, thoughts to achieve efficiency in career development. Women leaders need to be task motivated by focusing on the short/long term reward of their efforts. Women leaders should make the decision to construct their thoughts positively since it has been found to have an influence on career development.

This study was limited to only women leaders in Malaysia, future studies should consider a broader sample and a different scenario. Future studies can also include male respondents to ascertain the differences in practicing task motivation and constructive thought and its impact on career development. A comparative analysis can also be conducted on male and female leaders to ascertain their diverse approaches of self-leadership and why men are seemingly more advancing in career compared to their women counterparts. What self-leadership approaches do men leaders possess and are men leaders more self-led than women leaders should be examine. Future studies can also conduct a comprehensive study of different countries to examine the difference in self-leadership practices.

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# Achieving Work Life Balance Through Flexible Work Schedules and Arrangements

**Esther Kadarko Dizaho\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: tazamu89@gmail.com*

**Rohani Salleh**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Azrai Abdullah**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*\*Corresponding Author*

## **Abstract**

**Purpose:** The difficulties of employees coping with work and other aspect of life sphere remain a challenge. Therefore, this study seek to examine the strategies in organizational work schedule and arrangements that can be designed in encouraging and achieving work life balance.

**Design/methodology/approach:** This paper is a critical review of different studies in the area of work life balance and flexible work schedule and arrangement with the aim of broadening existing knowledge and providing a better understanding of the position and contributions from various scholars, authors and experts in the field.

**Findings:** Findings reveal that flexible work schedule and arrangement is an effective means of achieving work life balance. Flexi-time, working from home, part time, job sharing and tele-working have been depicted as effective strategic approaches of achieving work life balance. Shift work has however been found to be negatively interfering with work life balance.

**Practical Implication:** Though work life balance has gained wide attention, yet, many organizations are still lacking in sourcing and implementing appropriate strategies to minimize work life conflict and achieved work life balance. This growing awareness of the issue of work life conflict has resulted in major growth in attempted work-life solutions during this decade, and this study provides some of the best, easiest, and cost effective strategies of work schedule and arrangements that can be adapted, implemented and practiced.

**Originality:** This study provides a collaborative evidence of various explores and studies, thus it present tested and approved collective method of achieving work life balance with a proposed framework that can be tested empirically.

**Keywords:** Flexible work schedule/arrangement, work life balance (WLB)

**Paper Type:** Review Paper

## **Introduction**

Work life balance (WLB) has become an essential element in sustaining and achieving balance between individual life and work life. Although emerged as solution oriented attempt to ease the women workforce of conflict arising as a result of their involvement in the workforce, WLB gained wide attention and has gone beyond a women oriented strategic solution. The practice of WLB was solidified in the 1990s after Kellogg Company first introduced the practice through structured work-life program of four-six-hour shifts to replace the traditional three daily eight-hour shifts. During the 1980s, organizations such as Merck, Deloitte and Touché, and IBM began to change their internal workplace policies, procedures, and benefits. The changes included maternity leave; employee assistance programs (EAPs), flextime, home-based work, and child-care referral. The practice of WLB draw the male workforce attention and by the late 1980s when men also began voicing work-life concerns and the need for them to be involved with WLB and not just women. By the end of the decade, WLB was seen as more than just a women's issue, affecting men, families, organizations and cultures (Aron, 2009). The solidification was with the recognition of WLB as a vital issue for everyone including women, men, parents and non-parents, singles, and couples. This growing awareness of the central importance of the issue resulted in major growth in attempted work-life solutions during this decade. Numerous studies have shown that the generations from baby boomers to new college graduates are making job choices based on their own work-life issues and employers' cultures (Bird, 2006).

Although women participation in the workforce induced WLD, the prominence of WLB has now gone beyond only women, other factors such as technological advancement, globalization, and, aging population, the young workforce are paving ways for work flexibility (Naithani 2010). Difficulties in balancing the act of work and life occurs as a result of time based conflict- which is the inability to balance time, strain based conflict- which refers to the strain that occurs as a result of inability to achieve balance and behavioral based conflict- which refers to behavioral changes detrimental to work and personal life due to the inability to balance work and life spheres (Greenhaus *et al* 2003; Dizaho *et al* 2016). Therefore, in addressing and achieving work life balance, workplace flexibility is essential. Flexible work schedule and arrangement creates the avenue for employees to address other life challenges, thus encouraging work life balance (Williams, 2008). There are different types of flexible work schedule/arrangements but for precision purpose, this study address how WLB is achievable through flexible work schedule/arrangement comprising of flexi-time, part-time work, work from home, shift work, job sharing and tele-working.

## **Objective**

The objective of this paper is to critically analyze and broaden the existing knowledge on how work life balance can be achieved through flexible work schedules and arrangements.

## **Definition of Terms**

### ***Flexible working***

Flexible working refers to un-rigid patterns and structures of work and working arrangements (Tipping, 2012). Flexible working describes individuals work environment such as home working, or the structure of work such as part-time working, flextime, job sharing and shift working, tele-working, overtime, compressed hours, and annualized hours (ACAS, 2015;

Beauregard *et al.*, 2009). “In this study, flexible working refers to working schedule and arrangements that provides employees flexibility which occurs in terms of flexi-time, part-time working, shift working, working from home, tele-working and job sharing.”

### ***Work Life Balance***

Various scholars have identified the term WLB in different but related categories. Dundas (2008), affirmed that work-life balance is about efficiently managing the pressures between paid employment and all additional activities that are essential to people such as family, community activities, voluntary work, individual growth and spare time and amusement. Greenhaus *et al.*, (2003), defined work-life balance as the degree to which an individual is evenly occupied in and evenly satisfied with his or her work role and family role. Thus, people who have WLB are those who are evenly dedication to work, and other life non-work responsibility. Hudson, (2005) also defines WLB as a satisfactory level of participation or ‘fit’ between the numerous roles in a person’s life with specification to work and personal life of each individual.

### ***Flexi-Time***

Flex-time refers to a working arrangement in which employee can choose the time of work i.e. choosing the start and finish times of work on an agreed amount of hours weekly or monthly (Tipping, 2012).

### ***Job Sharing***

This refers to working arrangement where a full-time job is divided, usually between two people (Tipping, 2012).

### ***Shift Working***

Shift work is a work schedule whereby one employee replaces or takes over the same job from another employee within a 24-hour period (ACAS, 2013).

### ***Part Time***

Part-time is when individuals are contracted to work for anything less than the standard fundamental fulltime hours (ACAS, 2013).

### ***Working from Home***

Working from home or home working is a working arrangement where an employee regularly works all, or some of, their time at home (Tipping, 2012).

### ***Teleworking***

Tele-working is the term used to illustrate flexible working that can be done from any location using technologies such as laptops, wireless internet connection and mobile phones (ACAS, 2013; Drew *et al* 2003)

## **Review of Literature**

### ***Flexible work schedule/arrangement***

Flexibility of work schedule is an essential aspect in circumventing role load for both men and women. Findings from previous research by Tipping, (2012) has shown the degree of the effectiveness of WLB by identifying that flexible working for those who had been privileged to do so, were believed that WLB helped amplified and resulted to quality family time, and augmented into better expediency while virtually (48 percent) of individuals working flexibly did not feel that there were any drawbacks of work flexibility. According to (Williams, 2008) flexible work schedules result to better work-life balance and can make up for work pressure.

Organizations that offer more flexible work practices appear to have lower turnover and higher employee engagement and satisfaction (North Coast 99, 2014) and (WorldatWork, 2013) report that flexible work arrangement have a positive relationship on employees motivation, satisfaction, engagement and reduces organizational turnover rates, besides, the accumulation to higher degree of work/life fit, flexible working also arrangement promote good health, improves better sleeping, provide time for more exercising and works well in reducing stress level. Additionally, (Corporate Voices for Working Families, 2011) discovered that employees with access to effective flexible work arrangement are most likely to have increased job satisfaction, employees' engagement and stronger intentions to stay in the organizations. Studies by (Levin-Epstein 2006; Sanjeevkumar 2012; Albertsen *et al.*, 2005) has shown that flexibility in working arrangement is one of the reasons why many employees choose to remain and stay in organization. Findings by (Perry-Smith and Blum, 2000; Burke and Moffett, 1988; Bloom *et al.*, 2012) also indicate that the provision of job/workplace flexibility boomerang into employee's satisfaction and productivity. (Corporate Voices for Working Families, 2011) reports that work flexibility improves financial performance and productivity as well as amplifies revenue generation and increases customer service. Flexible working also encourage employees efforts to facilitate sense of balance to their occupation and personal lives, remain connected with friends and family and handle caring everyday jobs, whether kids, grandchildren, parents, partner or friends and neighbors (CIPD, 2012).

### ***Flex-time***

Flextime originated in Germany in the 1970s, and has gained wide attention Western and Northern Europe, the U.S. and some part of Asia (Avery and Zabel, 2001), Flex-time refers to a working arrangement in which employee can choose the time of work i.e. choosing the start and finish times of work on an agreed amount of hours weekly or monthly (Tipping, 2012). Flexible working arrangements provide married women with youthful offspring who need the maximum parental time, to balance work and home (Hill *et al* 2004). This is an effective practice of WLB, where employees can choose when they start and finish, for example, an employee may choose to work from 7am to 3 pm daily where the employee can have the remaining day off to take care of other personal issues. Time has been pointed out as an imperative factor in achieving work life balance. Time according to previous research is the best predictor of work life balance; this is so because achieving work life balance is impossible without time, time defines the availability of an individual to achieve balance. The availability of an employee to give time and attention to one aspect of life means forfeiting time in the other aspect of life (Lockwood, 2003). Flextime provides employees with the choice of creating flexibilities to achieve and enhance work life balance by permitting them to schedule their working time in accordance to their availability. Choosing the time of work permit the employees to adjust their working time in such that they can have the needed time and flexibility to address other life issues therefore enhancing work life balance. According to (Bloom *et al* 2012), flexi working time has a positive impact on employee's productivity. Similarly, the provision of flexi time by the organizations has been associated to work satisfaction and organizational dedication for women and for all workers with family responsibilities (Scandura and Lankau, 1997). There is a well-built belief by both men (97%) and women (92%) that time flexibility will augment work life balance (Doble and Supriya, 2010). Moreover, apparent control of work schedules, that is choosing working time increases

work-life balance in terms of family and work (Tausiq and Fenwick, 2001). According to (Pocock and Clarke, 2005) flexible working hours will increase work life balance.

### ***Job-share***

Job sharing authorizes two and infrequently more people to share the responsibility for a full-time job (Christensen and Staines, 1990). Employees split the pay and remuneration in accordance to the hours each works. Job sharers may work split days, split weeks, or interchange weeks (ACAS, 2013). This provides the sharers with much job flexibility and time to address other responsibilities as well as improves quality of work because when two people are sharing a job of one person there is a high possibility of achieving high performance compare to when the job is been done by one person (Tipping, 2012). Job sharing induces flexibility for both sharers being in attendance when workloads are profound. Job share provide the privilege for the sharers to adjust working hours to address work life balance however the sharers must concur on any changes to the established hours. Job sharing reduces sick leaves and absenteeism in the case that if one partner is unable to be present as a result of sickness, emergencies, or holiday, the other colleague can carry on with at least the slightest amount of work (ACAS, 2013). The value of having two employees share the same job is that they can influence each other positively by sharing skills, experience, views and ideas to the job. According to (Kossek and Lee, 2005), job sharers occasionally have complementary skills, where each person performs a different aspect of a full-time job, such as one person focusing on the human resource aspects and the other on the financial duties, thus making the work easier and flexibility more accessible. Furthermore the act of sharing job is significantly useful for working parents and working mothers in terms of pregnancy, easy resumption to work after maternity leave and nursing a child and thus an effective means of achieving WLB.

### ***Part-time work***

Part time work has been identified by (Kossek and Michel, 2013), as one of the most common and effective method of flexible work schedule/arrangement worldwide. Part time work schedule became acclaimed and recognized during the World War II as a means of creating allowances for employers to cut and reduce labor costs as well as to accommodate women in the workforce and has since being widely practiced worldwide (Tilly, 2006). A study by (Albertsen *et al* 2005), shows that both career women and wage-earning mothers in part-time employment experienced lower levels of work family interference than the full-time employed persons did. This finding proves therefore that part time working schedule provides a more sufficient WLB for employees by reducing the level of work interference with their home and personal responsibilities compared to employees who worked full time. This also means that employees who work full time have a lesser advantage of balancing their work life conflict. According to (Subramaniam et al., 2010) many married working mothers prefer part time work in balancing their home and work life. Working part time solves the dilemma of childcare for parents and the prearranged schedule gives employers ample of time to prepare in advance to cover nonattendance (ACAS, 2015). A study by (Doble and Supriya, 2010) indicates that both men and women professed that work life balance would advance if they were able to work flexibly, thus providing privileges for a part time worker is another means of balancing employees work life conflict.

### ***Shift working***

While this sort of work arrangement is not always assumed to be a flexible work schedule, it work arrangement does not tally with the common standard working time and creating room for some flexibility (Kossek and Michel, 2013). Employees on shifts usually work in crews, which are groups of personnel's who compose of different and separate shift team. Systematically, each team will frequently change its hours of work and rotate morning, afternoon, and night shifts (ACAS, 2013). Study by (Albertsen *et al* 2005), reported shift work to be found prospectively related to higher work-home meddling where backward-rotating shifts were found to be worse than forward-rotating shifts, while found night and evening work more detrimental to work life balance than rotating shift. Working shifts has been perceived to be harmful to employee's wellbeing, and cause difficulties in the arrangement of family activities (Levin-Epstein 2006; Halpern 2005). The negative effect of shift work can be as a result of the inability of the shift-working employees to balance reconcile their work and personal life, for example, an employee who works at night on a shift basis, will most likely return home the next morning tired and sleepy and therefore sleep and wake up in the afternoon, get only a few hours to sort personal things out and en route back to work; this arrangement can affect an employees by turning the day to night and night to day which is naturally unhealthy.

Study by (William, 2008) found that employees who work on shift were considerably more probable to be frustrated with their work-life balance than normal daytime employees. Employees contracted to work on shift basis were also more likely to experience difficulties from role overload. Those working on call or other shifts had broadly higher levels of unhappiness with work-life balance than day workers (23%). Interestingly, all shift workers were more likely to slash back on sleep when they wanted more time and were more likely to worry about not having quality time with their families (Dizaho and Othman 2013). The ability to balance this sort of work schedule can be challenging and as such the employers have a duty to help their employees balance their work life conflict and ensure organizational effectiveness. Therefore, due to the notable negative effect shift working has on employees ability to achieve balance, organizations practicing shift work schedule should take extra precautions in promoting their employees wellbeing by providing them ways to balance their work and personal life. The high conflict resulting from shift working can be reduced should practicing organizations divide the shift into more groups by rotating employees shortly after a considerable and reasonable amount of time rather than all night and all day rotating; this will help in diminishing the work life conflict.

### ***Working from home***

Working from home is one of the best means of achieving WLB especially for working mothers because it provides the employees with all the flexibility needed to achieve quality work and quality life. While employees work at home, the employee will be settled, at peace because the environment provides him/her with the privilege to address personal issues as well as work related matters and therefore conflict between the two will be at a minimum. Study by (Doble and Supriya, 2010) revealed that both men and women expressed the need of freedom to work from home, thus exposing the fact that working from home is not only beneficial to women only but for men as well. According to (Pocock and Fenwick, 2001), home working is another aspect of working schedule which is favored by both men and women and it has been proven to amplify work life balance. Although working from home provides flexibility and

independence in addressing work life conflict, the home environment can be challenge, study by (Varatharaj and Vasantha, 2012) revealed that home atmosphere plays a very significant role in increasing work life balance and the quality of life, however the environment of home working could be traumatic if little children have to be managed. According to (Valcour and Hunter, 2005) home working can lead to higher flexibility and autonomy, but it can also make concerned employees work for longer period of time, including weekends and evenings but may not necessarily interfere with effective performance. Working from home allows employees to perform their job description from home, either infrequently or as a permanent working agreement, ACAS (2013), suggest a mutual consideration and relationship that is based upon confidence and trust that support employees to manage their own work for organizations who choices to implement working from home. Working from home reduces financial strain on the employer and reduces sick leaves, time offs/emergency leaves, absenteeism, turnover and low performing employees while increasing employees satisfaction, loyalty and productivity (Dizaho and Othman, 2013).

### ***Tele-working***

Teleworking refers to a work arrangement that permits employees to access work activities from numerous diverse locations, usually by using technologies to convey information (Pérez, *et al.*, 2002). Tele-working is an effective means of achieving WLB because it provides the needed flexibility for employees to perform and carry out their various job descriptions at any location. The internet and cell phones have made it achievable for the organizations to keep in steady contact with the employees both during the day and at night (Morgan, 2003). Thus the employees can work in environments where they can as well address their personal issues and responsibilities such as staying or working at home, at schools, at parks with their kids, and while visiting their loved ones (Alexander, 2011). The provision and advancement in technology is also changing the pattern of work and forcing organization to execute strategies in adapting to technological change, however the idea and strategy of tele-working can be effective in achieving WLB and mostly will result in employees satisfaction, productivity and reduce turnover rates (ACAS, 2013). Additionally, it is necessary to know that although tele-working provides workers with needed flexibility to balance their work life conflict, it also has some dangers that organization ought to be aware off. When using tele-working/e-working as strategy of achieving WLB, organizations should ensure maximum supervision of employees to ensure that employees do not misuse the opportunity or violet organization rules/regulation and privacy, the provision of technology has create the ease of monitory employees. This can be achieved by employers providing the technologies for the involved employees with limitation authorization and a system that will enable employers to monitor tele-working employees from time to time at location/environment in which they work. Tele-working provides the flexibility, autonomy, reduces stress and provide the tele-worker ample of privilege to work in any location thus, promoting a healthy lifestyle and work life balance.

### ***Work life balance through flexible work schedule/arrangement***

As set out to examine, figure 1.1 depicts the relationship between flexible working schedule and arrangement and work life balance derived from critical review. As seen in figure 1, flexible work schedule and arrangement which include flexi-time, job sharing, part-time work, working from home and tele-working have been collectively agreed by various scholars as means of achieving work life balance. Thus the effective practice of work flexibilities will

result to work life balance with the exception of shift working which however has been identified to have negative effect on work life balance and therefore not an effective work schedule that enables and promotes employees work life balance.

### Flexible Work Schedule and Arrangement

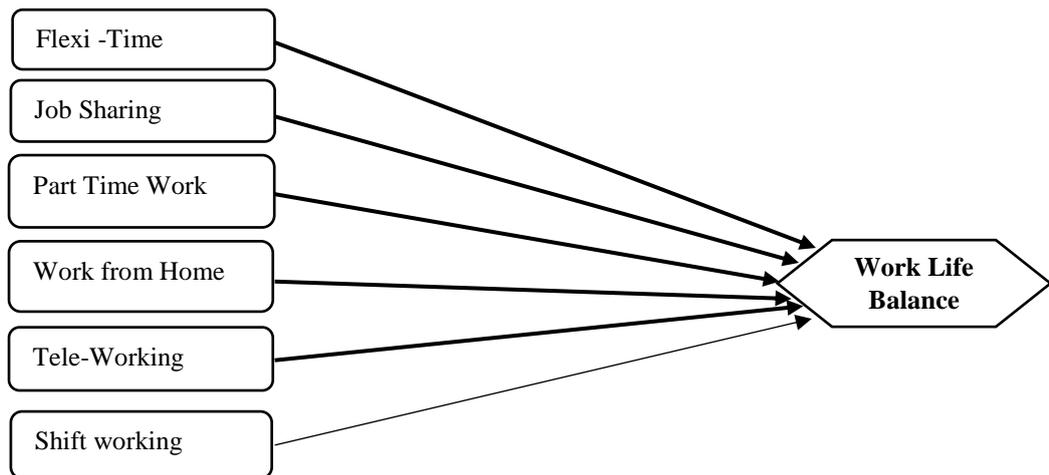


Figure 2: Conceptual Framework

### Research Methodology

This is a conceptual paper based on secondary data. Burns, (2003) identified secondary data as previous research or data conducted by another person. In this paper, the secondary data's used include various previous literatures on flexible working schedule and arrangement, which includes, flexi-time, part-time, job sharing, working from home, tele-working and shift-working, as well as literature on work life balance. Various literatures were critically analyzed and findings were sum up to produce this paper.

### Conclusion

The prominence of achieving work life balance is paramount, therefore, organizations are encouraged to take necessary actions in providing employees with the opportunities to balance their home and work life. Flexible work schedule and arrangement does therefore facilitate the need for employees to achieve balance in their home and work life. According to Osmowitz (2005), most employees are interested in work flexibility and most employees consider work flexibility especially women when considering a job. Moreover, flexi time and working from home are the most preferred flexible work schedule by both men and women compare to part time and tele-working. Flexible work arrangement has increasingly become a preferred means of achieving work life balance in most western countries while interestingly, research by Osmowitz (2005), discloses that most Malaysian employees misunderstands the notion of part time and as such, they are mostly not fanatical to this structure of flexible work schedule. While work life balance is encouraged due to the tremendous benefits it earns to the organization such as increased in productivity, loyalty, satisfaction, increase in morale, attitude and behaviors of employees, and etc., work life balance is also beneficial to the employees by increasing flexibility, increase in family and leisure time, childcare privileges, less work life conflict, reduce burnout, and improve emotional, physical and psychological wellbeing. Lastly, shift

working should be taken into serious consideration due to its notified potential of meddling and interfering with work life balance rather than boosting it and thus organization should not be fast in implementing shift work and if necessary then they should take careful consideration and strategize on ways to reduce conflict arising from work and life spheres of shift workers to ensure less work-life difficulties and promote work life balance.

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# Overview of Nanotechnology Innovation System and Its Main Actors in Malaysia

**Yasmin Rajab**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Azrai Hj. Abdullah**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Nor Hisham Hamid\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

Email: hishmid@petronas.com.my

*\*Corresponding author*

## **Abstract**

**Purpose:** This study seeks to map out and describe the main components of the innovation system in Malaysia within nanotechnology by providing a review about nanotechnology field and innovation system approach and its important in nanotechnology sector. An attempt is made to identify the dominant actors, collaborative pattern and analyze the role of and interactions between the actors and institutions.

**Design/methodology/approach:** This research used the framework of sectoral innovation system to include all possible actors and institutions involved in nanotechnology.

**Findings:** The results manifested that the characteristics of the national innovation systems are defined as significant factors in the commercialization of nanotechnology. Although the Malaysian nanotechnology innovation system still at a nascent stage, recently, it is characterized by increased nanotechnology activity regarding RandD and technology development and commercialization.

**Originality/value:** This paper tries to capture the overall actors and networks of innovation system within nanotechnology in Malaysia in order to analyze the development and commercialization of this sector.

**Keywords:** Innovation System, Nanotechnology, Malaysia

## **Introduction**

The process of exchange of fundamental science findings to proposal commercial products is complicated because both markets and technologies are increasingly complicated. Sharp development of scientific boundaries and increase of depth and width of available knowledge between courses have shared in an acceleration of technology complicatedly. Currently, even big companies face a limitation in integration of their expert capabilities and resource to develop and commercialization of technologies based on science. Some factors such as decrease of lifecycle of product and integration of some technologies in a product or service have caused

companies are increasingly dependent to external data in the shape of expert, consultancy, intellectual property and cooperative network to product and commercialize new products (Farahani, 2007).

In a specific country or technology, the key actors who play a central role in the technology diffusion process may be different. The linkage between key actors in one research domain may vary to that of another, and these different linkages may lead to more or less productive innovation systems (Lundvall, 2010, Nelson, 1993, Freeman, 1995). With regard to supporting the technology transfer process within or across countries, it can be assumed that the role of dominant actors may differ from country to country as countries technology transfer processes may be driven by government initiatives, by public institutions, and private companies.

Nanotechnology has been regarded as an emerging technology, introducing new dimensions to science and technology with the possibility of manipulating atoms and molecules at the nanometer level ('nano' means one-billionth of a meter). This emerging technology has multiple possible applications and thus affects various technological domains including advanced materials, biotechnology and pharmacy, electronics, scientific tools and industrial manufacturing processes. In the early stage of nanotechnology development and diffusion, many expected benefits have not yet been fully accomplished. However, scientists and researchers in the scientific disciplines aggressively got involved in the relevant research as a parallel way to boost nanotechnology competitiveness through academic research, and corporations have been directing their RandD activities towards the exploration of nanotech opportunities. From the scientific point of view, 'Nanotechnology can be defined as referring to materials and systems with structures and components exhibiting novel and significantly improved physical, chemical and biological properties, as well as to the phenomena and processes enabled by the ability to control the material properties on the nano-scale size' (NSTC, 2001).

The study interprets the scientific development of nanotechnology using the framework of systems of innovation (Carlsson et al., 2002, Malerba, 2002), denoting a network of actors and institutions in the public and private sectors, developing and diffusing innovative technologies. The framework is applicable on several levels (Carlsson et al., 2002)—systems of innovation can be national, regional, sectoral, or related to a specific technology which has an impact on various industries (as in the case of nanotechnology).

In sustaining the national innovation systems, the agents in particular the universities and industry play an important role. One mechanism that drives the success of any research outcome is the collaborative work undertaken by the university and industry. Industrial linkages are a valuable source of resource especially for funding as well as knowledge on technology developments for the universities, vice versa, university linkages are important for innovative activities of the firms. Besides, it is found that the collaborative research programmes significantly influence national innovation systems especially in creating and strengthening networks which are essential for breeding innovation clusters (Liyanage, 1995).

In light of the developments worldwide hailing nanotechnology as a technology with the potential of addressing a number of developing country needs, Malaysia has sought to promote nanotechnology applications in sectors that are likely to have a wide impact, and influence the course of future development in the country. However, there is a knowledge gap in terms of having an overall perspective on nanotechnology developments, players involved, and their role in shaping its trajectory in the Malaysian context from an innovation systems perspective.

This paper attempts to map and describe contours of the innovation system in Malaysia, within

nanotechnology, by delineating the actors, networks, and institutions and examining the issues and challenges posed to the innovation system in delivering nanotechnology innovation in a responsible manner. First section gives an overview about nanotechnology and innovation systems approach and its relevance and meaning in the field of nanotechnology. Second section situates nanotechnology in the innovation system in terms of its actors, frameworks, and institutions that have led to the emergence of this high technology field in Malaysia and are also currently instrumental in shaping it. Section 3 is a conclusion with an assessment of various issues and challenges posed to the Malaysian innovation system with respect to engaging with nanotechnology in a responsible way.

## **Literature Review**

### ***Terminology***

***Technological innovation:*** creation of new process and products and changing in technology.

***Innovation system:*** Innovation and the development of technology is the result of complex relevancies among active elements in a system called Innovation system.

***National Innovation system:*** nationally Innovation System is to commercialize ideas coherently and exchange information continuously to benefit and commercial production.

***Functions of innovation system:*** they are general activities rings of knowledge chain (from creating idea to commercialization and marketing). Each of functions or general activities divided in series of professional activities or functions called activities of innovation system.

### ***Overview of innovation system***

The innovation systems approach has proven useful in explaining the reasons behind varying economic performance in developing countries. The systemic understanding of the innovation process, which pays attention to the knowledge flow among interactive actors, serves as a useful 'focusing device' for elaborating effective policy to accelerate the innovation process, technology dissemination and to contribute to economic development (Iizuka, 2013).

The goal of any systems of innovation has been to generate (develop), diffuse, and utilize new technology and technological knowledge (Edquist, 2010). While there are different levels of innovation systems (IS) such as national innovation systems (Jacobsson and Johnson, 2000, Freeman, 1987, Edquist, 2010, Lundvall, 2010), regional innovation systems (Cooke et al., 1997) and sectoral innovation systems (Malerba, 2002), we focus on a Nanotechnology-specific IS (Nano-IS).

The scope of this study is how Nano-IS can be built by key actors in developing countries for successful diffusion and further development of the Nanotechnology. In fact, in the both public and private sectors, the nurturing of innovation through some policies establishment broadly emphasized on knowledge and technology transfer among multiple actors in innovation systems such as; individuals, universities, government agencies and industries. Although, technology transfer has been a weak link in establishing national and regional innovation systems because of the lack of proper regulations, policies and mechanisms, recently, it has given a considerable attention in many countries as it is a key for implementation and transfer of technological innovation to production. To promote knowledge and technology transfer, it is vital to exploit all principal agents such as; government agencies, universities, research centers, technology transfer offices, incubators, enterprises, individual scientists, and venture capital firms. It is also necessary to identify indicators of technology transfer performance such as; patenting and licensing, start-up and spin-off formation, job creation and employment growth and invention

disclosures.

In the academic literatures, there is an extensive concurrence that knowledge, learning and innovation should be considered as a key to economic development for regions and nations. Accordingly, a system of innovation should be considered as an evolutionary and interactive process between various actors in the organizations, associations, firms, government agencies, and universities. The concept of system of innovation appeared and employed for the first time in the late 1980s when Christopher Freeman's book published in 1987 (Freeman, 1987). He applied the term of the innovation system with regard to a network of institutions whose interactions create, launch, alter and diffuse new technologies both in the public and private sectors.

The different innovation system approaches can be characterized and compared by investigating how they deal with the following six dimensions (Coenen and López, 2010):

- system boundaries
- actors and networks
- institutions
- knowledge
- dynamics and
- policy implications

### ***Understanding Nanotechnology***

Nanotechnology promises to be one of the defining yet controversial innovations of the 21<sup>st</sup> century. According to 'Towards a European Strategy for Nanotechnology', nanotechnology has important implications for most, if not all industrial sectors. It particularly highlights medicine, information, energy, materials, manufacturing, instrumentation, food, water, the environment and security as key areas. However, nanotechnology is an emerging, disruptive technology in an early very exploratory creative stage. As a new emerging field, its areas of application remain not well defined but it is already clear that the same scientific breakthroughs might be used in different sectors of economy. The consequences both beneficial and adverse of technological innovations' implementation are not well explored as well as the impact of nanotechnology on other SandT domains, on the structural shifts in economy, on the NIS and other sectoral innovation systems. In addition, social values and cultural issues will have a special impact on nanotechnology development (Gaponenko, 2006). Nanotechnology promises to be one of the defining yet controversial innovations of the 21<sup>st</sup> century.

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### ***Nanotechnology Innovation System (Nano-IS)***

The innovation system approach provides a heuristic tool for studying generations of nanotechnology. As nanotechnology has a wide application potential in different economic sectors, we can say that the innovation system for nanotechnology is characterized by multiple innovation systems which are at different stages and are contingent upon actors and frameworks existing in a particular sector of application. Also, it follows that actors and networks are increasingly spread across national and sectoral boundaries.

Nanotechnology innovation system could be conceptualized as a system of innovation wherein research performed in a variety of scientific disciplines supports technological development having applications in different economic sectors. The domain of nanotechnology derives its strength from basic research in physics, chemistry, and of late, biology, and the research carried out in these fundamental disciplines that have resulted in new technologies altogether. The interfaces between these fields and technologies have innumerable applications in various economic sectors.

A generic framework of nanotechnology innovation system is provided in Figure 1. In the framework, the main systemic interactions between the actors are represented in terms of knowledge, funding, and influence flows. Of the various actors in the innovation system, academic and research organizations as well as technology developers and knowledge-sharing networks constitute an important category influencing the process of innovation. Scientific discoveries and the knowledge generated at academic and research organizations may pave the way for numerous innovations and industries. Manufacturers rely on knowledge and research organizations to overcome manufacturing problems. Also, instrumentation, lab techniques, and analytical methods that are developed in pursuit of basic research eventually find their way into the manufacturing process.

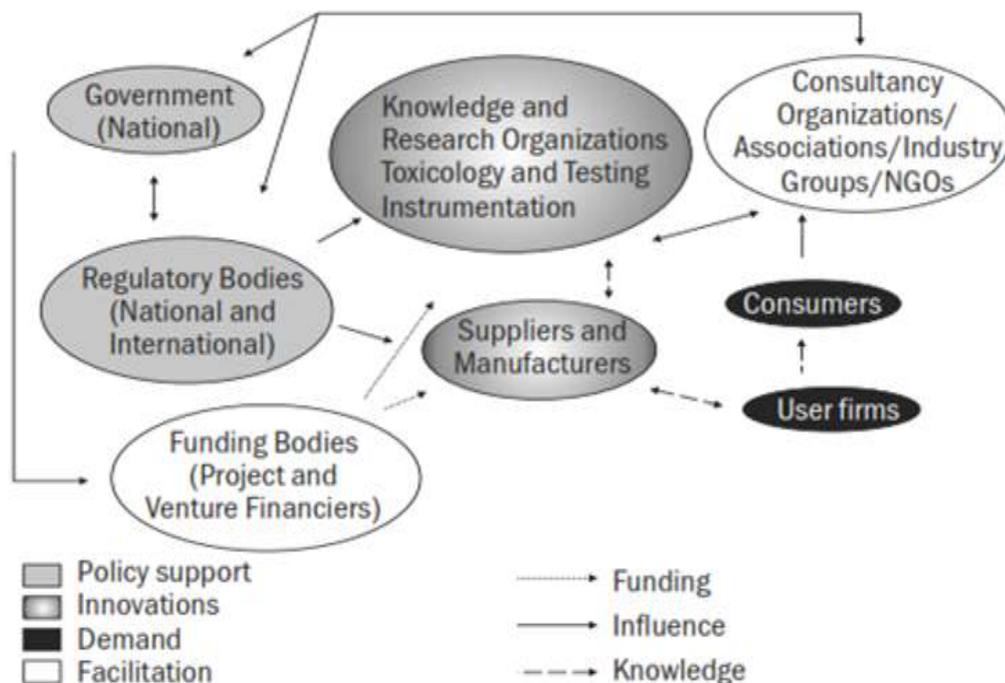


Figure1. Generic framework for nanotechnology Innovation System (Foxon et al., 2005)

Another important set of actors are the user firms and end-users/consumers. The user firm,

specialized in a variety of sectors, uses knowledge in the form of commercial products for consumers. National government and regulators, research funders and financial investors, responsible for setting the framework conditions constitute the third set of actors. National governments play an important role in promoting research through funding bodies and in regulation via regulatory agencies. Besides the national government, there are a number of organizations both at international and national level influencing Nano-innovation.

### ***Dynamics of Innovation in Nanotechnology***

The key feature of a nano-innovation system is that the process of innovation in nanotechnology would vary dramatically across sectors and product lines. In science-based industries, such as pharmaceuticals, the primary driver of innovation is breakthrough in scientific research, while in the technological field of electronics; innovation depends on product and process development. Therefore, to understand the processes and systems of innovation, it would be crucial to map the heterogeneous and distributed network of actors according to the sectors and applications.

A second key feature of nano-innovation system is that innovation in nanotechnology would require knowledge and research organizations to work in an interdisciplinary mode. This is because many research breakthroughs in nanotechnology are stimulated in the intersection of established scientific disciplines and across fundamental and applied technological research. Therefore, inter-institutional collaboration, combining scientific knowledge from various disciplines in universities and laboratories, is an important dimension of performance in the emerging field of nanotechnology. Further, collaboration between firms and public research institutions can play an important role in advancing nanotechnology by marrying public sector research capabilities with financial resources of the private sector.

Another characteristic of the nano-innovation system is that the cross- sectoral application potential of nanotechnology would require firms, depending on their capability, to take decisions on whether to focus on one technology or market structure or rely on cross boundaries between different nano-scale technologies. In this regard, according to Meyer (2006), firms will have to undertake strategic decisions on whether to:

- Occupy a technological niche and apply their proprietary technology to one specific application area
- Build on a base in several nanotechnology areas, and by integrating technology and expertise in more than one nanotechnology area
- Develop solutions for one area of application
- Pursue an approach that champions customizing expertise and technology to a range of different application areas
- Combine expertise in more than one nanotechnology with more than one application area.

Thus, in case of nanotechnology because of its nature and characteristics, a greater degree of interactions between firms and their institutional environments have been foreseen and suggested for successful technology development and diffusion. The institutional environment influence firms' performance by defining its interaction pattern with other actors, such as suppliers and end-users, and the differences in these environments influence substantially the rate and direction of innovation across geographical boundaries and sectors.

## Emerging Innovation System of Nanotechnology in Malaysia

### *Mapping the system*

This section maps the various actors, their interaction patterns and the evolution of institutions defining the trajectory of nanotechnology in Malaysia.

### *Knowledge and technology base*

In the Eight Malaysian Plan (8MP), the Malaysian government started the research and development in nanotechnology field in 2001. It is defined as a Strategic Research (SR) program under Intensification of Research Priority Areas (IRPA).

The Malaysian government has achieved serious efforts to develop the nanotechnology sector. In the Third Industrial Master Plan (IMP3), the nanotechnology sector has defined as a new emerging technology. According to IMP3, MOSTI has provided RM868 million for research and development in emerging technologies such as biotechnology, nanotechnology, advanced manufacturing, etc. on the other hand, there are still disadvantages that prevent to achieve the requested aims. In case of nanotechnology, the current development still experiences from some drawbacks such as:

- Linking between different nanotechnology projects
- Lacking the main infrastructure to support nanotechnology projects
- No comprehensive plan to improve nanotechnology industries
- No clear road-map to support the research and development in nanotechnology sector
- Lacking attempts to increase knowledge of nanotechnology
- Table 1 summarizes the strengths, gaps, opportunities and risks of the nanotechnology sector.

Table 1: Strengths, weaknesses, opportunities and threats

<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> <li>• Government development policies towards nanotechnology</li> <li>• Government policies in various economic sectors that can benefits from nanotechnology</li> <li>• Political and economical stability and national unity</li> <li>• Availability of research bases</li> </ul>	<ul style="list-style-type: none"> <li>• No dedicated policy for nanotechnology</li> <li>• Need for short-term and long-term human resource planning</li> <li>• Lack of private sector participation and investment</li> <li>• Lack of facilities</li> <li>• No world class companies to raise standards</li> </ul>
<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none"> <li>• Rapid global development in nanotechnology</li> <li>• Opportunities in nanotechnology outsourcing services</li> <li>• Enhancing products in agriculture, biotechnology, medicine, energy and environment</li> <li>• Potential for technology transfer to provide business opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Continued fragmentation of efforts in research</li> <li>• Potential public perception on risks of the uses of nanotechnology</li> <li>• Young researchers lost via brain drain</li> <li>• China, India are ahead in nanotechnology RandD and businesses</li> <li>• New nanotech materials/ products threaten Malaysia's current major exports.</li> </ul>

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>• Better explanation of innovation at the national level through easier access to venture capitals</li></ul> |  |
|--|--|

Since the Seventh Malaysia Plan (7MP), the Malaysian government has started its plan to enhance the capabilities of scientists in order to contribute to the national development in science and technology (SandT). From the latest database, it has been found that about 150 local scientists are involved in different areas of nanotechnology field. However, there has neither been any proof nor confirmation to validate this statistic. The Intensification of Priority Research Areas (IRPA) program, which is included in the Eighth Malaysian Plan (8MP), had identified that the nanotechnology sector is considered as one of the 14 main research fields, and classified under “Strategic Research” (SR). During (8MP), SR has received an even distribution of 35% or RM 350 million of the total IRPA budget which was RM1 billion. The SR projects are for a maximum period of 60 months, with potential for enhancing future competitive socioeconomic development or new breakthroughs with commercial potential. Additionally, the projects must be multi-disciplinary, and have industrial linkages, with potential for commercialization.

At 8MP, RM160 million has been granted by MOSTI to support the research in the nanotechnology field. The inclusion of nanotechnology as a priority area under IRPA for 8 and 9 MP is timely, and is poised to position the country in the long term to nurture a Nano science research culture among researchers, and develop world class nanotechnology laboratories in Malaysia. The short term strategy of Malaysia is geared towards identifying researchers in various areas of nanotechnology with specific expertise; upgrading and equipping nanotechnology laboratories with state-of-the-art facilities; and to prepare a comprehensive human resource development programme for producing nanotechnologists. MOSTI is now entrusted to spearhead the planning and development of the National Nanotechnology Initiative (NNI).

In October of 2009, during a meeting of Malaysia’s National Innovation Council, nanotechnology was identified as one of the new growth engines for the country’s New Economic Model (NEM)—which led to the formation of the National Nanotechnology Directorate (NND) in 2010, under the auspices of the Ministry of Science, Technology and Innovation (MOSTI).

These efforts led to recognition of the need for a nanotechnology commercialization agency—and Nano Malaysia Berhad was the result. Incorporated in 2011, the organization functions in alignment with Agensi Inovasi Malaysia’s (AIM) initiatives, and under the auspices of MOSTI as a business entity that focuses various commercialization activities, including:

- Commercialization of Nanotechnology Research and Development
- Industrialization of Nanotechnology
- Facilitation of Investments in Nanotechnology
- Human Capital Development in Nanotechnology
- Its focus is to “jumpstart” nanotechnology development in four key sectors:
  - Food and Agriculture
  - Energy and Environment

- Wellness, Medical and Healthcare
- Electronics, Devices and Systems

**Actors and stock holders of nanotechnology**

**RandD Institutions**

Public Malaysian universities and research institutes are considered as the main organizations that are responsible for carrying out the research in the nanotechnology field. In the 8MP, the Malaysian government has summed up to RM124.3 million to support the investment in the RandD sector. Nevertheless, the total amount has not been specifically reserved to be used to develop the nanotechnology field. In the 8MP, the Malaysian government has originated The Malaysia’s National Nanotechnology Initiative (NNI). As defined by the 8MP, the NNI organization has various duties composing the fortification of the world class research institutions, investment in nanotechnology research, competitive business environment, a stable learning and training system and suitable infrastructure. However, these aims have not yet totally been achieved, but more attempts are still ongoing. While, there is a general linkage between the basic research and the commercial development of nanotechnologies, Motoyama and Eisler (2011) declared that it is a hard task to link the national research made in basic science with national economic productivity. In fact, Malaysia has a series of research centers in key areas such as Nano electronics, Nano biotechnology and nanomaterial science.

The Nano Malaysia Centers of Excellence (CoEs) support nanotechnology RandD and provide shared facilities and human capital training. The CoEs as in Figure 2 are:

- Institute of Nano electronic and Engineering (INEEE), UNIMAP
- Centre for Innovative Nanostructures and Nano devices (COINN), UTP
- Institute of Micro Engineering and Nanoelectronics (IMEN), UKM
- Enabling Science and Nanotechnology Research, IbnuSina Institute for Fundamental Science Studies (IIS), UTM
- NEMS/MEMS Research Laboratory, MIMOS

These user facilities are generally available both to local-based researchers and industry players.

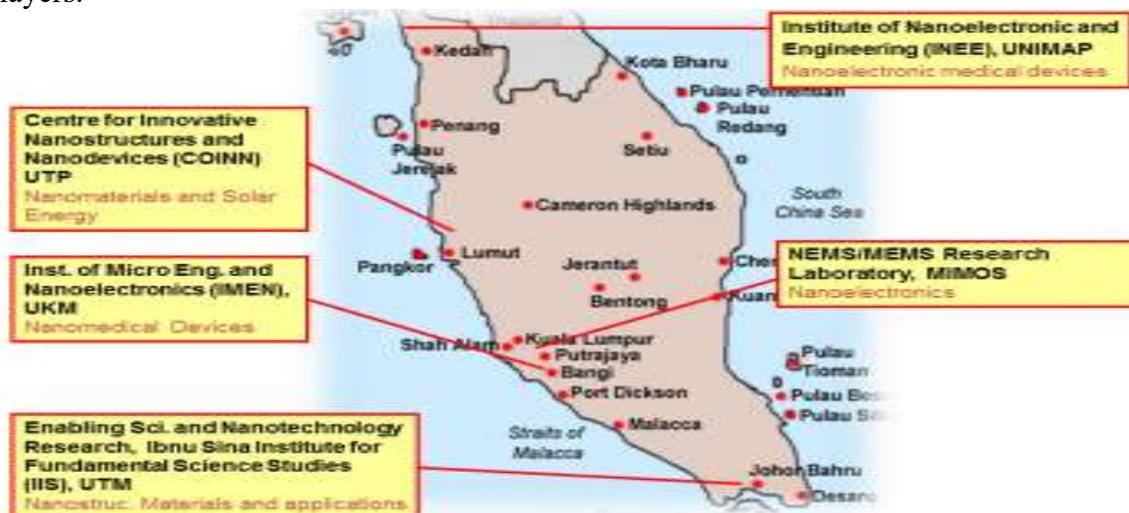


Figure 2: The NanoMalaysia Centres of Excellence (CoEs)

**Industry**

Although nanotechnology is at an emergent stage, the presence of a small number of suppliers, manufacturers, and user firms across various sectors in which nanotechnology has found application potential has led us to assume that there exists an emerging nanotechnology innovation system in Malaysia. It could be emphasized herein that the growth and trajectory of the innovation system of nanotechnology in Malaysia is sector-dependent and would thus require sector-specific policy interventions.

The nanotechnology industry comprises a group of firms involved in bringing nanotechnology processes, materials, tools, and devices into the market (Miller et al., 2004). Different types of firms co-exist actively working in the area of nanotechnology in Malaysia. On one hand, there are start-ups which focus mainly on nanotechnology; on the other hand, there are certain established companies that have tried to engage with nanotechnology either to improve their existing product line or to explore businesses for the next generation. Table 2 depicts the Malaysia Nano-centers MNCs that having nanotechnology activities at group level.

Table 2: MNCs in Malaysia Having Nanotechnology Activities at Group Level

Industry Category	Number of Company	Having Nanotechnology within the Group
Energy and Utilities	4	3
Food and Beverages	16	3
Oil, Gas and Petrochemicals	22	6
Chemical and Minerals	26	6
Electrical and Electronics	38	23
ICT and Communications	6	2
Total	112	43

In Malaysia, many companies have started their business in the nanotechnology fields. Some of them are listed below:

- Nano Pac: It is catalyst Energy and Environmental Engineering Company. It Design Office includes expertise engineers to provide support, design, test, and certify in all nanotechnology fields.
- Nano Malaysia Berhad: It was established in 2011 to act as a business entity to support commercialization of nanotechnology research.
- Nano Silver Manufacturing Sdn Bhd (NSM): It was founded in 2004, as a High Technology Company which focuses on RandD and commercialization of nanotechnology products.

**Nanotechnology organizations**

Malaysia has some organizations and networks supporting nanosciences and exploring the future of nanotechnology. A brief introduction to these nanotechnology-related organizations in Malaysia is summarized as following:

- Malaysia Nanotechnology Association (MNA): It is responsible for implementing NND, including driving the National Nanotechnology Initiative and organizing Nano-events. In other words, MNA is responsible for developing policies to support nanotechnology research, and supporting the current COE by providing new research facilities as well as developing the expertise in the nanotechnology field.
- National Nanotechnology Initiative (NNI): It is responsible for developing nanotechnology sector in order to achieve the viable advantages from the science, industry and the economy.

### ***Nanotechnology programs and initiatives***

Many universities in Malaysia offer multiple programs to pursue undergraduate and postgraduate and research degrees in the nanotechnology field.

- University of Nottingham: It has a nanotechnology centre, namely Centre for Nanotechnology and Advanced Materials. The researchers in this centre are interested in developing new materials and modifying the existing ones to achieve better performance.
- University of Malaya (UM): It has a nanotechnology centre called Centre for Research in Nanotechnology and Catalysis. This centre is responsible for doing the research in nanosciences field.
- University Putra Malaysia (UPM): It has Master and Doctorate programs in nano-materials and nanotechnology.
- Malaysia Multimedia University (MMU): It offers an undergraduate degree in Electronic Engineering majoring in Nanotechnology (Nano-Engineering).
- Malaysia University of Science and Technology: It has bachelor degree in Nano-science and Nano-engineering.

### ***Networks***

For a tightly knit relationship between science, technology, and economic performance, partnerships and networking among producers and users of knowledge assume greater significance. In the context of nanotechnology, its knowledge intensiveness, interdisciplinary character, complexity of technology, uncertainty and associated risks, high cost of instrumentation, lack of requisite expertise, and an inability to capture adequate returns signifies the importance of collaboration and networking among various stakeholders.

All these have ramifications on how innovation in nanotechnology is carried out and diffused. One mechanism that drives the success of any research outcome is the collaborative work undertaken by the university and industry. Besides, it is found that the collaborative research programmes significantly influence national innovation systems especially in creating and strengthening networks which are essential for breeding innovation clusters (Liyanage, 1995). In fact, Malaysia is now focusing on bringing the research results to the marketplace. Emphasis has been put on innovation and technology development and commercialization as a strategic means of enhancing economic performance. The task of bringing research results to the marketplace has been handed over to the universities, government research institutes (GRIs) and industries with a focus upon Small Medium Enterprises (SMEs), given that SMEs account for 95 per cent of businesses in Malaysia (Govindaraju and Wong, 2011).

Serious efforts in the commercialization of IP have actually become a part of the Government's overall plan for sustainable development with the launching of the Sixth Malaysia Plan. Universities have been encouraged to collaborate with industry and to develop initiatives to support university-industry technology commercialization UITC. The Government also introduced various types of incentives to encourage private involvement in RandD activities as well as to promote market-oriented RandD and technology development projects.

Apart from various grant schemes, the Government has also established various institutions to facilitate commercialization activities and to provide assistance in obtaining financial resources. Furthermore; the private sector has been encouraged to play a more active part in research and innovation.

Furthermore, as one of its efforts to increase commercialization activities in universities, the

Government has encouraged all universities to set up a technology transfer office (TTO) to manage the commercialization of their research outputs. Many universities have, accordingly, established a TTO in order to encourage university researchers to consider commercialization and to support them through the commercialization process. The emergence of these intermediaries has been central in bringing university research to marketplace. The effort appears to be successful, given that there has been a trend for an increasing number of patent applications across the universities since the establishment of the TTOs.

### ***Nanofund***

Based on the data produced by MOSTI in 2012, it is manifest that the whole amount of Nano-fund that has been approved to support Nano-devices projects significantly exceeds the amount approved and for Nano-material projects. An entire amount of Nano-fund closing to RM7 million was reserved for twenty (20) nanotechnology projects in the year 2011. These projects came from ten (10) universities and Center of Excellences (CoEs) in Malaysia. Specifically, 3 nano-projects have been approved to support the research work at UPM, UKM and UTM universities, while maximum two nano-projects have been allocated to support the nanotechnology research at UniMAP, MIMOS, UiTM, UTP, IMU, MARDI and UM. It is observed that not many researchers and scientists are involved in the field of nanotechnology based on the limited number of the nanotechnology-oriented projects.

### **Dynamic of the Emerging Nanotechnology Innovation System**

It would be too early to say that there exist innovation systems for nanotechnology in Malaysia. Nanotechnology activity in Malaysia at the industry level is at a relatively lower level and there is a concentration of nanotechnology-related products in only few sectors, such as health. However, the research and experimental development activity in this emerging domain is diverse and a relatively strong knowledge base is evolving. Also, a lot of emphasis is being put on translational research and forging partnerships between industry, academia, and government.

### **Conclusion**

To overcome the gap between the basic and applied research in nanotechnology, the researchers shall begin entrepreneur orientation in universities. For this reason, increasing the number of expertise in nanotechnology is required. Although, there is a general linkage between the basic research and the commercial development of nanotechnologies, the level of growing outputs has been slow into the business field. Although still at a nascent stage, the Malaysian nanotechnology innovation system in recent years is characterized by increased nanotechnology activity in terms of RandD and technology development and commercialization. Public sector RandD institutions are at the helm in the nanotechnology innovation landscape in Malaysia. Furthermore, the innovation system for nanotechnology at the moment is still characterized by a focus on upstream governance measures with an emphasis on support for research and knowledge accumulation, developing the skill base and research infrastructure. Moreover, these activities are being promoted at a more generic level without focusing on any particular sector or area of application, in contrast to countries such as China which has clear strategies and focus areas of applications.

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# Corporate Sustainability Practices and Firm's Financial Performance: The Driving Force of Integrated Management System

**Muhammad Zahid\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*E-mail: mianmz1@yahoo.com*

**Zulkipli Ghazali**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*\*Corresponding author*

## **Abstract**

**Purpose:** This paper investigated the effect of the integrated management system (IMS) in pushing corporate sustainability practices (CSP) and its relation with firm's financial performance in Malaysia.

**Design/methodology/approach:** For the investigation, the paper employed Ordinary Least Square (OLS) to a panel data composed of 878 firm-year observations of Malaysian listed companies from 2011 to 2013. The selection of study period considered the implementation of the 10th Malaysian Plan (2011-2015) that addressed sustainability practices in the country.

**Findings:** The results show significant positive relation among integrated management system (IMS), CS practices and firms financial performance. The results further revealed the novel link that CS practices partially mediate the relationship between IMS and firms financial performance.

**Research limitations/implications:** The new findings provide important insights for all the stakeholders like government practitioners, academia, researchers, banks, Bursa Malaysia, security commission and public listed companies (PLC's).

**Originality/value:** The paper recommends that IMS has an important role in the success of CS practices in the country.

**Keywords:** IMS, Corporate Sustainability Practices, Firm's Financial Performance, Malaysia

## **Introduction**

Sustainable development (SD) coined by the Brundtland Commission Report with most cited definitions as "meets the needs of the present without compromising the ability of the future generations to meet their own needs" (WCED, 1987). Since the concept of SD has been shifted to business practices and posed many challenges and pressure among business organizations to change the way of doing business into more sustainable practices, and to report on more than just economic performance (Delai and Takahashi, 2011). These reports are gaining much interest and prominence among the stakeholders around the world. Most of the researchers and prominent research reports documented that corporate sustainability practices (CSP) and reporting are showing upward trends in developed economies (KPMG, 2013; Lozano and

Huisingh, 2011). However, some of the researchers concluded that CSP is inherited confusions and still the reporting is in its infancy stages particularly in developing countries (Asif, Searcy, Santos, and Kensah, 2013; UNGC, 2013). In developing countries such as Malaysia, CSP is now an emerging trend (Amran, Zain, Sulaiman, Sarker, and Ooi, 2013). Nevertheless, many studies reported that CSP is still considered to be in its infancy stage in Malaysia (Atan and Razali, 2013; Zahid and Ghazali, 2015a). The previous studies also indicate that the awareness of CSP is still low in Malaysia, despite the government efforts to enhance CSP and sustainable development for several years (Othman and Ameer, 2010).

Linking this problem the companies particularly situated in Asian region know little about how to implement and integrate CSP within their day to day business activities (Ameer and Othman, 2011; Said, Zainuddin, and Haron, 2009). They further reported that the management of business firms are thinking that CSP and its related strategies have a negative impact on firm's financial performance and thus reluctant to adopt these practices and related strategies (Said et al., 2009). As reported in the previous studies since many decades the relationship between CSP and firms financial performance (known as the business case of CSP) is unanswered (Lys, Naughton, and Wang, 2015). Therefore, this study further enhance the business case of CSP by investigating the impact of integrated strategies (these integrated strategies are consistent stakeholder engagement, top management commitment, CSP strategy, reporting manuals, CSP structure and link staff which are jointly known as integrated management system (IMS) or sustainability management system (SMS) see literature review and hypothesis development for further detail) on CSP and firms financial performance. Therefore, the above reasons motivate the study to investigate the impact of integrated strategies for CSP and firm's financial performance in Malaysian PLC's. The objectives of the study are reflected in the following key research questions:

RQ 1: What is the impact of IMS on CSP and firm's financial performance?

RQ 2: What is the impact of CS on firm's financial performance?

RQ 3: What is the mediating role of CSP between the relationship of IMS and firm's financial performance?

## **Literature Review**

### ***Corporate Sustainability Practices in Malaysia***

Most of the studies have been reported that CS practices and reporting are very low among Malaysian PLC's and the process of adopting these practices are still in its infancy stages (Zahid and Ghazali, 2015b). Moreover, some of authors further noted that Malaysian PLC's are not consistent with their extent, nature and quality of CS practices and reporting made over time (Nazli, Ahmad, Salat, and Haraf, 2013). A study based on content analysis of largest 250 PLC's based on market capitalization, concluded that CS practices had shown some improvements over time in the past few years. However, the overall progress is still lax and has embryonic stage in comparison with some developed countries situated in western world. Moreover, these disclosures were declarative and non-qualitative in nature (Thompson and Zakria, 2004). Refer to the environmental sustainability the previous findings postulate that this dimension is addressing poorly and with minimal disclosures in comparison with overall disclosures. Moreover, companies only followed those disclosures related to compliance only. Studies also identified that the customers and supplier's concerns are the least priority (Nazli, Ahmad, and Sulaiman, 2004). As conclusion studies related to CS practices and reporting in

Malaysia are limited with inconclusive results. Consequently, CS practices and reporting in Malaysia remains low (Amran et al., 2013), this could be due to less intensive effort or motivation on the part of top management to ensure the implementation of CS practices its reporting (Said et al., 2009). In Malaysia CS practices needs further efforts to promote its importance and promoting strategies (Arshad, Mansor, and Othman, 2012; Darus, 2012; Eltayeb, Zailani, and Ramayah, 2011; Wang and Sarkis, 2013).

### ***Integrated Management System and CS Practices***

Several frameworks and indicators have been developed to assess the implementation of CS practices, however, it has been concluded that there is no consensus on a common set of criteria (Delai and Takahashi, 2011). Several studies identified rigorous steps for the implementation of CS. These steps were initially divided into two categories: internal and external. The internal category is dealing with the corporate mission, strategies, values, culture and desired business behavior; while the external category focuses on dealing with social or external stakeholder issues like social accountability programs. The authors concluded that these two approaches as a balanced tool for planning and integrating CS practices within the business firm. Therefore, to make the CS practice implementation process productive the organization must have a management system to integrate the above two categories (Esquer-Peralta, Velazquez, and Munguia, 2008). A management system can be defined as “*management system is best viewed as an organizing framework that should be continually monitored and periodically reviewed. It provides effective direction for an organization’s process management activities in response to changing internal and external factors.*” (Noble, 2000)

Therefore, this tendency emerged the new idea of a single management system (MS) to increase awareness and implementation of CS practices within the organization which is known as a sustainability management system (SMS) (Esquer-Peralta et al., 2008), or integrated management system (IMS) [These all carries the same objectives and almost the same dimensions (Asif, Searcy, Zutshi, and Ahmad, 2011; Asif, Searcy, Zutshi, and Fisscher, 2013). Though there is no universally accepted definition for IMS but it is generally agreed that an IMS integrates goals, processes, and resources (Willborn, 1998). An integrated management system (IMS) approach is designed around the engagement and needs of stakeholders (Rocha, Searcy, and Karapetrovic, 2007). Another definition described as “integrated management system is the set of interconnected processes that uses human resources, materials, information, infrastructural, and financial resources for achievement sustainability strategies” (Asif et al., 2011). On the basis of previous literature following are the main components of IMS, including stakeholder engagement, top management commitment, CS strategy, reporting manuals, CS structure and link staff (Asif, Searcy, Santos, et al., 2013; Klettner, Clarke, and Boersma, 2014). Each of the components can be explained as follows.

### ***Top Management/Leadership Commitment***

Top management commitment is considered a strong internal political force that can foster corporate sustainability within the organization. Further found that the same notion in the stakeholder theory that the management has its role to ensure the stakes of all the stakeholders by managing and integrating into their business activities (Asif, Searcy, Zutshi, et al., 2013; Freeman, 1984).

### ***CS Oriented Strategy***

The postulation of legitimacy theory endorses that high pressure on firms in order to ensure the legitimacy of their organizations and license to operate they are intended to define proactive strategies which imply and ensure a high level of sustainability practices (Wagner, 2011). Moreover, these practices boost with the presence of proactive management strategies process/practices and availability of management staff that ensures its implementation (Fiksel and Frederickson, 2012).

### ***The Stakeholders Engagement***

The stakeholders can be defined as “any group or individual who can affect or is affected by the corporation” (Freeman, 1984). The stakeholder theory proposed that corporation requires operating in such a way that maximizes the social welfare of all the stakeholders. These stakeholders include shareholders, customers, employees, suppliers, ecologists and communities in which the corporations (Céspedes-Lorente, Burgos-Jiménez, and Álvarez-Gil, 2003).

### ***Sustainability Reporting Guidelines and Manuals***

Business firms are increasingly held responsible for the impact of their activities on society (Hahn, 2012). However, it is often very difficult for the stakeholders to assess the actual sustainability practices of a firm. For the reason to reduce information asymmetries between the firm’s and their stakeholders, firms are required to communicate their behavior and to comply with the norms of corporate sustainability transparency (Philippe and Durand, 2011). Corporate sustainability reports are considered and suppose to provide a complete and balanced picture of firm’s sustainability performance.

### ***CS Management Structure/Team***

In order to build and make positive contributions toward sustainability practices and reporting, firms must establish human resource management practices which support their desired strategy and core values (Whittington and Galpin, 2010). Companies have formal processes, performance measurement, and rewards system to measure internal and external accountability for stakeholders and sustainability practices (Asif et al., 2011; Modrak and Dima, 2010).

### ***CS and Financial Performance***

The three dimensions (economic, environmental and social) of corporate sustainability are recommended and could be followed simultaneously. The balancing of these three dimensions considered the better performance for CS practices of an organization (Gupta and Kumar, 2013). The stakeholder theory supports that there is a positive relationship between CS practices and firm’s financial performance (Donaldson, Preston, and Preston, 1995). Stakeholder theory postulates that towards engagement of CS practices firms must take into account the interest of multiple stakeholders and not just those of shareholders when making business decisions (Donaldson et al., 1995; Freeman, 1984). The linkage between CS practices and corporate financial performance has been widely and extensively examined in the management and financial economics literature with no conclusive and consistent results (Lee, Singal, and Kang, 2013). Since many decades scholars have found a positive, a negative, a curvilinear, and even a zero effect of CS practices and financial performance. Most of the researchers concluded that the awareness of CS practices is at stake, that’s why there is a weak

positive relationship between CS practices and financial performance (Janggu, Joseph, and Madi, 2007). To support the argument the authors further reported that CS practices are an important factor to enhance firm's financial performance by stressing on a multiplicity of stakeholders (Donaldson et al., 1995; Peloza, 2009). However, CS practices and its related strategies can be a buzzword and daunting task for Asian corporate leaders to exercise a real corporate sustainability agenda aligned with corporate core strategies. Many of them believe that financial performance is a top priority in any business scenario (Janggu et al., 2007). At the core of CS practices and strategies it is claimed that it increases firms financial performance and thus the companies with CS leadership should demonstrate superior financial performance (Colwell and Joshi, 2013).

Based on the above discussions and to answer the research questions it is hypothesized that:

H1: There is a positive impact of IMS on CSP.

H2: There is a positive impact of IMS on firm's financial performance.

H3: There is a positive impact of CS Practices on firm's financial performance.

H4: There is a mediating role of CSP in the relationship of IMS and Firm's Financial Performance.

### **Research Design**

We defined our sample by the firms registered on Bursa Malaysia (The Malaysian Stock Exchange) during 2011-2013. The study selected 878 companies on a random basis as a static sample for three years 2011-2013. The selection of study period considered the implementation of the 10th Malaysian Plan (2011-2015) that addressed sustainability practices in the country. This sample size consisting of 12 sectors listed on Bursa Malaysia. We used a stratified random sampling technique for company's selections. The study has utilized company annual reports, CSR and sustainability reports for data collection using the content analysis procedure. Content analysis procedure is the most widely used method for identifying and recording report based disclosures (Boesso and Kumar, 2007). Content analysis could be recorded using unweighted and weighted scoring methods. The unweighted content analysis recording method considered to be the more reliable (Day and Woodward, 2009). The current study has used the unweighted content analysis procedure. The variables are measures on the basis of previous studies as, CS reporting index (Zahid and Ghazali, 2015b), IMS (based on above stated five components including top management/leadership commitment, CS oriented strategy, the stakeholder's engagement, CS reporting guidelines and manuals and CS management structure/team) (Klettner et al., 2014). For financial performance the study used Earnings before Income Tax Depreciation and Amortization (EBITDA) as measurement. EBITDA is an accounting-based measure which is considered as less subjective from the manager's discretionary policies than other accounting based measures. EBITDA provides better and actual financial performance of a company (Michelon et al., 2013; Orlitzky, Schmidt, and Rynes, 2003). The study also used control variables including firm's age and firm size (Allouche and Laroche, 2005; Michelon, Boesso, and Kumar, 2013). Firm age was measured using the actual age of firm after the registration on Bursa Malaysia. Whereas, firm size is measured using the natural logarithm of firm's total assets.

### **Empirical Results**

Table 1 shows the total sample size of companies in 12 different industries. Descriptive analysis of the sample is presented in Table 2.

Table 1 Sample Size (Industry wise)

#	Sectors	No. of Co.'s	
1	Consumer Products	173	
2	Industrial Products	205	
3	Construction	45	
4	Trading Service	198	
5	Finance	32	
6	Infrastructure Projects	16	
7	Hotels	12	
8	Properties	89	
9	Plantation	48	
10	Mining	3	
11	Technology	33	
12	Real Estate	24	
	Total Sample Size	878	

Table 2 shows minimum and maximum performance, means and standard deviations for corporate sustainability practices, firm's financial performance, IMS and related control variables.

Table 2 Descriptive Statistics and Correlation Matrix

	Min	Max	Mean	S.D	(1)	(2)	(3)	(4)	(5)
EBITDA (1)	-.30	8.96	4.51	1.54	1				
CS (2)	6.00	43.0	20.16	6.83	.497**	1			
Firms Age (3)	1	41	15.94	8.03	.163**	.173**	1		
Size (4)	3.54	8.12	5.83	0.75	.769**	.509**	.246**	1	
IMS (5)	1.00	05	2.63	1.75	.468**	.695**	.109**	.458**	1

\*\* . Correlation is significant at the 0.01 level (2-tailed), \* . at the 0.05 level (2-tailed)

Table 2 also shows the magnitude of correlation coefficient that all the variables are statistically significant and there is no existence of multicollinearity. Hence all the variables are statistically positively correlated. For some of the control and dependent variables we applied a natural logarithmic transformation to meet the assumption of normality.

For the hypotheses (H1-H4) testing we run the regression model to reflect our earlier discussions regarding hypotheses developed. The results of multiple regression analysis reported in Table 3 from Model 1 to 3.

The results of Model 1 report the relationship between IMS and firm's CS practices. The results of Table III report that there is a positive impact of IMS on CS practices. The coefficient of IMS shows positive and significant impact of 0.253 at (p<0.001). The findings indicate that IMS has a positive impact on CS practices, which means that IMS increases CS practices in Malaysia. Hence support H1 of the study. All the control variables of the model are statistically significant. Model 1 produces F-statistic of 68.08 (p<0.001) and R2 value of 0.558. The R2 value suggests that 55.8% of all the variables contribute to the determination of corporate sustainability practices. The results of Model 2 show that the relationship between IMS and firm's financial performance. The results of Table 4.13 report that there is a positive impact of

IMS on firm's financial performance. The coefficient of IMS shows the positive and significant impact of 0.029 at ( $p < 0.001$ ).

Table 3 Regression Results

	Model 1 (IMS>CS)	Model 2 IMS>FP	Model 3 CS>FP
IMS	0.253*** (0.010)	0.029*** (0.002)	0.084*** (0.006)
Firm Size	0.113*** (0.025)	0.077*** (0.007)	0.071*** (0.006)
Firm Age	0.052* 0.021	0.009 0.006	0.005* 0.005
Constant	2.15 1.98	2.45*** 0.514	2.50*** 0.505
Year Dummies	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes
Observations	878	878	878
R-squared	0.558	0.417	0.438
F-value	68.08	38.46	41.91
Prob >F	0.0000	0.0000	0.0000

Standard errors in parentheses \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

The findings indicate that IMS has a positive impact on firm's financial performance, which means that IMS increases firm's financial performance in Malaysia. Hence support H2 of the study. All the control variables of the model are statistically significant except firm age. Model 2 produces F-statistic of 38.46 ( $p < 0.001$ ) and an R2 value of 0.417. The R2 value suggests that 41.7% of all the variables contribute to the determination of firm's financial performance. The results of Model 3 report that the relationship between CS and firm's financial performance. The results of Table 4.13 report that there is a positive impact of CS on firm's financial performance. The coefficient of CS shows the positive and significant impact of 0.084 at ( $p < 0.001$ ). The findings indicate that CS has a positive impact on firm's financial performance, which means that CS increases firm's financial performance in Malaysia. Hence support H3 of the study. All the control variables of the model are statistically significant. Model 2 produces F-statistic of 41.91 ( $p < 0.001$ ) and an R2 value of 0.438. The R2 value suggests that 43.8% of all the variables contribute to the determination of firm's financial performance. All the values reported by the R2 are reasonable for social science and studies related to CS reporting, particularly in developing countries context (Ameer and Othman, 2011; Amran and Devi, 2008). All the Models (1-3) opposes the strong belief that firm's size and firm's age have a significant impact on firm's IMS, CS and firm's financial performance.

Moving toward H4 of the study, which predict that CS practices mediate between the relationship of IMS and firm's financial performance. For hypothesis testing the mediation process recommended by the authors K. J. Preacher and Hayes (2004) were used. This process is based on the three step approach proposed by the Baron and Kenny (1986).

For testing of mediation the authors (Baron and Kenny, 1986; Hayes and Preacher, 2010) recommend the following conditions to be satisfied:

1. Independent variable has significant effect on the mediating variable, which is known as path (a);
2. The mediator has a significant effect on the dependent variable, which is known as path (b);
3. Independent variable has significant effect on the dependent variable, which is known as path (c); and
4. The effect of independent variable on the dependent variable may change after the effect of the mediator are controlled, which is known as the path (c'). In this step if the relationship of independent and dependent variable becomes insignificant it considered as full mediation or otherwise it is known as partial mediation (Baron and Kenny, 1986). If some of the above conditions are not satisfied, then there is no mediation (Baron and Kenny, 1986).

According to the results of Table IV, step 1 for path (a) is carried out to test the impact of independent variable (IMS) on mediating variable (CS practices) which is supported that there is a significant impact of IMS on CS practices ( $\beta = 0.273$ ,  $p < 0.001$ ) and thus the first condition of mediation is met. To ascertain the second condition of mediation for path (b) to test the effect of mediating variable (CS practices) on dependent variable (firms financial performance) which is supported that there is a significant impact of CS practices on firms financial performance ( $\beta = 0.075$ ,  $p < 0.001$ ) and thus the second condition of mediation is met.

Moved towards the third condition of mediation for path (c) to test the effect independent variable (IMS) on dependent variable (firms financial performance) which is supported that there is a significant impact of IMS on firms financial performance ( $\beta = 0.041$ ,  $p < 0.001$ ) and thus the third condition of mediation is met.

For the fourth condition of mediation for path (c') to test the effect of independent variable (IMS) on dependent variable firm's financial performance after controlling the effect of mediator (CS practices) which is supported that the relationship is still significant impact of IMS on firms financial performance after the controlling of CS practices ( $\beta = 0.021$ ,  $p < 0.001$ ) and thus the forth condition of mediation is partially met.

For further testing of mediation the study applied Sobel test for indirect effect. Sobel test was first proposed by Sobel in 1982 to formally test the condition of mediation. This test is most commonly used additionally to attest the magnitude of mediation. Sobel test judges the indirect effect of independent variable on dependent variable through a mediating variable. Sobel test is a complementing the causal step approach proposed by Baron and Kenny (1986). In STATA 13.0 the Sobel test is in line with the indirect effect for deciding a mediation effect suggested by the authors (K. J. Preacher and Hayes, 2004; Kristopher J. Preacher, Rucker, and Hayes, 2007; Sobel, 1982).

Table 4 Mediation Analysis

A-B (a)		B-C (b)		A-C (c)		Path (c')	
Beta	RSq	Beta	RSq	Beta	RSq	Beta	RSq
0.273***		0.075***		0.041***		0.021***	
(0.009)	0.485	(0.009)	0.278	(0.002)	0.221	(0.003)	0.278
LL 2.54 – UL 2.91		LL .057 – UL .093		LL.363 – UL .466		LL .141– UL .279	

LL= Lower level and UL= Upper level 95% bootstrap confidence intervals, \*\*\* $p < 0.001$ . N=878

The results of the Sobel test indicated that CS practices mediate between the relationship of IMS and firms financial performance ( $\beta= 0.020$ ,  $p < 0.001$ , LL 0.015 – UL 0.025). The value of  $R^2=0.278$  significantly improved after the CS practices mediating the relationship of IMS with firm's financial performance. Hence, it is concluded that CS practices partially mediates the relationship between IMS and firm's financial performance using (EBITDA) which is partially supported H4.

### Conclusions and Recommendations

This study empirically investigated the impact of integrated strategies measured by the IMS for CS practices and firms financial performance (EBITDA). The results found that these strategies are very important for CS practices implementation in Malaysian PLC's. Further, confirming that in order to flourish and boost CS practices needs to be integrated strategies. The IMS is contributing significantly in promoting CS practices and firms financial performances. Our findings endorsed the work of (Klettner et al., 2014) that CS practices and reporting should be implemented in a better way if all the integrated practices are adopted properly which ultimately increases firm's financial performance. Our findings are also consistent with the postulations of stakeholder theory that by managing and satisfying the stakes of multiple stakeholders enhance firm's overall performances. The current study contributes to the literature of a business case of CSP and firms financial performance by investigating the mediating role of CSP in the relationship of IMS and firm's financial performance. This paper also contributes to the extant literature of CS practices and reporting in emerging economies. This paper focuses that how Malaysian listed companies integrate CS practices and its relevant strategies. The findings of the study will have implications for Malaysian Government as the Government of Malaysia (GOM) is trying to develop a sustainability culture among the corporate sector. Under the New Economic Policy (NEP) the GOM committed to ensuring the implementation of sustainable development through their 2020 Vision to being declared as a developed country. This study has also implications for PLC's in order to understand the role of integrated strategies for CS practices and reporting. This study provides theoretical contributions to prove the essence of stakeholder theory that firms should play its role in stakeholder's management through CS practices and reporting.

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# A Step towards Sustainable University: A Case of Universiti Teknologi PETRONAS (UTP) Malaysia

**Muhammad Zahid\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*Email: mianmz1@yahoo.com*

**Zulkipli Ghazali**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Haseeb Ur Rahman**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

\*Corresponding author

## **Abstract**

**Purpose:** Higher Education Institutions (HEIs) has the potential to be sustainability leaders and change drivers; as these can ensure the current and future needs of the society by contributing through their institutional role, and educate future generations to make sustainable societies. This study aims to examine the role of HEIs in adopting and pursuing sustainable development (S.D) goals.

**Design/Methodology/Approach:** The current study uses Universiti Teknologi PETRONAS-UTP Malaysia as a case study by adapting universities sustainable development initiatives checklist/index from the previous literature. For the grounding of S.D initiatives the study uses qualitative content analysis procedure for the years 2011 to 2015 of UTP main website, embedded websites links, internal university operational documents and departmental initiatives those are directly linked to S.D.

**Finding:** The findings of the study report that Universiti Teknologi PETRONAS (UTP) has good and meaningful contributions for S.D goals. The University contributes for all the three dimensions of S.D including economic, social and environmental. UTP confirms their key role in developing S.D principles and contributing to the paradigm shift of education for sustainable development (ESD).

**Practical Implications:** The findings of the study have significance and practical implications for HEIs, academia and policy makers. The study has significance for academia, regulatory bodies, and HEIs. The study also has significance towards the new economic model (NEM) and vision 2020 of Malaysia.

**Originality/value:** The study proposed ESD priority areas and also proposed S.D implementation framework for universities. The study has contributed to the extant and limited literature of S.D in HEIs.

**Keywords:** Sustainable Development, Education for Sustainable Development, UTP, Malaysia

## **Introduction**

According to Brundtland Report Sustainable development (S.D) is “meets the needs of the present without compromising the ability of future generations to meet their own needs”(WCED, 1987). This pioneer concept contributed and highlighted the human well-being is depend upon the health of sustainable environment, society and economy (Delai and Takahashi, 2013). Thus, S.D comprises three main dimensions: social, environmental, and economic sustainability which has been defined by the Global Reporting Initiative (GRI, 2013) as follows:

*“The environmental dimension of sustainability concerns the organization’s impact on living and non-living natural systems, including land, air, water and ecosystems”.*

*“The social dimension of sustainability concerns the impacts the organization has on the social systems within which it operates”.*

*“The economic dimension of sustainability concerns the organization’s impacts on the economic conditions of its stakeholders and on economic systems at local, national, and global levels. It does not focus on the financial condition of the organization”.*

S.D has become a global accepted concept and a guide to interact between nature environment and society. However, this interaction posed many challenges in every endeavor of life. In order to overcome these challenges of S.D, it calls for a paradigm change at all levels of society including higher education institutions (HEIs) (Disterheft, Caeiro, and Azeiteiro, 2013). To support this argument universities have been charged with the key roles in promoting and implementing the concept of S.D (UNESCO, 1992). Moreover, many scholars see the role of universities on S.D which has greater impact than any other sector of society (Lozano, 2006b). Hence, number of universities has responded and showing good progress in implementation of S.D (Disterheft et al., 2013). During the last decade, there is an increasing trend in higher education institutes to engage in incorporating and institutionalizing S.D into their curriculum, operations, research, outreach, assessment and reporting (Lozano and Young, 2013). However, in spite of many steps and policy making for S.D number of universities is continued to be traditional. Consequently, they are still lagging behind to contribute in holistic manner for broad spectrum of stakeholders requirements (Lozano, Lukman, Lozano, and Huisingh, 2013). The current study has an objective to investigate the role of a university towards S.D with a focus on three dimensions including environmental, social and economic sustainability. For achieving the research objective the study selects Universiti Teknologi PETRONAS- UTP Malaysia as a case in order to investigate and answer a research question that how a university could contribute for S.D.? In order to achieve the research objective, the paper will continue with the remaining sections: a literature review, a Malaysian perspective, findings based on a case study of UTP, conclusion and recommendations of the study.

## **Literature Review**

### ***History of S.D and ESD***

S.D is refer to the publication of “Limits to Growth” by the Club of Rome in 1972 presented in the United Nations conference on the Human Environment, held in Stockholm in 1972 (Meadows, Meadows, Randers, and III, 1972). However, the concept itself can be traced back 300 years from the work of Hans Carl von Carlowitz published about sustainable forestry, and T.R Malthus (1766-1834) who documented that the environment has its limit to the population growth (Mebratu, 1998). Hence, evidenced from this historical work that the emergence of S.D

concept is post-industrial era, and it is much older. Nonetheless, there is general consensus among the scholars that the WCED report “Our common future” known as Brundtland Report considered as evolution of S.D. Some refer S.D to economic growth or the development of strategy. However, it the process to achieve the growth. While sustainability has high focus on the environment, for the final goal of human welfare (Albareda, Lozano, Tencati, Midttun, and Perrini, 2008). However, in the common practice and literature these terms are not using as separate but interchangeably. Additionally, a consensus about the basic principles and ideas of S.D and sustainability comprises: normativity, intra and intergenerational equity, justice, gender equality and participation. These principles are endorsed by the Rio Declaration at the UN Earth Summit in 1992 which can be refer to both of the terms (Disterheft et al., 2013).

Accordingly during 1970s and 1980s, many of educational institutions moved forward in establishing environmental sciences and environmental studies programs (Rowland, 2013). In the meantime, campus staff and administrators working in campus operations have started to address issues like utilization of resources. Moreover, such efforts often driven by economic forces, for example an increase in energy prices encouraged energy managers to seek means for energy conservation. Water shortages and increased costs led the water conservation both in buildings, offices and landscaping as well. As a result the introduction of the Talloires Declaration by Jean Mayer of Tufts University in 1990 was an important turning point in the evolution of the campus based sustainability movement in the USA and Canada. The declaration clearly recognized higher education role in sustainability education, and the signatories are committed through their institutions to ten actions, including fostering environmental literacy for all. This declaration was important because it explicitly linked “Education for Sustainable Development” (ESD) to campus operations in a section titled, “Practice Institutional Ecology”.

As discussed earlier the debate about S.D has also initiated the concept, ESD that facilitate the attainment of S.D goals. It remained an area of the international educationists since the start of debate on the S.D. The ESD concept institutionalized in 1992 by getting international recognition in terms of Agenda 21 and its chapter 36 regarding education at the UN Earth Summit in Rio de Janeiro (UNDESD, 2009). ESD can be defined as “Education for Sustainable Development (ESD) is a learning process (or approach to teaching) based on the ideas and principles that underlie sustainability and is concerned with all levels and types of learning to provide quality education and foster sustainable human development—learning to know, learning to be, learning to live together, learning to do and learning to transform oneself and society” (UNDESD, 2009).

### ***Sustainable Universities***

The author identifies five dimensions for sustainable universities including education and research on sustainability, university operations, external community, assessment and reporting (Lozano, 2006a). These dimensions are considered interconnected and hence treated as comprehensive, and crucial for the holistic implementing of S.D. There are still some issues with less attention like non-materialistic aspect of sustainability related to society, culture and ethics. However, some good achievements have been made in relation to curriculum greening, campus operations (environmental issues and their educational dimension) system transitions approach towards large group of stakeholders, outreach programs, assessment and reporting.

Also, universities are conducting specific conferences on S.D implementation (Disterheft et al., 2013; Lozano, 2011).

### ***Some Milestones and Policy-Making for S.D in Higher Education***

To support S.D, a number of policies and declarations promulgated for education institutions (Disterheft et al., 2013). Most of these documents related to moral obligation toward the promotion of S.D within universities. Nonetheless, signing a declaration has not yet ensured that the signatory institutions will implement S.D within their systems. As a result, some universities accused of “green wash” if they fail to implement S.D thought out their system instead of signing a declaration (Bekessy, Samson, and Clarkson, 2007). Moreover, some universities without signed any declaration or belonging to any charter, are performing well for S.D such as regional development, to reduce greenhouse gas emissions, academic leadership, commitment via inclusion of S.D in their mission and vision statements and so on (Lee, Barker, and Mouasher, 2013).

### ***Sustainability Reporting in HEIs***

Sustainability reporting got much popularity in the last decade in both profit and non-profit organizations. In the corporate world this trend has increased over the last decade (Daub, 2007). Following the increasing trend of sustainability reporting in the corporate world (Lozano and Huisingh, 2011), some higher education institutions (HEIs) initiated sustainability reporting. However, the trend is in embryonic stages particularly in HEIs, both because of the lack of substantial number of reporting, and low quality of reporting outcomes (Ceulemans, Molderez, and Van Liedekerke, 2014). In the Global Reporting Initiative (GRI) Database (<http://database.globalreporting.org/>) the number of sustainability reports increase to 33 in 2012 after its introduction in 2001. Similar to the low number of HEIs publishing these reports, the literature on the subject is also limited that needs further exploration.

### ***S.D and Malaysia***

A commitment towards S.D in Malaysia was first highlighted in their Third Malaysian Plan (1976-1980) published by the Economic Planning Unit (EPU). The Plan was designed and based on a blueprint to help the Government of Malaysia (GoM) in five years development strategy. From the Third Malaysian Plan to presently the Eleventh Malaysian Plan (2016-2020), the concept of S.D gained much importance and it is being part of Government core strategies (Zahid and Ghazali, 2015). Through National Key Economic Areas (NKEA) in the Tenth Malaysian Plan the government will focus quality of public higher learning institutions through performance based funding by escalating the rating system for Malaysian Higher Education Institution (SETARA) in order to cover private universities, colleges, and its faculty level. It also introduced the central enrolment system for local and foreign students with flexible credit schemes. A conducive educational system attracted students and leading faculties in niche areas for establishing their branches in Malaysia (NEM, 2010). However, in the light of above discussions the major concerns were are often put directly on organizations and little focus is mentioned about how to implement the core concept of S.D among the universities and HEIs.

### **Methodology**

The current study uses Universiti Teknologi PETRONAS- UTP Malaysia as a case study by adapting universities sustainable development initiatives checklist/index (see annexure 1) from the previous literature (Lozano et al., 2014). For the grounding of S.D initiatives the study uses qualitative content analysis procedure for the years 2011 to 2015 of UTP main website (<http://www.utp.edu.my/>), embedded website links, internal university operational documents and departmental initiatives those are directly linked to S.D.

### **Findings**

#### ***Universiti Teknologi PETRONAS (UTP)***

The UTP is established in private sector of Malaysia in 1997. In the start university offered a variety of programs related to engineering and technology at graduate and post graduate level. At present, the university offers five (5) engineering based programs including Chemical, Civil, Electrical and Electronics, Mechanical and Petroleum, and three (3) technology based programs including Petroleum Geoscience, Information and Communication Technology and Business Information System, Applied Physics and Applied Chemistry. However, the university later introduced the programs in management and humanities as well in order to produce graduates with excellent skills of leadership and communication. The University has a current strength of 6000 students from more than 50 countries around the world. It has produced more than 10000 graduates till date since its inception in 1997.

The Quacquarelli Symonds (QS) ranked UTP as 4-star institution with a maximum five star rating in five areas including: employability, internationalization, innovation, facilities and access among eight. The UTP is the only university with this honor in private sector of Malaysia. The university has also ranked in top 160 universities of the QS World University Ranking by subject for Chemical Engineering in 2015. Moreover, the departments of Electrical and Electronic Engineering, Mechanical Engineering and Computer Science and Information Systems of the university have also included in the world ranking. In addition, the university has a distinction to be the only university in private sector of Malaysia ranked in the top 200 universities in QS rankings for Asia in 2014. The university stood 335 in the QS World University Rankings for Engineering and Technology Faculty. The University is a Tier 5 (Excellent) University for SETARA (Rating System for the Malaysian Higher Education Institutions). It has also achieved the status of Tier 5 for D-SETARA (Discipline-Based Rating System) in engineering.

#### ***UTP Endeavors for Sustainable Growth***

UTP focuses Research and Development activities in order to earn name of a research university within and outside Malaysia. The university carries out extensive research projects in collaboration with PETRONAS (which is parent company of the university) and other national and international institutions. Subsequently, the university focuses nine areas namely Enhanced Oil Recovery, Carbon Dioxide Management, Deep water Technology, Nanotechnology, Green Technology, Biomedical Technology, Hybrid Energy Systems, Intelligent Cities and Sustainable Resources. This focus is considered to strengthen all the three dimensions of S.D not only in university but in society and country as well. The university was therefore, awarded a 6-star rating by Malaysian Research Assessment Instrument for research, development and commercialization in the recent past.

### ***Economic Sustainability***

- Department of Mission Oriented Research (MOR)

The RandD Master Plan of UTP focused to develop technological platforms in the Oil and Gas, Transportation and Intelligent System in the start. However, the university later on, turned its attention on “Mission Oriented Research” in “Oil and Gas Industry” of the country. This shift triggered much by the current capabilities of the university and importance of the sector which has a great contribution in the GDP of the country. In addition, the university aimed to assist the core businesses of its parent company (PETRONAS) which enjoys the status of “leader” in the sector. Subsequently, a department of Mission Oriented Research established to focus Enhance Oil Recovery (EOR). EOR is a technique that increases oil production by injecting stored carbon into the mature oil fields. The department focusing research areas in the field like enhancement of Reservoir Rock and Fluid Characterization, EOR screening and modeling, New and Novel Technologies like Nano-enhanced EOR and EOR Agent Injection. The department prioritizes the enhancement of WAG applications by implementing modified chemicals synthesized from local sources and Nano materials developed by UTP researchers. The department undertakes research activities spanning from Geology through drilling and finally on EOR recovery methods as the method has a higher success rate. Following are mission and vision statements of the department. The department aims to develop and improve reservoir characterization and recovery methods in EOR to enhance recovery. The department has a vision to be known as a leading RandD institution on advanced EOR Fluids and acknowledged as an expert in Reservoir Modeling and Characterization in EOR.

- Intelligent Cities

Undoubtedly, Good quality of living is the right of every human being on the earth. However, most of the human are deprived of it due to a number of reasons in developed as well as developing countries. Good living quality include the basic necessities like food, air, water, shelter, electricity, transport, roads, sewerage, healthcare facilities and security with a reasonable cost and without tempering environment much. In nut shell, good quality of life demands a well establish infrastructure to efficiently deliver. The efficient infrastructure not only contributes to good quality of life but also increase economic prosperity which further improves the quality of life. The issue of quality living is more highlighted in urban areas where the population density is higher than that of rural areas. Thus, the city governments, whether in developed or developing countries, face a number of problems to cope with in providing good quality of life. The MOR for Intelligent Cities of the UTP focuses these challenges to convert into opportunities so that to improve the quality of life in cities, local economy, and environment. The MOR specifically focuses the areas such as intelligent transportation system, Human social environment, Safety and security, urban health and Green computing for developing and promoting of intelligent cities.

### ***Environmental Sustainability***

- Carbon Dioxide Management

About 40% of the world gas reservoir which is approximately 2500 trillion cubic feet has high volume of CO<sub>2</sub> and H<sub>2</sub>S. Malaysia accounts for undeveloped CO<sub>2</sub> –NG gas fields having a capacity of 13 trillion cubic feet of these two cases. The processing of high CO<sub>2</sub> -NG requires an advanced technology in pretreatment, separation, utilization, transportation and storage. The MOR of the university focuses on projects like CO<sub>2</sub> which ensures the safety of environment.

The department currently focuses the technologies which separate CO<sub>2</sub> particularly on adsorption, absorption, membrane, cryogenic, high gravitational separation and hybrid system including corrosion. The department is focusing selective removal of CO<sub>2</sub> (Solvent Absorbent, Membrane, Adsorbent) in material handling activities. Moreover, the quality of NG pipeline (Absorption, Adsorption, Membrane, Cryogenic, and Supersonic Gas Separation) is focused in the separation and modeling activities. In addition, the management of material towards high CO<sub>2</sub> handling (improved alloy steel and corrosion inhibitor are prioritized in corrosion. The separation technologies of CO<sub>2</sub> –NG gas of the department will enable monetization of high CO<sub>2</sub>-NG gas fields in Malaysia. Moreover, the technology is expected to grant a competitive edged to PETRONAS which will help its penetration in domestic as well as international market.

- **Hybrid Energy Systems**

The depletion of fossil fuels, global warming and focus on renewable energies has grabbed much of the attention these days. The MOR has a Hybrid Energy System which can be broadly categorized into three groups namely Alternative Energy, Power Systems, and Novel and Hybrid Systems. The Hybrid Energy System of MOR currently focuses hybrid energy systems by considering all the available local resources for renewable energy. The Hybrid Energy System MOR is committed to enhance its capabilities by equipping various labs. Currently, the department has the facilities including Centre for Automotive Research and Electric Mobility (CAREM), Gas District Cooling Plant, Biomass Gasification Lab for Power Generation and Solar Research Site (SRS) to support research.

Moreover, the department aims to earn name in energy efficient technologies and integrated alternative energy systems so that sustainable energy solutions could be found for the welfare and betterment of the society. It concentrates on Electrical Power Generation Systems, Thermal Energy Systems and Energy Management Systems to develop such Centers of Excellence that could fulfill the energy needs of the nation.

- **Green Technology**

The Green Technology of MOR concentrates on sustainable technologies in order to decrease environmental issues pertain to greenhouse gas emissions, water contamination, chemicals, toxic waste and heavy metals management. The mission deals these issues through channelizing activities to the main themes like wastage of wealth, clean technology and cost effective solutions. The mission has two research centers namely Center for Biofuel and Biochemical Research (CBBR) and PETRONAS Ionic Liquid Center (PILC).

### ***Social Sustainability***

- **University Internship Programs**

Universiti Teknologi PETRONAS (UTP) established with aim to produce graduates who are not only technically sound but also strong in critical thinking, communication, behavioral skills, business acumen, practical attitude and solution synthesis ability. UTP has a compulsory practical training for undergraduate students in the form of two internships. The internships namely Student Industrial Training (SIT) and Student Industrial Project (SIP) both have duration of 14 weeks. This experience is considered to enhance the knowledge and understanding of students. The university keeps contact with different industries to facilitate

students in placing them for internships. The Student Industrial Internship Programme (SIIP) is one of the examples of the University –Industry collaboration. The Sustainable Resources Mission Oriented Research (SUREMOR) focuses the emerging discipline of “sustainability”. The SUREMOR emphasizes on the dimensions of sustainable development with a special focus on human capital development. SUREMOR in collaboration with university conducts activities of social responsibility.

- **Charity/Donation**

UTP established Yayasan UTP (UTP Foundation) to further promote education in the country in 2007. Yayasan UTP has a key role in seeking donations and searching new partnerships with individuals and organizations to support university UTP its growth for becoming a leading educational institution for creativity and innovation. Yayasan grant scholarships for research and innovation in the field of arts, sports and culture. It also aims to extend philanthropic activities and financial support for the welfare of the society. Yaysan has also an important role in achieving the vision of the university to become role model and leader in education, innovation and technology. In October 2013, UTP had organized a successful Golf tournament at Kelab Golf Sultan Abdul Aziz Shah (KGSAAAS), Shah Alam Selangor. The tournament raised a fund of almost RM 0.5 million for Yayasan UTP fund.

- **UTP Corporate Social Responsibility**

Recently in Aug 2015, on the hands of Tun Dr. Mahathir launched UTP Corporate Social Responsibility (CSR) book “A Gift of Hope”. “A Gift of Hope”, is a book launched in conjunction with UTP’s CSR approach, aligned with the university’s overall vision and goals. The purpose of the book is to highlight the relationship between the university and the local society in which it resides.

- **Cultural Activities**

Yayasan, Alumni UTP and Dewan Filharmonik PETRONAS (DFP) have jointly organized a Tapestry of Colours 2015 – a concert in 2015. The concert aimed to raise funds for Yayasan UTP (YUTP) and thus the revenue collected from tickets given to the foundation. The Yaysan grants scholarships to the deserving students of UTP to support research, creativity and innovation in the fields of arts, sports and culture. The foundation has granted total scholarship worth RM 3.5 million to more than 400 students till date, since its inception in 2010.

### **Conclusion and Recommendations**

HEIs could become sustainability leaders and change drivers; they can ensure the needs of present and future generations by contributing through their institutional role, and they can educate future generations to make sustainable societies. In this regard HEIs are required to empower and aware their employees to implement the S.D paradigm in order to ensure S.D throughout the university system including education research, campus operations, community outreach, assessment and reporting (Lozano et al., 2013). The debate of S.D in HEIs has expanded over the past decades. It has been recognized that HEIs play a pivotal role in promoting S.D, sustainability principles, contributing to the paradigm shift for the better future of current and future generations. HEIs covers S.D gamut by adopting two mainly focusing practices: campus and off campus sustainability practices. These two are commonly considered as the best practices for S.D adoption within universities. Campus sustainability covers inside

the campus operations directly or indirectly link to S.D including ESD, sustainability research projects, S.D related conferences, inside environmental and social contributions, while off campus covers all the outside contributions of HEIs for the S.D domain. The current study found that Universiti Teknologi PETRONAS have good and meaningful contributions for S.D as shown in the above discussions. However, despite some progress and good examples, only a few HEIs are engaged and follow a S.D implementation process holistically. Most of them just follow the one-sided trend of “going green” only for the purpose to fulfill general requirements, somehow marketing advantages, and economic benefits. As a result it increases green washing and may leads to losing the original meaning and credibility of S.D.

Keeping in view the case study of UTP we conclude our findings and proposed Nine (9) priorities (see Table 1) for the implementation of S.D within the culture of a university. The priorities are included: top management commitment, vision and strategy, targets and benchmarking, stakeholder’s identification, awareness and empowerment, RandD for S.D, focus on social, environmental and economic sustainability, reporting for internal and external usage and last but not the least follow national and international policy where applicable.

Table 1: Education for Sustainable Development Priority Areas

<b>Commitment to S.D and E.S.D</b>	<b>Priority</b>
1. Top Management Commitment	High
2. Vision and Strategy	High
3. Targets and Benchmarking	High
4. Stakeholders Identification	High
5. Stakeholder’s Awareness and Empowerment	High
6. Research and Development for S.D	High
7. Focus on Social, Environmental and Economic Sustainability	High
8. Reporting for Internal and External Use	High
9. Adhere National and International Policy (where applicable)	High

In Figure 1 the study proposed sustainability management system (SMS) for HEIs. The purpose behind the SMS for HEIs is to ensure the implementation of S.D in line with the 9 priority area as defined earlier.

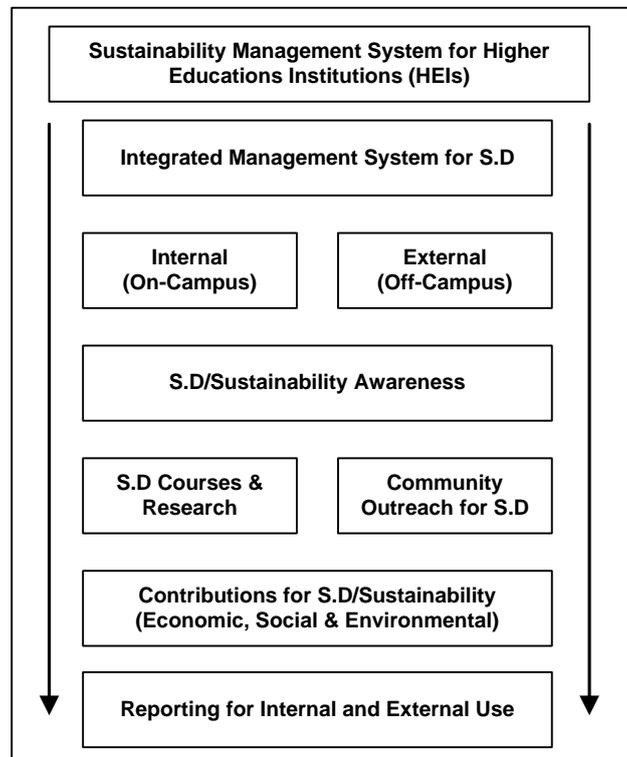


Figure 1: Proposed Sustainability Implementation Framework for HEIs

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### Annexure 1: Sustainable Development Disclosures Index in HEIs

Initiatives for Sustainable Development			
S.D included in the vision and mission, goals and objectives	Yes	Plans to improve energy efficiency	Yes
Policy for implementing S.D	Yes	Energy efficient equipment	Yes
Strategic plan for implementing sustainability	Yes	Renewable energy usage	Yes
Staff dedicated to S.D	Yes	Plans to reduce GHG emission	Yes
S.D working group	Yes	Efforts to reduce GHG	Yes
S.D office	Yes	Plans to improve prevention and management of waste	Yes
University leaders provide an S.D budget or in-kind support		Waste bins to separate and recycle waste	Yes
		Policies and activities to reduce paper consumption	
		Plans for water and wastewater management	
Course on S.D for all students	Yes	S.D institute research center	Yes
Optional courses on S.D in the curriculum	Yes	Funding for S.D research	Yes
Integrated sustainability courses throughout all curricula	Yes	Promotion of holistic thinking in research	Yes
Invited lecturers/professors on S.D	Yes	Use of research generated in S.D teaching	Yes
Teaching across the natural sciences and social sciences faculties	Yes	Number of publications on S.D	Yes
Continuing education to the public on S.D		Patents in the field of S.D	Yes
		Creation of S.D new knowledge and technologies	
		Research between the natural sciences and social sciences faculties	
Exchange programs in S.D	Yes	S.D working group with members from different departments	Yes
Joint S.D degrees with other universities	Yes	Policies that promote S.D for all students and staff	Yes
Joint S.D research with other universities	Yes	Sustainable practices for students	Yes
Collaboration in S.D research projects with other universities	Yes		Yes
	Yes		Yes

S.D partnerships with other society stakeholders		Student participation in S.D activities	
Part of interdisciplinary S.D expert networks		Employees and other stakeholders act sustainably	
Academic staff involved in voluntary advisory activities in S.D		S.D efforts are visible throughout the campus	
S.D events that are open to the public/community		Staff and researchers are aware of S.D	
		Staff and researchers are engaged in S.D research	
Assessment of S.D issues	Yes	Campus Operations	Yes
Communication of S.D activities	Yes	Education	Yes
Environmental reports	Not	Research	Yes
Sustainability reports	Reported	Outreach	Yes
National environmental universities' rankings	Not	On-campus experiences	Yes
National S.D universities rankings'	Reported	Assessment and reports	Not
International environmental universities' rankings	Not	Cultural Development	Reported
International S.D universities' rankings	Reported		Yes
	Yes		
	Not		
	Reported		
	Not		
	Reported		

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# Rationale and application of Interpretive Structural Modeling (ISM) in Safety Management Research

**Nor Hafizah Abd Latiff Khan\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: norhafizah\_86@yahoo.com*

**Zulkipli Ghazali**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Muhammad Ridhuan Tony Lim Abdullah**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Ahmad Shahrul Nizam Isha**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*\*Corresponding author*

## **Abstract**

**Purpose:** The main purpose of this paper is to review the literature relating to Interpretive Structural Modeling (ISM) and its rationale to be used in Safety Management Research especially safety behavior.

**Design/Methodology/Approach:** ISM is a well established and comprehensive methodology to deal with complex problems or issues. It was first introduced about forty decades ago. This technique is a computer-assisted technique that facilitates authors to create a graphical representation of complex interaction between the specific elements involved. ISM is a unique technique because it is not only could identify the elements, clarify the connection between the elements and represent the elements in a structural graphical model. The output for ISM which is a structural model integrated from discussions between group of experts related to the problems/issues during development process was systematic and comprehensive.

**Findings/ Highlights:** In this paper, the rationale of using ISM in situations like safety management research is described and the basic concepts underlying the technique are clarified. Several previous literatures on application of ISM are explained and the contribution of ISM process and effectiveness of the results are discussed.

**Limitation/ Implications:** This paper only focuses on rationale of ISM to be employed in safety management research in Malaysian context only.

**Originality:** The study contributes to safety management research in providing another technique to be employed in conducting a safety research especially safety behavior in a different context which is downstream oil and gas companies in Malaysia.

**Keywords:** Interpretive Structural Modeling, Safety Management Research, Safety Behavior

**Article Classification:** Conceptual Paper

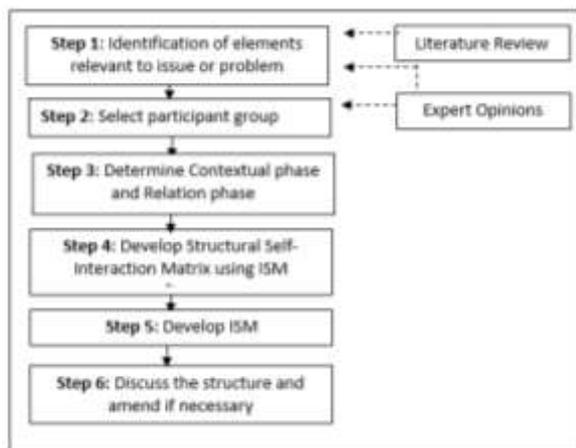
### **Introduction**

Interpretive Structural Modeling (ISM) has appeared in research area about four decades ago. John N. Warfield is the first researcher who introduced ISM in 1973 to analyze the complex socioeconomic system (Gorvett and Liu, 2007). Warfield explained that ISM is computer-aided learning technique that allows group of people or individual to identify interrelationships among many specific ideas/ elements which defines an issues or problems. It is known that individual or a team will have complexity in attending with complex problems due to occurrence of many variables/elements and the existence of relationships between the element (Attri, Dev, and Sharma, 2013). Attri, Dev and Sharma further assert that “The presence of directly or indirectly related elements complicates the structure of the system which may or may not be articulated in a clear fashion. It becomes difficult to deal with such a system in which structure is not clearly defined, p.3”. Besides dealing with complex issues, there are other advantages of ISM. Abdullah, Siraj, Asra and Hussin (2014) stated that ISM has its own reason why it is interpretive, structural and modeling. It is interpretive because it can give the idea about the elements relationships and how the elements are connected. This technique is structural as the connection between the elements will generate an overall structure while ISM is modeling technique because the end results developed from the overall structure and the relationship among the elements would be demonstrated in a graphical model.

This technique is based on finite or discrete mathematics (Jayant and Singh, 2015). The mathematical language is further explained by Jayant and Singh in their paper which is “Warfield has produced a mathematical language applicable to many complex issues, provided that they can be analyzed in terms of sets of elements and relations, Interpretive structural modeling (ISM) is used here to refer to the systematic application of some elementary notions of graph theory in such a way that theoretical, conceptual, and computational leverage is exploited to efficiently construct a directed graph, or network representation, of the complex pattern of a contextual relationship among a set of elements p. 16”.

ISM is unique because its capability in solving complex issues that relate with many elements and many interrelations between the elements. In this technique a sets of elements which is connected directly or indirectly are transformed into systematic comprehensive model. The end product (structured model) represents words as well as graphics. To get the model, there are several steps in adopting the ISM technique. Figure 1 shows the flowchart for the ISM process.

Figure 1.0: The ISM Process



## Literaturw Review

### *The ISM process*

#### *Identify issues/elements to be studied*

First step of this ISM method is to identify the elements to be studied clearly. The process will begin with literature review where the researcher will list the potential elements that are relevant to the issues or problems studied. The list elements will offer an explanation on the first view of the research outcome where it will helps the participants to get ideas on how to starting with. Next, the researcher will give a short survey of the prelisted elements and using the survey results, the participants might agree or disagree with the elements list. From the survey, factors that achieve positive consensus will be counted for next processes. The experts will be allowed to add additional elements if they find that it is deemed fit for the model. (Gorvett and Liu, 2007)

#### *Select participant group*

The participant for the ISM session must be considered by the researcher in order to select the right experts that will give the best outcome related to the topic. The experts must have relevant knowledge, skills, background and come from different area but closely related with the topics

#### *Determine Contextual phase and Relation phase*

The connection of the elements towards each other will result in determining the contextual phase and relation phase. It means that the contextual phase and relation phase must be identified based on the relation of the elements. The contextual phase describes the goal (what is the main objective to achieve) and it is also tells the boundary conditions or limitations related to the problem studied. While the relation phase defines how the relationship of the elements should be presented during the ISM process. Consensual experts' views on how the elements should be related will identified the contextual phase and the relation.

***Develop a Structural Self-Interaction Matrix (SSIM)***

This step will demonstrate the connections of the elements where it will be assist using the ISM software. Only relation between two elements will be shown through the software at one time. The experts will be allowed to discuss on the relations of both elements thus decide on the relationship through voting before the next pair of elements was displayed. This process will be continued until all the elements being paired. Based on the transitive logic and pair wise comparison concept, the structure model will be derived by the computer. According to Abdullah et al, (2014), “transitive logic states that for any 3 elements (A, B, C) with a given relation when:

- A has the relation to B, (written  $A \rightarrow B$ ),
- And B has the relation to C, (written  $B \rightarrow C$ ),
- Then A has the relation to C, (written  $A \rightarrow C$  or  $A \rightarrow B \rightarrow C$ ).

(p. 155)

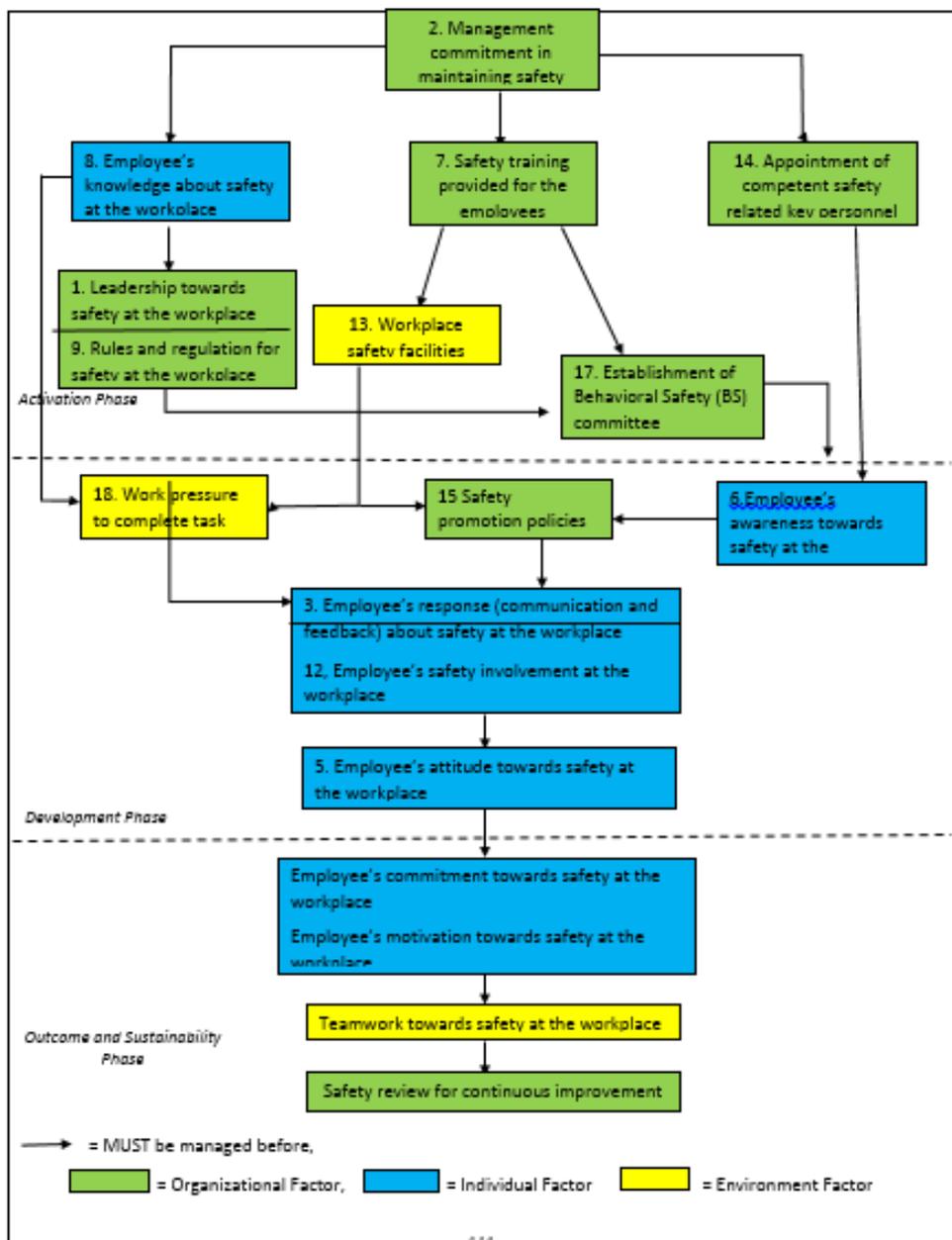
***Display the ISM***

When the group of experts' answers all necessary questions about the pairings of the elements, a *reachability matrix* constructed. From the matrix, the software can extract a multi-level digraph. The digraph then is substitute with the elements used for the study.

***Discuss the structure and amend if necessary***

For the last stage, the result of the ISM will be shown to the participants and the group will discuss on the results. The purpose of the discussion is to enlighten the resulted model to the group of experts so that the experts have clear understandings on how to read and interpret the model, thus allow the experts to state their opinions on the model. The experts may advise changes to the structure of they think it is necessary.

Figure 2.0: Employees' safety behavior management model



### Application of Interpretive Structural Modeling

ISM is a comprehensive and well-established methodology because it has been adopted in various research areas such as Supply Chain Management, Vendor/Supplier Selection, Business, Total Productive Maintenance, Olympic, Sustainable Development, Risk Management, Education and many more. It is supported by Attri et al., (2013) "ISM can be used at a high level of abstraction such as needed for long range planning. It can also be used at a more concrete level to process and structure details related to a problem or activity such as process design, career planning, strategic planning, engineering problems, product design,

process re-engineering, complex technical problems, financial decision making, human resources, competitive analysis and electronic commerce, p.6”

Therefore, some literature on application of ISM in different fields is discussed.

### ***ISM in Supply Chain Management***

Supply chain management research always applied ISM in planning or solving problems. For example, Kumar, Luthra, and Haleem (2013) applied ISM with the purpose of exploring the customers involvement variables toward greening of the supply chain. In the article, it is stated that there are ten variables identified from the literature. Using all ten variables, a model was formed and from the model, it is found that “awareness level of customers” and “encouragement and support of customers” are top-level variables. Next is article by Mathiyazhagan, Govindan, NoorulHaq, and Geng (2013) who employed ISM to determine which is the most dominant barrier for the adoption of green supply chain management in Indian industries. The results showed that “lack of customer awareness”, “disbelief about the environmental benefits”, “lack of green system exposure professionals” and “poor supplier commitment unwilling to exchange information” has been found as the top most level barriers. Then, a study by Luthra, Kumar, Kumar, and Haleem (2011) also applied ISM in supply chain research specific n automobile industry. Purpose of the study is to determine the barriers to implement green supply chain management. Eleven barriers had been identified from literature and resulted structured model help other researchers to know the barriers interdependence to better manage the resources in effective way. Besides that, there are also other researches who employed ISM in supply chain management such as Dashore and Sohani (2013), Zaabi, Dhaheri, and Diabat (2013), Faisal, Banwet, and Shankar (2007) and Faisal, Banwet, and Shankar (2006).

### ***ISM in Olympic***

Wu and Huang (2008) applied ISM to investigate on “Evaluating Industrialization Potentiality of Olympic Technology Projects (p.1)”. During Olympic Beijing 2008, Chinese government implements Technology for Olympic (2008) Action Plan by using the concept of Technology for Olympics which had funds many researchers’ projects. The application of ISM aimed at describing the time and resources limitation and helps to solve the conflict of reality and reliability.

### ***ISM in Vendor/Supplier Selection***

In order to decide on the most excellent supplier based on CSR in firework industries, Kumar, Palaniappan, Kannan, and Shankar (2014) had applied ISM to get the best results since ISM is well-established methodology. In this study, there are nine CSR issues determine from literature to select the best supplier. ISM explores the interactions and interrelationships among various CSR issues and it is found that safeguarding mechanism and organizational legal issues are the most important issues in selecting best supplier. The results help the managers to find

the best solution regarding their supplier. Next, a study by Mandal and Deshmukh (1994) also applied ISM in vendor selection. The output model shows that after sales services and attitudes and willingness for business are important factor as delivery, practice and quality. Therefore, the result had given basic ideas for vendor selections process. Besides, Kumar and Kant (2013) employed ISM in choosing the best supplier. ISM was employed to determine the supplier selection process enablers in the Indian industry. 12 enablers are examined from literature and interrelationship between the enablers is developed. Top management commitment and external environment has been found as key enablers.

### ***ISM in Small Medium Enterprise***

In small medium company, safety performance is very important aspects. Thus, Cagno, Micheli, Jacinto, and Masi (2014) also employed ISM with the aimed to identify the best model for safety performance. The study has identified thirty five (35) factors that relate with safety performance for SME. Before ISM process, the factors already been divided into affinity area and sub factors through focus group to better understand about the factors. The structural model has found that policy, labor management and company and labor characteristics are the fundamental issues that drive other factors. Therefore, the model derived is hoped to help SME practitioners get a good safety performance in SME.

### ***ISM in Waste Management***

A study by Li and Yang (2014) employed ISM with the purpose to support waste planning and management. Specifically, ISM is used to determine connections between the critical elements of waste generation in construction retrofit projects, identify the characteristics of each factors and its influence on waste generation. There are seven critical factors were found from the literature and factor organizational commitment of project stakeholder has been identified as top most level as it drives all other factors. Thus it is a fundamental factor while the factors plan, design and construction process as middle level but has its own significant since it plays as important linkage factors.

### ***ISM in Education***

ISM is always been used in education. In a study by Abdullah et al, (2014), ISM was applied to propose a mLearning curriculum implementation model for English Language and Communication Skills course among undergraduates in Universiti Teknologi PETRONAS, Malaysia. The study has identified 24 learning activities needed to develop the model. Interestingly, after further evaluation by the expert on the output model, the model can be divided into three main areas which are enabling skill activities, knowledge input activities, and evaluation and reflection activities. The results shown that knowledge input activities is at top level and important activities in implementation of the model. Besides, Sohani and Sohani (2012) also employed ISM technique to determine the quality based structural framework of quality education system in higher education in Indian context with identification, sequencing

categorizing and prioritizing quality characteristics and structuring into a systematic model. The method helps to prioritize the strategic issues in quality assessment qualitatively. The result show that vision and leadership of top management and proper financial management with strategic funds allocation has been found as fundamental variables in the success of quality management system for higher education.

From the literature examples on the applications of ISM, most of the researchers employed ISM because it explore the “dynamic influence of different elements which brings into consideration of a system of directly and indirectly related elements” (George and Pramod, 2014; p.2). Most of the study applied many elements together holistically and the research want to examine which elements is the best elements or better elements or most important elements than others. ISM is a comprehensive technique in identifying many different elements that employed together to solve a problems or issues. ISM also has been chosen because it is a technique that not only identifies the elements, but it can clarify the interrelationships between the elements and portray the elements based on the basis relationship in a graphical form (model).

### **Rationale of ISM in Safety Management Research**

Guastello (1993) who cited in (Cui, Fan, Fu, and Zhu, 2013) asserts that “in occupational safety literature, researchers have focused on addressing one fundamental research question – how accidents and unsafe behavior can be prevented (p.38)”. However, during the last three decades, there has been a important change in safety management research (Cui et al., 2013). The new paradigm shift of research development targets to investigate all related dimensions such as organizational, attitudinal, social, environmental and cultural dimensions on occupational safety (Cui et al., 2013). When the new research dimension focuses on many factors together holistically, previous techniques of doing research also changes over time. Previously, many safety models were derived using either quantitative or qualitative approach such as interview, focus group, survey questionnaire or combination of both. The results causal relationship model which interpret the one way interrelationships that means it is only stated the effect of one or more independent variables on dependent variables. Furthermore, this type of model did not include all variables related to the problems/issues. According to Cagno, Micheli, Jacinto, and Masi (2014), mostly every industries that aims in improving safety, must take into consideration all the pertinent elements. However, Cagno et al further stated that “this should not be done on a one-to-one basis, but rather through a meaningful group of connected elements, which together impact on the safety and on the overall performance, p.63” (Cagno et al., 2014). This will definitely give more effective and efficient results.

Therefore, ISM, a comprehensive technique which can be applied which not only identifying elements, connecting many elements together, clarify the relationships between the elements and present it in a form of graphical model was found as a suitable technique to be used in safety management research. Besides, advantages of ISM are stated below:

1. Systemic: this method will allow the management determines all relevant elements related to the problem/issues to be studied. Previous literature of these elements is, yet, absent from the literature, in the sense of a meaningful assembly of connected elements (Cagno et al., 2014). If all connected elements are not counted together, it will hinder the understanding of overall safety dynamics, thus disable a holistic view of the subject. From a practical point of view, a holistic view would enable companies to realize firstly the structure in which a given intervention takes place and secondly the elements that the intervention highlights or ignores.
2. Intervention-oriented: this method will also allow integrating elements for improving safety management in both a rational and a well-structured way, by means of a proper prioritization of the interventions themselves. The analysis of the interactions between factors allows understanding how a specific intervention may modify the company's safety management research (Cagno et al., 2014). An intervention oriented framework is, as yet, absent from the literature, since the existing models do not rank the factors, thus neglecting the different alternatives for the decision maker in terms of influencing capability on other factors and specificity of the intervention.
3. ISM is a technique that applicable in any complex situation, context free technique and applicable to any content or situation, a set of elements can be determined and a suitable contextual relation defined. "Moreover, the elements may be quantitative or qualitative, permitting items to be included which are not measurable on anything other than ordinal scales of measurement. In this sense ISM is much more flexible than many conventional quantitative modeling approaches which require variables to be measurable on ratio scales. ISM thus offers a qualitative modeling language for structuring complexity and enables a group of users to map their thinking on an issue by building an agreed structural model (Janes, 1988, p.7)"

### **Current Study That Applied ISM in Safety Behavior Research**

An example of ongoing PhD study that applied ISM in the development of Employees' Safety Behavior Management Model (ESBMM) in downstream oil and gas companies of Malaysia is shown in Figure 2.0. The model was developed by 10 experts who had experience more than 10 years in safety in downstream oil and gas companies and government agencies (e.g. Department of Occupational Safety and Health, Social Security Organization and National Institute of Occupational Safety and Health). ISM had been chosen to develop the model because it is a technique that not only identifies the elements that important in influencing safety behavior, but it can clarify the interrelationships between the factors and portray the factors based on the basis relationship in a graphical form (model). Previously, several conceptual model involved in safety behavior only focused on several factors together. The model does not take into account the particular factors and particular structure of the cause to effect chain of interaction characterizing all the relevant safety behavior factors, but this ESBMM model included various factors together in one model.

### Conclusion

Interpretive Structural Modeling (ISM) offered a directional and structured model for various complex issues/problems in different area. Decision makers will have a realistic representation of their problem elements and condition involved. The ISM process relates the determination of elements, the explanation of the connections, and the imposition of rank order and direction to illuminate complex problems from a systems perspective. ISM method transform ambiguous, poorly articulated mental models of systems into reliable and comprehensive models. The structural model will define the main elements that underlying the issues or problem studied. When the key elements identified, the management can start develop a good strategy to solve the problems.

ISM is very unique because it can be applied by variety users from interdisciplinary area. This technique is also able to deal with huge number of elements and interrelationships of the elements in a complex system. ISM will involve various experts thus grant multiple ideas that will be integrated together to get the best results. ISM is also friendly user and communicable to a wider participant. These characteristics of ISM technique have given into a positive employment of this technique in safety management research.

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# Psychosocial Risks in Relation to Health and Wellbeing

**Muhammad Umair Javaid\***

*Department of Management and Humanities, Universiti Teknologi Petronas, Malaysia  
Email: umairjav@yahoo.com*

**Ahmad Shahrul Nizam Isha**

*Department of Management and Humanities, Universiti Teknologi Petronas, Malaysia  
Email: shahrul.nizam@petronas.com.my*

**Zulkipli Ghazali**

*Department of Management and Humanities, Universiti Teknologi Petronas, Malaysia  
Email: zulkipli\_g@petronas.com.my*

*\*Corresponding author*

## Abstract

**Purpose:** The aim of this conceptual paper is to highlight and address the health and well-being issue that has been raised with the imbalances' between psychosocial workplace job demands and resources with the help of job demands-resources theory.

**Methodology:** Mixed methods techniques i.e. qualitative and quantitative methods of data collection and/or analysis will be used for this study to attain and achieve a range of outcomes. The questionnaire design will be in accordance with the data gathered via qualitative research and with the help of existing tool kits and measurement scales provided by Copenhagen Psychosocial Questionnaire (COPSOQ). Blood pressure will be measured by following the protocols mentioned by American heart Association (AHA) by using digital blood pressure measurement machine.

**Findings:** This proposed study will be helpful for stakeholders like government, employers and at the same time for the industry employees to look into the depth of psychosocial risks for the betterment of the society in whole and particularly to the petrochemical industry.

**Implications:** Public health interventions in the workplace by considering psychosocial risks.

**Originality:** Biomarker (blood pressure) is going to be used to measure health and well-being in public health perspective in relation to psychosocial risks in the petrochemical industry of Malaysia.

**Keywords:** Psychosocial, Demands, Resources, Biomarker, Blood Pressure, Malaysia

## Introduction

Gone are the days when physical risks in the working environment were considered the only factor that affects upon the safety, health and wellbeing of the workers. Psychosocial risks have emerged and commonly accepted as a major concern over the workers' health and safety with several aspects that includes but not limited to work demands either quantitative or qualitative,

lack of control, rewards and social support, job insecurity and interpersonal relationships at the workplace (Leka et al. 2015). Psychosocial risks are highlighted in regulations by important organizations (such as ILO, WHO, and European Commission) as “aspects of work organization, design and management that have the impending to cause harm on individual health and safety as well as other adverse organizational outcomes such as sickness absence, reduced productivity or human error” (e.g., WHO, 2008). The statistics of Health and Safety Executive (HSE) indicated that 1.1 million workers in the UK were suffering from sicknesses caused by their current or past work during 2010 (Davies et al. 2014). World Health Organization (WHO) reports that 160 million work-related illness cases occur every year and out of them one third are of back pain, 10% of lung cancer with 16% hearing loss, 11% of asthma and 8% depression. In a study conducted by (Mirza and Bashir 2015) over eight different industrial sectors found that if there are no safety policies in an organization then the accidents at large scale cannot be easily controlled and prevented.

The occupational accident cases in terms of deaths, permanent disability and non-permanent disability in Malaysia are kept on jumping in comparison to previous years. According to Department of Occupational Safety and Health (DOSH) statistics, only in year 2015 the total number of accidents reported in different sectors of the country are; 140 death cases, 104 permanent disability cases and 2563 are non-permanent disability cases. While particularly look into manufacturing sector which is on the top of the list with 27 death cases, 76 permanent disability cases and 1648 non-permanent disability cases have been reported till October 2015. On the other hand according to the reports of Occupational Health Division, Malaysia in year 2014, a total of 2648 occupational diseases and poisoning cases have been reported. Out of these reported cases, 2001 have successfully been diagnosed and investigated in order to bring improvements at workplace in terms of occupational health. Only 1 case has been reported due to psychosocial risks and problems mainly because psychosocial risks are ill-addressed with a limited knowledge in developing countries and Malaysia is of no exception. The cases revealed that manufacturing sector is top of the list amongst other sectors with a total of 1641 cases.

The nature of the psychosocial risks is complex that covers three dimensional issues relating to workers, general environment and work itself. Therefore, this study has shed light over the psychosocial quantitative and qualitative demand factors over the workers' health and wellbeing that have emerged because of the changing working environment that goes beyond the industrialized context and highlighted the need of an intervention model that should focus on workplace and contextual issues. In this study biomarkers will be used to measure the health and wellbeing of the workers working in the petrochemical industry of Malaysia. Biomarker is defined as a substance that can be used as an indicator of a biological state. They can be used to objectively measure the physiological response to psychosocial stressors. Biomarkers (blood pressure) will be used to determine the health status of the workers who are being affected with the workplace demands. This study will be helpful by addressing the part of information gap in terms of psychosocial risks in developing countries.

### **Theoretical Framework and Hypotheses Development**

The Job Demands-Resources theory postulates that every occupation surrounded by different risks factors in association with job that are classified into two broad categories i.e. Job Demands and Job Resources. Irrespective of any job demands and resources involved this theory may be applied to any occupational setting (Bakker and Demerouti 2007). Quantitative demands i.e. amount of work required and the time frame for task completion, whereas

qualitative overload occurs with the lack of resources and skills accompanied by an individual to adequately fulfill their job requirements. Many studies have discussed the importance of both qualitative and quantitative demands are important predictors of health and wellbeing (Leka and Houdmont 2010).

### ***Psychosocial Workplace Demands and Employee Wellbeing***

It is widely known that the psychosocial environment at work has a deteriorating effect on health along with the organizational outcomes like effectiveness of work and performance (Bond et al. 2008). Over the years many scientific researchers have confirmed the relationship with the help of empirical findings; job characteristics and employees health having a significant influence on physical and mental well-being for example burnout, job strain or coronary heart disease (Rabe et al. 2012).

Job demands are those “social, psychological, physical or organizational aspects of the job that require sustained physical and/or psychological effort or skills and are therefore associated with certain physiological and/or psychological costs”. Examples are a high work pressure, poor physical environment and increasing demanding interactions with clients (Bakker and Demerouti 2007).

Organization job demands normally differ in high-risk environment (like: petrochemical industry) here employees have to deal with tough physical environment, interact with hazardous materials and also have to face the cognitively challenging work which may leads to an utterly unlike set of results for employees such as work place accidents, injuries and fatal accidents (Nahrgang et al. 2011). Long working hours and shift works are the work stressors that vary significantly both in quality and quantity. Long working hours means less sleep, which is one of the causes of errors and accidents in workplace. Long hours also create a problem of work-life balance which becomes a potential source of stress and ultimately the cause of accidents (Wagstaff, A. S., and Lie 2011).

Emotional demands are those aspects of the job that require continued emotional effort because of interactional connection with clients. Emotional demands along with work pressure and role ambiguity can lead to exhaustion and sleeping problems. Studies have constantly shown that different forms of job demands trigger the health impairment process which further leads to increased health problems like psychological distress (Dollard and McTernan 2011; Schaufeli and Bakker 2004; Bakker and Demerouti 2007). Hence, this paper proposes further hypothesized the relationship between psychosocial quantitative and emotional demands with the health and well-being in relation to JD-R:

**H1:** Psychosocial quantitative demand has negative impact on employee health and wellbeing.

**H2:** Psychosocial emotional demand has negative impact on employee health and wellbeing.

### ***Psychosocial Workplace Resources and Employee Wellbeing***

Job resources refer to those “social, physical, psychological or organizational facets of the job that are either useful in achieving work goals, reduce job demands and the associated physiological and psychological cost that motivates personal growth with learning and development”. Job resources can be rewards, social support, interpersonal relations, feedback and job control besides many others that buffer the effect of job demands (Bakker and Demerouti, 2007). Extensive job demands either quantitative and qualitative workloads and

time constraints when integrated with lack of resources are likely to lead to mental strain and cardiovascular disease particularly when social support is low (Hammer et al. 2004).

Research in job stress over the years has tried to identify the job characteristics in the form of job resources such as social support from colleagues and supervisors that moderate the relationship between the job demands and employee health and well-being (Tooren and Jonge 2010). Social support is a social characteristic which is likely associated with the engagement of the employee where they are more willing to engage in behaviors that facilitate social context (Christian 2011). A study conducted by (Panatik et al. 2012) in three Malaysian universities for Effort-Reward Imbalance (ERI) testing on job satisfaction and turnover discussed that many psychosocial factors may increase employee job satisfaction if the social support is high. Behavior of employee vary from organization to organization depending upon the kind of working environment they are providing but implicit rules about work performance, attendance, commitment, social relations and interaction patterns will exist in most workplaces. In this study we are looking for the social support from colleagues and supervisor. Supervisor support refers to employees' perceived social support from supervisors including instrumental and emotional support (Law et al. 2011).

In a study conducted by (Kim et al. 2014) on a large country based cohort of Korean adults found that lower body mass index and social support caused depression. They further added an active psychosocial approach frontier to depression if the social support is high that lead to increase the health and well-being. Hence, this paper proposes further hypothesized the relationship between psychosocial social support and with the health and well-being in relation to the JD-R:

**H3:** Psychosocial social support has a positive impact on employee health and well-being.

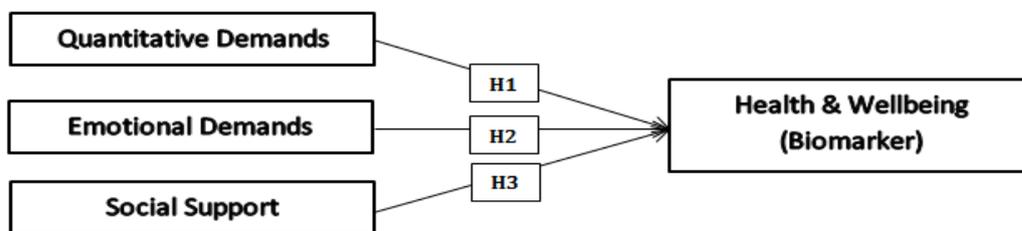
### **Health And Wellbeing In Relation With Biomarkers**

In this ever changing environment, increasing economic, social and technological pressure has made work the most important element for many individuals as it not only provides an income but it also facilitates social status, personal development and identity, self-realization and growth. This new way of work has brought a new way of stress, specifically psychosocial risk factors. For the past decade employee psychosocial risk at work is a phenomenon of growing concerns and it has a profound impact on employee wellbeing. Within the domain of behavioral sciences specifically occupational health psychology a lot of emphasis is given on the wellbeing of employees both physical and mental. Wellbeing is a complex concept and is being influenced by various organizational factors. So, high job performance with limited rewards and resources leads to excitation and stress that ultimately effect the wellbeing of the employee (Karanika-Murray and Weyman 2013; Steptoe 2011; Rabe et al. 2012).

According to World Health Organization (WHO) normal adult blood pressure is defined as a "blood pressure of 120 mm Hg when the heart beats (systolic) and a blood pressure of 80 mm Hg when the heart relaxes (diastolic). When systolic blood pressure above 140 mm Hg or equal to and/or a diastolic blood pressure above 90 mm Hg or equal to then the blood pressure is considered to be raised or high" (WHO 2014). There has been great concern that social scientists have paid a very limited attention over the fact that blood pressure could play an integral part as a relevant wellbeing variable and the relationship at the individual level between the two i.e. wellbeing and blood pressure is also not perfectly understood (Blanchflower and Oswald 2008).

### A Proposed Conceptual Model

After thoroughly review the literature, authors of this study reached on a point to link several important ideas and present a conceptual framework that has developed unifying the various research standards (Figure 1). The model features quantitative demands and emotional demands (independent variables) as stressors towards the employee health and wellbeing (dependent variable). The model also position social support (independent variable) as a motivational path to limit the stressors and its impact on the employee’s health and wellbeing. In this study the researcher is proposing the impact of two psychosocial workplace job demands (quantitative and emotional demands) and a job resource (social support) on workers’ health and wellbeing. The targeted population is the workers who work during the production and operation process in petrochemical industry of Malaysia.



1: A proposed conceptual framework

Figure

### Methods

#### *Study Design and Study Sample*

Mixed methods technique i.e. qualitative and quantitative for data collection and/or analysis will be used for this study to attain and achieve a range of outcomes (Hanson et al. 2005). In order to explore the complex research questions, the mixed methods design can provide pragmatic advantages (Driscoll et al. 2007). Qualitative methods by conducting semi structured interviews will be used to explore the information required from the top management whereas the individual’s perspective will be investigated within the workers by using the Quantitative methods. The interviews conducted with the top management will further be analyzed by using the thematic analysis method. The purpose of exploratory interviews is to combine ideas on the psychosocial workplace factors and occupational safety, health and wellbeing policies in the industry. In quantitative method, questionnaire survey will be used on the workers who are directly intact and involved in the production and operation process/site. The questionnaire design will be in accordance with the data gathered via qualitative research and with the help of existing tool kits and measurement scales provided by the Copenhagen Psychosocial Questionnaire (COPSOQ). The advantage of using COPSOQ II questionnaire is that it is not limited to single theory (Kristensen et al. 2005). Moreover, COPSOQ is a well establish, reliable and valid tool for workplace surveys and interventions on the assessment and improvement of the psychosocial workplace (Rabe et al. 2012). As, we have to measure the blood pressure so in addition to the distribution of the questionnaire consent of participation form will also be attached with the questionnaire and it will be make sure that participants can withdraw at any time from the research if they feel that their health is at stake during the

measurement of blood pressure. G\*Power 3.1 software will be used to estimate the sample size by conducting A Priori analysis.

### **Measurements**

We will measure the independent psychosocial workplace factors/variables like quantitative demands and emotional demands as psychosocial job demand factors whereas, social support as psychosocial job resources factor. Quantitative demands were measured by 4 items scale consisting of the items like ‘do you have enough time for your work tasks?’ and emotional demands is measured by 3 items scale consisting of the items like ‘Is your work emotionally demanding?’. Social support as psychosocial job resources factor measured by 4 items scale consisting of the items like ‘How often do you get help and support from your colleagues?’. All the psychosocial work environment factors which are independent variables in our study were measured with a five-point response scale (always, often, sometimes, seldom, never /hardly ever). Finally, the analysis will be done by using by using the SmartPLS 3.0 a Structural Equation Modeling (SEM) technique. PLS-SEM is a causal modeling approach aimed at maximizing the explained variance of the dependent latent constructs (Hair et al. 2011).

### **Conclusion**

We are living in the era of advance technology and globalization where the world has captivated itself with modern equipment, all these development has increased the efficiency and effectiveness of the plants around the world but all have failed to provide a better working environment, enhanced health and wellbeing of the employees and to control accidents that are growing at substantial rates. In fact the lack of training, improper management, high job demands with almost negligible job resources have significantly affecting the mental health of the employee and it is the area of major concerned. The proposed study will look into the root causes and provide an empirical insight of those psychosocial risks which effects on the health and wellbeing. Moreover the results of this study will help the government, regulators, policy makers, board of directors in devising a proper human resource management system specifically in Petrochemical Industries of Malaysia which will work as mechanism to reduce the psychosocial risks with effective policies and proper resources.

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# The Impact of Regulatory Function on Supply Chain Resilience: Reliability of Measurement Scales

**Osaro Aigbogun\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: osaro.aigbogun@gmail.com*

**Zulkipli Ghazali**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Radzuan Razali**

*Department of Fundamental and Applied Science  
Universiti Teknologi PETRONAS, Malaysia*

*\* Corresponding author*

## **Abstract**

**Purpose:** In this research, the *Halal* Pharmaceutical supply chain is being studied in relation to principals and agents' relationship in business. Conventional regulation governs this relationship by means of legislation, enforcement, control and monitoring. However, the Malaysian *Halal* regulatory authority (JAKIM) goes a step further by participating in this relationship. It does this by acting as an integrative agent in the multiple principal-agent relationship, thereby resolving the conflict of interests that arises in a typical principal-agent relationship. A conceptual framework that includes 'Regulatory function' as a mediator, has been proposed to enhance resilience in the Pharmaceutical supply chain. This paper reports the reliability results of the measurement scales for the pilot study

**Design/methodology/approach:** To test the adequacy and feasibility of the study protocol, a structured type questionnaire based on the SCRAM<sup>®</sup> 2.0 tool was piloted to the target research population. Cross sectional face-to-face convenience survey of 78 respondents from 13 pharmaceutical manufacturing companies was carried out. The reliability level of the measurement scales was verified by determining the internal consistency. This was done by computing the average inter item correlations by means of Cronbach's alpha.

**Findings:** The findings of the study reveal Cronbach alpha values above 0.70. There is a conventional lower limit of 0.70 for the Cronbach's alpha which is generally accepted

**Research implications:** Differences that exists in the context, scope and environment of the present research necessitates a formal reliability test be carried out on the adapted research instrument. The acceptable statistical values obtained, shows that the instrument is reproducible and can thus be used for the main study

**Keywords:** Supply chain, Logistics, Resilience, *Halal*, Regulation, integration, Pharmaceutical industry

**Paper Type:** Research paper

## Introduction

Resilience is a feature of establishments that are able to anticipate disruptions and proactively manage supply chain risks. Ling (2007) agrees that these establishments are better positioned relative to their competitors in dealing with High-Impact-Low-Probability (HILP) supply chain risks, hence gaining sustainable competitive advantage.

In the management of supply chains, contemporary focus has shifted to devising ways in which viable strategies can be adapted to enhance resilience. In this research, the supply chain is studied from the perspective of the Agency theory. Agency theory assumes that social life is a series of contracts, explains the relationship between principals and agents in business (Perrow, 1986). The Principal is the delegating authority who acts as the customer in need of goods and/or services; while the Agent is the contractor, who is the provider (supplier) of the goods and/or services.

Implementation of risk management strategies in the supply chain is still in its infancy. Although supply chain risk is unavoidable, the challenge is that the conventional reactive approach to risk management is inadequate and cannot be employed for unforeseen risks (uncertainties) because it is too slow and harm is done before response starts to work. Many researchers have proposed resilience as the solution for supply chain risk management. Resilience is a proactive approach which helps to side step avoidable risks and bounce back quickly from unavoidable risks (uncertainties) in the supply chain.

More than 80% of global companies are now concerned about supply chain resilience (Accenture, 2013). Over the last 12 years, resilience has dominated the discussions in the supply chain risk management literature. Most of the studies on supply chain resilience have concentrated on isolating the antecedents that predict supply chain resilience. However, researchers have failed to notice that in highly regulated industries (e.g Pharmaceutical industry), emergency supply chain disruptions that extensively disrupts national economy and wellbeing of the population require broader solutions. Among the suggested solutions are governmental controls through regulatory functions (Network, 2011; Preston et al, 2012; Burger and Warner, 2012). Conventional regulatory functions involves legislation/policies, control, enforcement and monitoring. On the other hand, *Halal* regulation goes a step further by playing a participatory role in the supply chain. This it does by aligning regulatory functions with integrative supply chain relationships (Aigbogun, Ghazali and Razali, 2014; 2015). This role is ill-reflected in the literature, and questions still exists regarding the impact of regulatory functions on supply resilience.

Threats to the Pharmaceutical supply chain is increasing. Today, due to globalization of operations, the pharmaceutical industry has become more vulnerable to disruption risks. This has made the Pharmaceutical industry 50 percent riskier than the overall S and P 500 (Eyinda, 2009). This high risk is due to supply disruptions, which is ranked as the highest threat to its survival (Eyinda, 2009). If this problem is ignored; more resources will be required to handle the cascading problems resulting from the large cost of error and reactivity (Eyinda, 2009; Mustaffa and Potter, 2009; Turhan and Vayvay, 2009). Because pharmaceutical products are crucial input into healthcare treatment, this problem could result in missed critical delivery deadlines, revenue loss, lost business, and further damage to the Industry's quality reputation. As a crucial player in the healthcare industry, the pharmaceutical manufacturing industry supply chain needs an integrated resilient approach to supply chain management. This is in order to sustain continuous supply and respond proactively and quickly to unavoidable supply chain disruptions

It however remains a matter of concern, that till date the role of regulatory participation in supply chain resilience has not been studied. To bridge this gap, it is therefore necessary to examine the integrative impact of Regulatory function on supply chain resilience. To fulfil this purpose, a hypothetico-deductive study has been designed.

By means of non-structured interviews, dimensions of resilience predictors (capabilities and vulnerabilities), and *Halal* regulatory integration, unique to the Malaysian pharmaceutical manufacturing supply chain have been extracted in previous research (See Aigbogun, et al., 2014). Consequently, this will be used to gather cross sectional survey data by means of structured questionnaires in a major industry-wide survey. However, in agreement with Polit et al. (2001), a pilot study is necessary to be carried out in preparation for the major survey. This is in agreement with Saunders et al. (2009) and Zikmund (2003), who assert that a pilot study is critical in order to determine the feasibility of the proposed data analysis techniques, as well as to the test the reliability and improve the internal validity of the questionnaire items.

The results of the proposed data analysis technique from the pilot study has been reported in Aigbogun et al. (2016). Thus, the results of the reliability tests of the measurement scales serves as the objective of this paper. Sekaran and Bougie (2010), defined reliability as “An indication of the stability and consistency with which the instrument measures the concept and helps to access the goodness of a measure”. The paper therefore reports the reliability results of the survey instrument used in the pilot study. This objective has been met by testing the internal consistency of the measurement scales by means of their Cronbach alpha values.

### **Methodology**

According to Zikmund (2003), the major objective of a pilot study is to check the reliability of the measures and enhance the items of the survey instrument. Reliability refers to the extent in which a set of items in a given scale are internally consistent with one another (Singh et al. 2006; Hair et al. 2010)

For a pilot sample, Treece and Treece (1982) suggests 10% of the main study size. Lackey and Wingate (1998) also suggest 10%. Based on extant literature, Connelly (2008), recommends a pilot sample that consists of at least 10% of the size of the main study. Based on these recommendations, a pilot study has been carried out over a period of two months. The present pilot study has been based on cross sectional face-to-face survey of 78 respondents from 13 pharmaceutical manufacturing companies operating the *Halal* supply chain in Malaysia. This number represents a response rate of 86% of the total number of questionnaires distributed for the pilot survey; and 13.8% of the total target research population for the main study.

According to Peck (2005), “no one person manages the whole supply chain”. Therefore, multiple respondents at the managerial level from critical functional areas (Logistics/Scheduling/Planning; Research and Development; Purchasing/Procurement, Quality Assurance) of each organization supply chain have been recruited. This has been done in agreement with Pettit et al., (2008), as well as Mahbulul and Rafikul (2013), in order to reduce individual bias, while efficiently encompassing the breadth of issues relating to supply chain resilience.

The SCRAM© 2.0 developed by The Centre for Resilience, Ohio State University (Pettit et al., 2008) has been adopted and adapted for this study to measure Capabilities and Vulnerabilities. Measurement scales for Regulatory integration (Mediating variable) has been adopted from Chen, Daugherty and Roath (2009) and adapted to fit the context of the present study. The questionnaire is divided into two sections. Section A and Section B.

The section A contains items to provide the demographic profile of the respondents as well as their organizations. This is necessary in order to assess the suitability of the respondents taking part in the survey, as well as their authority, professional experience and knowledge of their organizations product and supply chain operations. Section B contains items categorized according to the dimensions of Supply chain Vulnerabilities (turbulence, external pressures, sensitivity, and connectivity), Capabilities (flexibility, visibility, collaboration, adaptability, capacity, and supplier dispersity) and Regulatory integration (process connectivity, and process simplification). The responses have been anchored on a five point Likert's scale ranging from 1- Strongly Disagree; 2- Disagree; 3- Neutral; 4 – Agree; 5 - Strongly Agree.

Furthermore, the respondents have been given a choice to take part in the survey in English or Bahasa Melayu (BM). A certified BM translator have been engaged to translate the English copy of the questionnaire into BM. Two other BM experts have been solicited to back translate the BM version into English and compared with the original English copy. This was done to ensure equivalence of both versions (Chen, et al., 2009; Dillman 2000). The respondents and organizations have been assured of their rights to privacy and confidentiality of information.

To determine the reliability of the scales in the questionnaire, the collected data has been analysed statistically using SPSS version 21.0. The reliability level of scales in the questionnaire has been verified by calculating the Cronbach's alpha coefficient value of the items (Sekaran, 2003; Hair et al., 2010), in order to measure the internal consistency.

## Results

### *Demographic Profile of Respondents*

Table 1 below shows the descriptive statistics for each demographic factor in this study

**Table 1: Summary of descriptive demographic factors**

<b>Demographic Factor</b>	<b>Category</b>	<b>Frequency</b>	<b>Percent</b>
Key supply chain function	Purchasing	36	46.2
	Logistics/Planning/Scheduling	33	42.3
	Quality assurance	7	8.9
	Research and Development	2	2.6
Job designation	General manager	13	16.7
	Departmental head/Assistant manager/Deputy manager	28	35.9
	Senior executive	32	41.0
	Junior executive	5	6.4
Length of service in present role	Less than 2 years	2	2.6
	2-5 years	11	14.1
	6-10 years	38	48.7
	More than 10 years	27	34.6

In respect to the key functional areas of the supply chain, out of a total number of respondents (N = 78) that have taken part in the pilot study, 36 are from purchasing department making up 46.2% of the total number of respondents. 33 (42.3%) are from the Logistics/Planning/Scheduling department. 7 (8.9%) of the respondents are from the Quality

Assurance department while 2 (2.6%) respondents from Research and Development department have taken part in the field survey.

In respect to the job designation of the survey respondents, out of a total number of respondents (N = 78) that have taken part in the survey, 13 are General Managers making up 16.7% of the total number of respondents. 28 (35.9%) are Departmental Heads. 32 (41.0%) of the respondents occupy senior executive positions in their various departments, while 5 (6.4%) occupy junior executive positions in their various departments.

As regards the length of service and professional experience in their present role, the following responses were gathered. 2 of the respondents have spent less than two years in their present role making up 2.6% of the total survey population (N = 78). 11 (14.1%) respondents have spent between 2 and 5 years in their present role. 38 (48.7%) of the respondents have spent between 6 and 10 years of professional experience in their present role, while 27 (34.6%) respondents have over 10 years of professional experience in their present roles. All the organizations that have taken part in the survey are pharmaceutical companies who engage in the manufacture of *Halal* pharmaceutical products

### Reliability Results

According to Hair et al. (2010), a crucial step in the validation of the questionnaire is to check the reliability of the items. This is so as to be certain about the precision and consistency of measurement, in order to reduce the measurement errors. Having said that, the internal consistency reliability test was employed in this study.

The internal consistency of the measures was determined by computing the average inter item correlations by means of Cronbach's alpha. Measures are generally reliable with the occurrence of greater correlation between other measures, or greater Cronbach's alphas. The Cronbach alpha coefficient has no standard limit, however, there is a conventional lower limit of 0.70 for the Cronbach's alpha which is generally accepted. This is supported by George and Mallery (2003) who stated that, for instruments to be considered reliable, the acceptable value of the Cronbach's alpha coefficient should be 0.70 or greater.

Reliability testing was performed for all the items except the items related to the demographic profile of the respondents.

**Table 2: Reliability Test Results of the Measurement Scales**

Constructs	Cronbach Alpha	No. of items
Turbulence	0.749	6
External Pressures	0.863	6
Sensitivity	0.765	9
Connectivity	0.796	7
Flexibility	0.761	5
Visibility	0.712	7
Collaboration	0.809	7
Adaptability	0.960	5
Capacity	0.705	5
Supplier Dispersion	0.863	5
Process Connectivity	0.848	7
Process Simplification	0.832	7

According to the results seen in the table 2 above, all the scales met the required Cronbach's alpha and were considered reliable (Hair et al., 2010; George and Mallery, 2003; Sekaran, 2003; Chronbach, 1951)

### **Conclusion And Future Work**

A set of questionnaires was piloted to 13.8% of the main target research population in order to determine the reliability of the measurement items. And also to test the comprehensibility of the instructions, and the wordings of the instrument. This paper reports the reliability results of the measures.

The reliability test for internal consistency of scales used in the questionnaire were verified by calculating the Cronbach's alpha coefficient value of a set of items. The reliability testing was constructed separately for each measurement. According to the results, all the scales met the required Cronbach's alpha (above 0.7), and thus were considered reliable. This result assures of the ability of the survey questionnaire to create reproducible and consistent results

Previous research on supply chain resilience have concentrated efforts on qualitative assessments and explorative deductions. This has been a major hindrance in drawing statistical inference about causalities. However, recent studies (Ubidia, 2014; Amir et al., 2013) have advanced techniques for quantifying supply chain resilience. This paper is intended to contribute to this advancement.

The next phase of the study will be to conduct the main field survey and then test the research hypothesis. The results from the research will provide a new understanding in the management of the Pharmaceutical supply chain as well as create critical insights for decision makers through policy formulations and guiding principles. These findings will be beneficial in strengthening our understanding of the subject matter by specifying the conditions under which the relationships between the predictors and outcomes are significant. This is an aspect that has previously not been explored. Also, the findings will contribute to rethinking our approach on supply chain resilience, and we can begin to implement unique solutions to the problem.

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# Core Self-Evaluations and Work-Family Conflict as Correlates of Teachers' Intrinsic Motivation: A Proposed Framework

**Zurina Abu Bakar\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: zureen2909@gmail.com*

**Rohani Salleh**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

\*Corresponding Author

## **ABSTRACT**

**Purpose:** *An argument on core self-evaluations (CSE) as a broad construct of personality is determine to be a great antecedent of work-family conflict (WFC), in such would be an interesting topic to be explored to enrich work-family literature. CSE is a structured by four specific traits including self-esteem, general self-efficacy, neuroticism and locus of control. Basically, CSE is introduced as conceptualization of dispositional traits, obviously contribute to important of intrinsic motivation. Thus, this paper proposed a conceptual framework that relates CSE and WFC. Moreover, it is recommended to study on how WFC would give impact on intrinsic motivation since the relationship between this constructs very limited in the literature. It is suggest that CSE is vital and critical to the process of balancing work and family demands which in turn influence intrinsic motivation. To conclude, the proposed conceptual framework in this study contributes to incorporate the position of WFC as mediator between CSE (independent variable) and intrinsic motivation (dependent variable). Overall, it is recommended to further study on this particular.*

**Design/Methodology/Approach:** *The endeavor of this paper is to synthesize and review empirical literature concerning to the intrinsic motivation as an outcome of WFC. It also expected to extend a conceptual model of the WFC variables from the perspective of the CSE. Findings – Result suggests that there are inconsistency findings on the relationship between CSE and WFC. In addition, empirical study suggested CSE are more important to the female teachers compared to the male teachers. Therefore, considering the importance of teachers' intrinsic motivation concept, and limited study on local empirical studies regards to the mentioned variables, this study intend to explore the relationships between the composite CSE, and intrinsic motivation on secondary school teachers in the hopes to identify better factors for motivating and enhancing teacher performance, indirectly. After all, this study expects that the results will be a great addition to literature on the variables. More research definitely needed in the future to further establish core self-evaluation in education.*

**Originality/value:** *The scarce of knowledge concerning on work-family literature is still exist, whereby researchers and scholars still do not expose very much on how dispositional factors*

*may influence WFC. Considering the importance teachers' motivation concepts and limited studies on the variables, particularly in Malaysia context, it is expected to investigate the impact of CSE on intrinsic motivation level among secondary school female teachers with the existing WFC as mediator. As such, scholars have opportunity to contribute in the literature of work family and personality research as well as the significant CSE in term of theoretical and empirical work.*

*Keywords: Core Self-Evaluations, Work-Family Conflict, Intrinsic Motivation*

### **Introduction**

The increasing number of working women in many professions has made the conflict in handling work and family roles to become more challenging and complex (Bakar and Salleh, 2015), therefore since then the need to balance work and family has become universal phenomenon across the globe (Aycan, 2008). Although many studies in the area of work-family conflict (WFC) has been accomplished since last 40 years (Kroeker, 2008), nevertheless obviously there is still much to be explored about how and why individuals keep experiencing conflict at work and at home.

Accordingly, Greenhaus and Beutell (1985) defined WFC as a type of inter-role conflict whereby the role demands derived from one domain (work or family) are incompatible with role demands which comes from another domain (family or work). Specifically, WFC is a type of effort in confront with role pressure that occur in work place which could give effects on family sphere and it was commonly mutually incompatible (Ghayyur and Jamal, 2012). Frone, et. al., (1992) determine that WFC consist of two construct which are work interfering with family (WIF) and family interfering with work (FIW). To further explain, WIF arises when work role demands is interfere with family role demands, whereas FIW occurs when family role demands is interfere with work role demands. Generally, WFC may happen regards to spending less time at home, lengthy working hours, and inflexible working schedule. In particular, women who determine to build a career and nurture their children simultaneously will experience WFC most. Therefore, this inconsistency situation may contribute to common problem at work such as fatigue, poor performance, feeling oneself less competent at work, and leaving the job (Netemeyer et. al., 1996; Allen et. al., 2000). Moreover, work and family life together can give important impact on teachers' behaviors and teachers' professional life as well.

In Malaysia, the education sector has always been given the highest priority by the government. Nevertheless, the focus on achieving the Vision 2020 has made the roles of teachers to become increasingly difficult and challenging. In fact, nowadays teaching in the current environment requires teachers to be highly mentally, emotionally and physically prepared (Tang et. al., 2014), in the sense to advance and sustain the standard of the teaching profession. However, (News Straits Times, 2013) reported that teachers are always being burdened with administrative and clerical tasks. Hence, due to these increasing work demands, teachers may have the potential to bring home their work problems, eventually can creating conflicts at home. Gurcu (2014) in his study pointed out that teachers mostly expressed their problems as follows; unable to avoid thinking of work problems at home, chores works contributing to physical and mental fatigues and work-related problems causing teachers to feel stressed and restless at

home. If these conditions continuously happen, it would lead to increase the teachers' WFC and eventually contribute to low motivation, poor work performance and job attitudes as well as generating job stress among employees (Netemeyer et. al., 2005). Gokce, F. (2010) argued that motivation levels are more important compare to teachers' professional competence and play the most important role in student learning.

Although previous researches in work-family models of conflict and strain has examined many factors, nevertheless only few studies have considered the role of personality as an antecedents (Haines et. al., 2013; Michael et. al., 2011; Bruck and Allen, 2003; Boyar and Mosley, 2007), past research has been limited in other ways as well (Kroeker, 2008) which lack of knowledge about how individual dispositions and traits that influence WFC. Latest studies (Haines, et. al., 2013; Kroeker, 2008; Allen et. al., 2012) remarked that the examination on work – family models have focused more on situational variables compare to dispositional variables. Therefore, the scarce of knowledge concerning on WFC still exist, whereby researchers and scholars still do not expose very much on how dispositional factors may influence work family conflict. Considering the importance teachers' motivation concepts and limited studies on the variables, particularly in Malaysia context, it is expected to investigate the impact of core self-evaluations on intrinsic motivation level among secondary female school teachers with the existing WFC as mediator. As such, scholars have chances to contribute in the literature of work-family and personality research the significant core self-evaluations in term of theoretical and empirical work.

Hence, the endeavor of this paper is to synthesizes and review empirical literature pertaining to the intrinsic motivation as an outcome of work-family conflict. It also expected to extend a conceptual model of the work-family conflict variables from the perspective of the core self-evaluations. In addition, since not much is known on the link between the role of WFC as mediator between core self-evaluations and intrinsic motivation, therefore this study is proposed to explore these constructs. It is suggested that core self-evaluations will give impact to work-family conflict, which in turn affects employees' intrinsic motivation. Overall, recommendations for further studies on this particular are proposed.

## **LITERATURE REVIEW**

### ***Core Self-Evaluation***

The basic idea of core self-evaluation (CSE) traits is first proposed by (Judge et. al., 1997) which explained differences in individual who experiences of WFC and to produce a reliable measurement on personality traits. Accordingly, core self-evaluations are the elementary and subconscious appraisals that individuals make about themselves as worth, competence and capable (Judge et. al., 1997). Early studies in this particular was examined CSE without focusing on specific measurement (Brunborg, 2003), however rather by combining separate measures of self-esteem, locus of control, generalized self-efficacy and neuroticism. For that reason, Judge et. al., (2003) then introduced the CSE scale by assembling twelve items that loaded strongly on the CSE factor (, 2003). Nevertheless, many studies investigated on the utilization of personality traits has highly focus on the Big Five taxonomy. Core self-evaluations is different from Big Five in the context that it is broader in scope of personality itself (Chang et. al., 2012), core self-evaluation underlies four specific traits including as self-esteem, neuroticism, locus of control and generalized self-efficacy.

In addition, (Bono and Judge, 2003) also noted that the abovementioned four traits are saturated with the core self-evaluations construct, which implies that they are share similar criteria and interrelated with other variables. To support, previous findings have verified that each traits are highly correlated (Judge and Bono, 2001; Judge et. al., 2002) and they load on a higher order factor (Sharon Pinsker, 2012; Judge et. al., 2000; Judge et. al., 1998). Basically, *neuroticism* refers to emotional instability and a tendency to be worried, unconfident and nervous (Srivastava et. al., 2010). While *self-esteem* is the level to which individual sees theirself as worthy (Rosenberg, M. 1965). In 1966, Rotter define *locus of control* as the belief that desired effects result from one's individual behavior rather than by fate or powerful others. People with an internal locus of control see themselves as competent of shifting their environments, while people with an external locus of control see themselves as at the compassion of the environment or fate. Lastly, *generalized self-efficacy* is view as an approximation of individual's ability to cope and perform the given work successfully within an extensive variety of circumstances (Chen et. al., 2004).

Although core self-evaluation has obtained some popularity in other fields of study, nevertheless only few researches are conducted in self-evaluation of teachers including Ross and Bruce, 2007; Judge, 2009; Kammeyer-Mueller and Judge, 2009). In most cases, empirical findings has shown that, a broad of CSE factor has predicts such outcomes including job satisfaction, motivation, life satisfaction, job performance and stress better than any individual core trait does (Judge et. al., 2002). Specifically, in particulars, study suggested core self-evaluations are more important to the female teachers compared to the male teachers. This is because female teachers in most cases have better control of the classroom and greater educational achievement of their students; nevertheless tend to use less intervention style in classroom management (Rahimi et. al., 2013). Therefore, considering the importance of teachers' intrinsic motivation concept, and limited study on local empirical studies regards to the mentioned variables, this study intend to explore the relationships between the composite CSE, and intrinsic motivation on secondary school teachers in the hopes to identify better factors for motivating and enhancing teacher performance, indirectly. After all, this study expects that the results will be a great addition to literature on the variables. More research definitely needed in the future to further establish core self-evaluation in education (Barrett Lea Adams, 2014).

### ***Core Self-Evaluation and Work Family Conflict***

In their study, Judge et. al., (2000) argued that a person with high core self-evaluations might face with challenge in controlling multiple role demands successfully between work and family spheres, which result in overload whereby there is a too many responsibilities and required demand to be accomplish within little time, thus creating more conflict. However, previous studies shown that a person with positive core self-evaluations was reported to be able deal with various stressors such as work-family conflict (Boyar and Mosley, 2007; Best, Stapleton, and Downey, 2005; Karatepe, Haktanir, and Yorganci, 2010). On the other hand, (Judge et. al., 2004) determined a positive core self-evaluations in oneself will has high levels of self-efficacy and self-esteem, is emotionally stable (neuroticisms) and would feel that he or she is in control of the events in his or her life. This is because core self-evaluations basically generating fundamental assessment that people worth and value themselves (Brunborg, 2008). Due to these characteristics, Friede and Ryan (2005) believed that an individuals with comparatively optimistic core self-evaluations would experience lower conflict between work and family

environment because they have higher levels of self-efficacy and self-esteem, as well as an internalized locus of control and emotionally stable (neuroticisms) should act as a barrier in order to face with conflicts arise.

To further explain, while conflicts between work and family occurred, such individuals with optimistic core self-evaluations definitely should react calmly, and they have positive thought about their ability to cope with the conflict, solve the problem, prevent future conflicts, or change an undesirable situation. Although no prior studies have been done on the link between core self-evaluations and work family conflict (Kroeker, 2008), previous studies conducted (Kinnunen et. al., 2003; Martin, and Sanders, 2003) have confirmed there is the relationship between the various components of core self-evaluations and work-family conflict. Therefore, previous study has shown that core self-evaluations traits can be a good dispositional indicator for work family conflict. In addition, (Kroeker, 2008) also found that an individual with high core self-evaluations were reported to have less work-family (and family-work) conflict within one study (Boyar and Mosley, 2007). However, as aforementioned before, Judge et. al., (2004) found that core self-evaluations are better measurement concept than focusing on more deep, singular traits because the core self-evaluation traits are highly correlated with each other. Specifically, measuring core self-evaluations together as one trait, the researcher gets a broader picture which reflects the global nature of evaluative statements that people make about themselves.

### ***Core Self-Evaluation, Work Family Conflict and Intrinsic Motivation***

While most past studies keep addressing the antecedents correlates of work-family conflict (Voydanoff, 2004; Chang et. al., 2012) in their studies indicated that core self-evaluations contribute to enhance more variance in work-family conflict. Moreover, the finding from previous study (Haines et. al., 2013), suggested that core self-evaluations always illustrate a value beyond the work, non-work, and demographic antecedents of work-family conflict. Apparently, these results confirmed that individuals who perceived with positive core self-evaluations is tend to be motivated [Gagne and Deci, 2005), indicate that they will be more focus on the positive aspects in order to accomplish the task in hand, hence encourage more intrinsic motivation (Chang et. al., 2012).

According to (Dörnyei, Z., and Ushioda, E., 2013), motivation refers to processes that affect individuals' stimulation, potency and direction of behavior. Many studies investigated by such researchers have established that there are particularly two factors that affect teachers' motivation (Dinham and Scott, 2000), namely as intrinsic and extrinsic motivation (Stemple, 2004). First, intrinsic motivation plays a vital indicator to motivate and promoting teachers willingness to enter or remain in the teaching profession (Herzberg et al., 1959, Ololube, 2007). In such, it is about the behaviors which driven by internal rewards (Barto, 2013), individuals simply enjoy an activity or grab any opportunity to explore, learn, and fulfill potential (Coon and Mitterer, 2010). In contrast, (Tyagi, 1985) defined the extrinsic motivation as externally mediated rewards such as pay and promotion which always influence individual performance. For instance, (Paulin and Bergeron, 2006) found that while organization can provide an intrinsically motivating jobs and cozy workplace conditions, become supportive and equitable, consequently they will create overall affective commitment, job satisfaction, and organizational citizenship behaviors.

According to Self-Determination Theory (SDT), in order to ensure that intrinsic motivation to be facilitated, employees need to be both interested and challenged (Ryan and Deci, 2000). In

addition, Deci et. al., (1999) mentioned that previous research conducted on intrinsic motivation has mainly focused on the long-term and directed attention to generate benefits of support and justice process. For instance, teachers are seen to be intrinsically motivated if they had achieved their goals such as improve students' performance (Covington and Mueller, 2000). The previous finding suggests that intrinsic motivation contributes to increasing job satisfaction (Miller, 2002), produce low levels of burnout (Low et. al., 2001), generating high levels of affective organizational commitment (Eby et. al., 1999) and diminish the work family conflict level (Karatepe and Uludag, 2007). To further explain, an individual who confronting work family conflict level experiences are more likely to face with intense psychological strain (O'Driscoll et. al., 2003) and less psychologically available to be involved and engaged in his/her job (May, et. al., 2004), hence they are less intrinsically motivated. Therefore, (Kroeker, 2008) suggested it is important to explore the possibility that core self-evaluations are also related to work-family conflict and intrinsic motivation, in such it shown inconsistent finding from latest study by (Zachary Sheaffer, 2015) whereby there is negative relationship between work-family conflict and intrinsic motivation. Therefore, teacher with intrinsic motivation are not only view theirself as self-determined to execute in their teaching activities, but it is necessary for them to sustain their efforts and willingness in order to meet professional goals (Jesus and Lens, 2005).

### ***Mediation role of Work-Family Conflict***

According to (Mauno et. al., 2006), previous researches had examined various mediator and moderator variables to show the relationship between work-family conflict and its outcomes, for instance, study on personality variables as a moderator (Noor, 2002; Kinnunen et. al., 2003; Rantanen et. al., 2005; Ibrahim, 2012). According to Kreiner et. al., (2009), an individual always plays critical roles which can affecting work-home spheres, therefore examining dispositional affects would appear to be a valuable search. Moreover, recent study by (Haines et. al., 2013) determine that work-family conflict partly mediate the association between core self-evaluations and burnout. There are studies utilized work -family conflict as a mediator between structural factors and various measures of well-being (Wang et. al., 2004; Major et. al., 2002). However, according to (Haines et. al., 2013) nevertheless, none of these previous studies treat work-family conflict as mediator have consider dispositional factors as a variables. Thus, this paper proposes work-family conflict to be as mediator between the relationship core self-evaluations and intrinsic motivation.

### **Problem Statement**

There is no argument that teachers play important roles in contributing to every aspect of the students' development towards becoming intellectually, ethically and morally upright individuals (Tang et. al., 2014). In such, the government's vision may not be accomplished if teachers have low level of motivation. Surprisingly, Sujeewa (2010) mentioned in her study that a large number of school teachers in many developing countries, Asia in particular, are poorly motivated. Ismail and Nordin (2012) strengthening that in Malaysia, teaching can be consider as the most stressful jobs among other profession which leads to low motivation among teachers. A leading newspaper in Malaysia namely News Sunday Times (2008) and News Straits Times (2013) reported that teachers in Malaysia are overloaded and being burdened with administrative and clerical tasks. Additionally, Roselina et. al., (2013) asserted that most of teachers are very enthusiastic about their core business which is teaching, however

they are always being burden and overloaded with non-academic duties. Thus, teachers in Malaysia are considered to have low concentration span leading to low work motivation and performance (Majid et. al., 2010). When teachers are less motivated they become less competent, which in turn will directly impact the students' performance leading to detrimental implications on the education system in general (Inayatullah and Jehangir, 2013).

Past research found that due to lack of motivation, teachers suffer more than other occupational groups (Keshwar and Seegum, 2012) and majority of teachers indicated that balancing between work and family commitments was stressful (Mathieu et. al., 2014). Accordingly, this recent finding also indicated that work-family conflict influence women compare to men. Not surprisingly, a study by Gupta and Gehlawat (2013) indicated that female teachers are less motivated as compared to their male co-workers. According to Ismail and Nordin (2012), female teachers experience increasing workload which in turn affects their level of motivation. This is a critical issue considering 69% of secondary school teachers in Malaysia are female (Department of Statistics Malaysia, 2013). If this situation continues, it can be detrimental to the education system in Malaysia which could give undesirable impact on the government's aspiration to become a developed country by 2020. Hence, the purpose of this paper to explore and analyze the critical factors affecting the level of motivation of secondary school teachers in Malaysia.

### **Research Questions**

Four research questions were posed to direct this paper.

1. What is the level of work motivation among female teachers in Malaysia?
2. Do core self-evaluation factors affect work family conflict?
3. Do work-family conflicts affect intrinsic motivation?
4. Does work family conflict mediate the relationship between core self-evaluation and intrinsic motivation?

### **Proposed Conceptual Framework**

A comprehensive review on literatures of core self-evaluations and work family conflict, (Kroeker, 2008) asserted in his study that there is no researchers to date have explored the link between core self-evaluations and work-family conflict, however a few (Clark, 2002; Erdwins, 2001; Kinnunen et. al., 2003; Wayne et. al., 2004; Rantanen et. al., 2005) have studied one or more of the individual traits belonging to the core self-evaluations concept and work family conflict. Due to those findings, Judge et. al., (2004) stated that "the core self-evaluations concept is perhaps the best dispositional predictor of job satisfaction" (p. 332), in such job satisfaction has significant relationship with work-family conflict. Aforementioned, the significant relationship between core self-evaluations and work family conflict is therefore important to be explored. Most probably negative core self-evaluations are not only given directly impact on work family conflict, but a consequence as well (Kroeker, 2008).

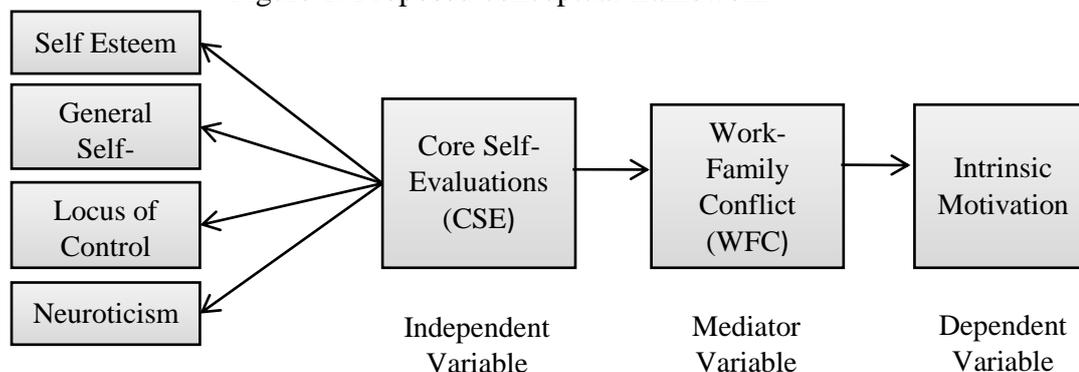
Review of the literature has highlighted that individual dispositions and traits may play a larger role in the work-family conflict process (Kroeker, 2008), show the consequences of dispositional factors on how individuals' perceived of conflict which arise at work and at home simultaneously. Therefore, it is important for researchers serves to highlight on the types of individual characteristics which is core self-evaluation traits in their studies and the areas that need of further development. To date, core self-evaluations research has made an important topic to be focused, therefore researcher also need to consider in addressing the elementary questions about the nature of the construct. To this end, in order to advance and enrich an

understanding of core self-evaluations as a whole, Chang et. al., (2012) encourages more theoretical and empirical research are needed.

In addition, individual dispositions may explain some of the findings from studies that did not include personality factors as a variable. For instance, in their longitudinal study, Pinder (2008) found that there was an important amount of daily variation of work-family conflict across time. It suggests that individual who perceived with high core self-evaluations will lead to increasing work interfering with family. Additionally, the literature has highlighted that regardless of many previous studies on the impact of work-family conflict on factors at both organizational and individual levels has been conducted, limited research however has explored on the consequences of work-family conflict and intrinsic motivation. Therefore, a study on the influence of work-family conflict on teachers' intrinsic motivation, female teachers particularly, is proposed to understand the interrelationships that exist between the former and the latter.

Furthermore, review of the literature has indicated that scarce studies have examined the function of work-family conflict as mediator in the relationships between core self-evaluations and intrinsic motivation. Thus, a conceptual framework is therefore proposed to show the links between core self-evaluations (self-esteem, locus of control, general self-efficacy, and neuroticism), work-family conflict and intrinsic motivation is, as shown in Figure 1.

Figure 1: Proposed conceptual framework



### Conclusion

To conclude, this paper proposes a conceptual framework in the relationship between core self-evaluations, work-family conflict and intrinsic motivation. Specifically, work-family conflict is launched as mediator between the core self-evaluations (independent variable) and intrinsic motivation (dependent variable). For future research, further integration of core self-evaluations and work-family conflict frameworks would appear to be a more fruitful avenue in the literature. Moreover, the proposed framework is suggested to empirically be investigated and to validate the proposed hypothetical links between suggested constructs. It is also recommended that the conceptual framework be tested among secondary school female teachers in Malaysia in order to gain better insight into the interrelationships between these constructs.

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# Gender and Ethnic Group Differences in Customer Citizenship Behavior

**Amjad Shamim\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: amjadshamim@gmail.com*

**Zulkipli Ghazali**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Zaheen Khan**

*Federal Urdu University of Arts, Science & Technology, 44000 Islamabad, Pakistan*

**Abu Bakar Sedek Abdul Jamak**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*\*Corresponding author*

## Abstract

**Purpose:** The aim of this paper is to examine the gender and ethnic group differences in the customer citizenship behavior (feedback, advocacy, helping, tolerance) of hypermarkets customers.

**Methodology:** The data for the study were collected from 200 customers of hypermarkets in Perak State of Malaysia. The differences were obtained using independent sample t-test in SPSS 21.0 software.

**Findings:** Results of the study reveal that there is no significant difference in the customer citizenship behavior between male vs. female. However, the customer citizenship behavior (feedback, advocacy, helping, tolerance) varies across ethnic groups. Between Malay vs. Chinese customers, no significant difference in all dimensions of customer citizenship behavior is found. However, a significant difference in customer citizenship behavior is found between Indian customers vs. Chinese customers, that is, Indian customers possess stronger citizenship behavior compared to Chinese customers. Moreover, a significant difference in advocacy, helping, tolerance is observed between Indian vs. Malay customers, but feedback behavior remains same for both groups. In summary, the Indian customers possess strongest citizenship behavior followed by Malay customers and then Chinese customers. These findings are important for the hypermarkets to realize the group differences in customer citizenship behavior. Hypermarkets need to emphasize on the strategies that could develop citizenship behavior of Chinese and Malays customers.

**Originality/value:** Very few studies are conducted on the demographic role in customer citizenship behavior. Especially in Malaysia which is a multi-ethnic society, this study is the first to practically examine the role of gender and ethnicity in customer citizenship behavior.

**Keywords:** Demographics, citizenship behavior, hypermarkets, Retailing, Malaysia

### **Introduction**

The hypermarket is one of the fast growing concepts of retailing. The hypermarket retailing offers fast moving consumer goods, basic household necessities such as food, vegetables, kitchen materials, cleaning materials, and durable goods under one roof (Hassan, Bakar Sade, and Sabbir Rahman, 2013). This retailing concept is not narrowed to financial and commercial advantages but also seemed as a place for social interactions (Amine and Lazzaoui, 2011; Filser, 2001). By recognizing the importance of the hypermarket retailing, Malaysia has widely accepted this retailing concept. Consequently, various national and international hypermarkets opened in the country. Presently, it has over ten national and international hypermarket brands with multiple locations in all states. The international hypermarkets are rapidly increasing its network across the country, thus making the market more competitive especially for the local market. For any hypermarket to compete in the lucrative market of Malaysia, along with various other strategies, the development of customer citizenship behavior is imperative. This is an extra-role behavior which gives benefits to the hypermarkets and is important to gain a competitive edge (Bove, Pervan, Beatty, and Shiu, 2009; Yi and Gong, 2013). The customer citizenship behavior is likely to develop when customers are satisfied by the products and services provided by the hypermarkets, they give value to the hypermarkets in reciprocal by possessing citizenship behavior such as providing feedback, advocacy behavior, helping other customers to fulfill their needs and tolerance behavior (Abdul Jamak, Shamim, and Ghazali, 2015; Shamim, Ghazali, and Abdul Jamak, 2015; Yi and Gong, 2013).

Despite of the importance of customer citizenship behavior in such market of Malaysia, the studies remains are limited to hypermarkets influence on small-scale retailers (Ranjane Kaliappan, Alavi, Abdullah, and Arif Zakaullah, 2009), its effect on retail industry (Hassan and Rahman, 2012), the perceptions of small-scale retailers to compete in industry in the presence of hypermarkets (Mohd Roslin and Melewar, 2008), hypermarket expansions (Hassan et al., 2013), the socio-economic development of the country (Hassan, Mahdee, and Sade), corporate brand experience and customer value co-creation behavior (Shamim, Ghazali, and Albinsson, 2016) among others. In customers' behavior research, the existing researches mainly emphasize on investigation of customer satisfaction and trust on hypermarkets (Danesh, Nasab, and Ling, 2012), influence of hypermarkets environment on customer's emotions and shopping behavior (Ghee and Ahmad, 2010), customers choice decisions on the hypermarket outlets (Wel, Hussin, Omar, and Nor, 2012) and factors influence customer loyalty with hypermarkets (Rahman and Jalil, 2014) among others.

Nonetheless, research on customer citizenship behavior in Malaysian hypermarkets is limited (Abdul Jamak et al., 2015; Shamim et al., 2015). More specifically, there is hard to find any research discussing gender and ethnic group differences in customer citizenship behavior (feedback behavior, advocacy behavior, helping behavior, and tolerance behavior) of Malaysian hypermarkets. This is important to investigate because Malaysia is a multi-ethnic country where the citizenship behavior may not necessarily be the same for all customers. As the hypermarket sector is fastest growing in the country and increasing competition day by day, there is a need to cater the need of customers by understanding them at the individual level and the way they can possess citizenship behavior. For the long term survival of any hypermarket, managers not only need the conventional sales and marketing strategies but also to be close to the customers to make them as citizenship agent. In order to know the kinds of strategies hypermarkets need

to develop customer citizenship behavior, the managers need to understand the differences among customers based on gender and ethnicity. Hence, this research is conducted to find possible gender and ethnic group differences in the customer citizenship behavior of hypermarkets customers of Perak State of Malaysia.

### **Hypothesis**

Following hypotheses are proposed:

H<sub>1</sub>: There is significant gender difference in customer citizenship behavior (feedback, advocacy, helping, tolerance).

H<sub>2</sub>: There is significant ethnic group difference between Malay vs. Chinese customers in customer citizenship behavior (feedback, advocacy, helping, tolerance).

H<sub>3</sub>: There is significant ethnic group difference between Chinese vs. Indian customers in customer citizenship behavior (feedback, advocacy, helping, tolerance).

H<sub>4</sub>: There is significant ethnic group difference between Malay vs. Indian customers in customer citizenship behavior (feedback, advocacy, helping, tolerance).

### **Methodology**

The measurement instrument for customer citizenship behavior was adapted from Yi and Gong (2013). The Cronbach's Alpha exceeded the threshold level of 0.70 confirming the reliability of the instrument. The data were collected from 200 customers of hypermarkets in the Perak State of Malaysia on a five Point Likert scale where respondents were asked to choose an option from 1 (strongly disagree) to 5 (strongly agree). The data were collected from the customers when they were engaged in shopping on the hypermarkets.

All the respondents were Malaysian customers with a mixed ethnic background. The majority of the respondents were from Malay ethnic (63%) followed by Chinese (19.5%) and then Indians (17.5%). The 54.5% respondents were female and the 45.5% were male. The 30.5% respondents were single, 67% were married, 1% was divorced and 1.5% was separated. Around 8% respondents were below 20 years of age, 29% were from 21 to 30 years, 25.5% were from 31 to 40 years, 19% were from 41 to 50 years, 11.5% were from 51 to 60 years and 7% were above 60 years.

### **Results**

The independent sample t-test was used to analyze the gender and ethnicity difference in customer citizenship behavior. The differences were investigated individually on four dimensions of the customer citizenship behavior namely feedback, advocacy, helping and tolerance. The mean value and standard deviation for each dimension are presented in Table 1.

Table 1: Gender Differences in Customer Citizenship Behavior: Descriptive Statistics

Variables	Gender	N	Mean	Std. Deviation	Std. Error Mean
Feedback	Male	90	3.759	0.563	0.059
	Female	108	3.732	0.734	0.071
Advocacy	Male	90	3.667	0.585	0.062
	Female	108	3.667	0.685	0.066
Helping	Male	90	3.628	0.551	0.058
	Female	108	3.600	0.695	0.067
Tolerance	Male	90	3.367	0.717	0.076
	Female	108	3.398	0.818	0.079

The independent sample t-test results reveal that feedback ( $t = 0.301$ ;  $p = 0.764 > 0.05$ ), advocacy ( $t = 0.001$ ;  $p = 1.0 > 0.05$ ), helping ( $t = 0.319$ ;  $p = 0.750 > 0.05$ ), and tolerance ( $t = -0.285$ ;  $p = 0.776 > 0.05$ ) do not vary across gender. This means that the feedback, advocacy, helping and tolerance are same for all customers (male and female) regardless of the gender (as shown in Table 2). Thus, hypothesis  $H_1$  is not supported.

Table 2: Gender Differences in Customer Citizenship Behavior: t-statistics

Variables	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	p	t	df	p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Feedback	4.330	.039	.301	194.735	.764	0.028	0.092	-0.154	0.210
Advocacy	1.289	.258	.000	196.000	1.000	0.000	0.092	-0.181	0.181
Helping	5.723	.018	.319	195.534	.750	0.028	0.089	-0.147	0.203
Tolerance	1.525	.218	-.285	196.000	.776	-0.031	0.110	-0.249	0.186

The feedback, advocacy, helping and tolerance were then tested across ethnicity. The mean value and standard deviation for each variable across three ethnic groups (Malay, Chinese, and Indians) are presented in Table 3.

Table 3: Ethnic Differences: Malay Vs. Chinese Customers (N = 126 Malay; 36 Chinese; 35 Indians)

Variables	Ethnicity	Mean	Std. Deviation	Std. Error Mean
Feedback	Malay	3.735	0.627	0.056
	Chinese	3.574	0.724	0.121
	Indians	3.943	0.684	0.116
Advocacy	Malay	3.638	0.548	0.049
	Chinese	3.426	0.733	0.122
	Indians	4.000	0.723	0.122
Helping	Malay	3.540	0.526	0.047
	Chinese	3.549	0.729	0.122
	Indians	3.921	0.788	0.133
Tolerance	Malay	3.328	0.676	0.060
	Chinese	3.176	0.938	0.156
	Indians	3.819	0.789	0.133

The variables were first compared across Malay vs. Chinese customers (shown in Table 4). Results reveal that there is no difference in feedback behavior ( $t = 1.314$ ;  $p = 0.161 > 0.05$ ), advocacy behavior ( $t = 1.887$ ;  $p = 0.061 > 0.05$ ), helping behavior ( $t = -0.082$ ;  $p = 0.935 > 0.05$ ), and the tolerance behavior ( $t = 1.086$ ;  $p = 0.279 > 0.05$ ) between Malay customers and Chinese customers. Thus, hypothesis  $H_2$  is not supported.

Table 4: Ethnic Differences: Malay Customers Vs. Chinese Customers

Variables	Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	p	t	df	p	Mean Difference	Std. Error Difference	Lower	Upper
Feedback	0.002	.965	1.314	160	.191	0.161	0.123	-0.081	0.404
Advocacy	3.399	.067	1.887	160	.061	0.212	0.112	-0.010	0.433
Helping	2.827	.095	-0.082	160	.935	-0.009	0.109	-0.224	0.206
Tolerance	3.864	.051	1.086	160	.279	0.152	0.140	-0.124	0.429

Interestingly, when Chinese vs. Indian customers were compared, a significant difference was observed in feedback behavior ( $t = -2.205$ ;  $p = 0.031 < 0.05$ ), advocacy behavior ( $t = -3.321$ ;  $p = 0.001 < 0.05$ ), helping behavior ( $t = -2.071$ ;  $p = 0.042 < 0.05$ ), and tolerance behavior ( $t = -3.122$ ;  $p = 0.003 < 0.05$ ). The mean difference for the feedback is -0.369, advocacy is -0.574, helping is -0.373, and tolerance is -0.643. The negative sign reveals that Indian customers have higher customer citizenship behavior (feedback, advocacy, helping and tolerance behavior) than Chinese customers. This finding reveals that the Indian customers possess more citizenship behavior than Chinese customers. Hence, the hypothesis  $H_3$  is supported. Results are shown in Table 5.

Table 5: Ethnic Differences: Chinese Customers Vs. Indian Customers

Variables	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	p	t	df	p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Feedback	.023	.879	-2.205	69	.031	-0.369	0.167	-0.702	-0.035
Advocacy	.006	.939	-3.321	69	.001	-0.574	0.173	-0.919	-0.229
Helping	.375	.542	-2.071	69	.042	-0.373	0.180	-0.732	-0.014
Tolerance	.300	.586	-3.122	69	.003	-0.643	0.206	-1.054	-0.232

Finally, the customer citizenship behavior of the Malays customers was compared with the Indian customers to see the possible differences (shown in Table 6). The independent sample t-test reveals a significant difference in the advocacy behavior ( $t = -3.215$ ,  $p = 0.002$ ), helping ( $t = -3.377$ ,  $p = 0.001$ ) and tolerance behavior ( $t = -3.662$ ,  $p = 0.001$ ) between the two groups. The mean difference in advocacy behavior is -0.362, helping is -0.382, and tolerance is -0.491. However, no significant difference is found in the feedback behavior for Chinese vs. Indian groups ( $t = -1.697$ ,  $p = 0.092$ , mean difference is -0.207). Thus, hypothesis H<sub>4</sub> is partially supported.

Table 6: Ethnic Differences: Malay Customers Vs. Indian Customers

Variables	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	p	t	df	p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Feedback	0.080	.778	-1.697	159	.092	-0.207	0.122	-0.449	0.034
Advocacy	2.940	.088	-3.215	159	.002	-0.362	0.113	-0.585	-0.140
Helping	7.426	.007	-3.377	159	.001	-0.382	0.113	-0.605	-0.159
Tolerance	1.584	.210	-3.662	159	.001	-0.491	0.134	-0.756	-0.226

In summary, the results suggest that the customer citizenship behavior is same across gender however it varies across ethnicity. The Indian customers possess stronger citizenship behavior followed by Malay customers and then Chinese customers.

### Discussion and Conclusion

Considering the importance of customer citizenship behavior (feedback, advocacy, helping and tolerance) in gaining competitive advantage in the present business world, the current study had an attempt to investigate the gender and customer citizenship behavior of hypermarket customers located in the Perak state of Malaysia. The study assessed the gender and ethnicity differences in the customer citizenship behavior of the customers. The study came up with useful findings.

***Importance of customer citizenship behavior***

Overall, the customer citizenship behavior is an important source of gaining competitive advantage for the hypermarkets. Primarily, the citizenship behavior is not the primary responsibility of the customers. Customers pay money at the exchange counter and buy goods, where they end-up their primary responsibility. However, the hypermarkets responsibility is more and beyond the exchange counter. They need to assist customers even after the shopping to ensure that customers get maximum utility and value. In the meantime, they face intense competition in the market. It is certain that customers will return back to the same hypermarket if they got maximum value in their earlier shopping visit. If they could not get the value as per their expectation, there is a possibility that they switch to another hypermarket. Hence, in addition to providing required products and services, hypermarkets need to develop customer citizenship behavior. This is the only behavior of the customer which is more beneficial to the hypermarkets than customers by themselves. The customers if have positive citizenship behavior towards hypermarket, provide feedback, act as citizenship agent, help hypermarkets to improve its services and tolerate if anything goes wrong during their shopping visits. They spread positive word of mouth regarding the hypermarket and refer it to other customers.

***Gender and customer citizenship behavior***

The finding of this research reveals that both male and female equally possess customer citizenship behavior. There is no gender difference in the citizenship behavior of the customers. This is a good thing for the hypermarket that they do not need to devise difference strategies for male vs female; rather, hypermarkets need to equally concentrate on both male and female to develop their citizenship behavior.

***Ethnicity and customer citizenship behavior***

The study came up with interesting findings. We analyzed whether customer citizenship behavior varies across three ethnic group customers using independent sample t-test. Four dimensions of customer citizenship behavior namely feedback, advocacy, helping and tolerance was compared across three ethnic groups. The finding reveals that there is no significant difference in feedback behavior, advocacy behavior, helping behavior and tolerance behavior between Malay customers and Chinese customers. Nonetheless, when customer citizenship behavior was compared between Chinese vs. Indian, a significant difference was obtained. That is, Indian customers possess more customer citizenship behavior (feedback, advocacy, helping and tolerance) compared to Chinese. Similarly, a significant difference is found in the advocacy behavior, helping behavior and tolerance behavior between Malay customers vs. Indian customers but feedback behavior for both groups is same.

These findings are very important. It shows that Malay and Chinese customers comparatively possess less customer citizenship behavior than Indian customers. Based on these findings, it is posited that Indian customers discuss the shopping visits with other customers. They prefer to make the shopping decision based on referrals rather than deciding to choose the hypermarket by their own. Therefore, among three groups, Indian customer citizenship behavior is the strongest followed by Malay customers and then Chinese customers. Malay

customers also follow the same practice but it is comparatively weak then Indian customers. In contrast, Chinese customers make their decision to choose hypermarket by their own. They don't believe on referrals. Hence, it is important for the hypermarkets to devise strategy especially for the Chinese and Malay customers to enhance their citizenship behavior.

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# A Preliminary Study on Consumption Experience of Social Support Towards Life Satisfaction

**Rosmanizah Derahman**

*Department of Management and Humanities. Universiti Teknologi PETRONAS, Malaysia*

Email: rosmanizahutp@gmail.com

## **Abstract**

**Purpose:** The purpose of this paper is to explore and uncover the consumption experiences of social support and the meaning of life satisfaction among elderly. The analysis also to understand the experiences of elderly in social support in the lens of Islamic teaching.

**Design/ methodology/ approach:** This phenomenological study employs a scientific research method with a preliminary two participants for a pilot study. Methods of inquiry will be in the form of phenomenological reflection using Interpretative Phenomenology Analysis (IPA) on data and emerging themes using open-ended semi-structured questions during a face-to-face interview with a minimum of 10 to 15 participants.

**Findings (preliminary):** The pilot study suggests to a few implications such as an improvement to field notes and pilot plan. A simultaneous process of data collection and analysis should be implemented to reach to data saturation point.

**Practical implications:** The findings imply that interpreting on emotion on consumption experience of social support among an elderly is deem important to understand further on this particular segment.

**Originality/value:** This is the first interpretation of consumption experience of social support among elderly in the context of Malay Muslim especially in Malaysia.

**Keywords:** - Life Satisfaction; Emotion; Consumption Experience, Qualitative; Elderly; Social Support; Islamic Teaching.

**Paper type:** Conceptual Paper

## **Introduction**

At present, two third of aged people live in the developing countries. World's aging population is 841 Million in 2013 which also reaching two Billion in 2050 and will witness aging to overtake children population in 2047. Currently, with an almost 12% increase in aging population aged 60 years and above, aging has been truly a phenomenon (United Nations, Population Division Department of Economic and Social Affairs, 2013). In Asia, China having the largest population of an elderly which comprises of 110 Million in 2009 (Feng, Wang, and Jones, 2013). Most Asian countries are having an increasing number of aging population due to low birth and mortality rate (Liao et al., 2014). Elderly by definition is someone aged more than 60 according to ASEAN and World Assembly of Ageing which held in Vienna in 1982. Today, the life of an elderly is quite challenging. Elderly might experience an aging process whereby

disability and declining of mobility to move would occur, and this would slowly expose themselves to a feeling of useless (Mollaoğlu, Tuncay, and Fertelli, 2010). The reduced self-care capacity would alter elderly views of their life satisfaction (Christel Borg and Blomqvist, 2006). If this persists, elderly will put them in physical and psychologically discontented. Currently, develop countries have projected a need for long-term care for an elderly (Pickard, 2013). In Malaysia, there are also studies which emphasize the requirement of providing many more choices for care center (Ahmad, 2009). However, culture and value that govern the way of life especially, among Malay Muslim favor another alternative of ensuring a satisfied life of elderly rather than rely on a care center. In Asian countries which live out Eastern cultures, a family is considered as a very strong institution (Ramaswami, Huang, and Dreher, 2014) and would bring an impact the individual who seek for social support especially among Asian people (Kim, Sherman, and Taylor, 2008). Thus mind on family concern does matter especially when an elderly should remain as an important person in life similarly to the younger ones. Staying together with family members cannot be replaced by an atmosphere created by some outsiders who were asked to or paid. In Malaysia, Malay Muslims consider a family as a care institution to look after the elderly (Dahlan, Nicol, and Maciver, 2010).

### **Problem Statement**

The statistic of Malaysia's aging population aged 60 years and above is increasing and have reach 2.7 Million which is nearly 10% of its overall population by the year 2020 (Department of Statistics, 2014). The statistic is driven by a longer life expectancy, shrinking of the family size as well as a reduced rate of fertility and mortality. Malaysia will soon be an aging society and become an 'older country' when the current increasing rate of 12% annually would push the population rate to arrive at 15% which is expected in the year of 2030. The increasing population of an elderly is a good sign of a good community and excellence in modern medicine and a sign of a good elderly is when they are enjoying their quality of life. However not all elderly is satisfied with their life (Onishi et al., 2010). While there has been an investigation on life satisfaction among an elderly, similar studies have been investigated (Christen Borg, Hallberg, and Blomqvist, 2006), (Gwozdz and Sousa-Poza, 2010), (Hsu, 2012), (Senyurt, Gun, and Demiralp, 2013), but limited has been explored deeply to understand it. Thus it is significant to explore the very nature of life satisfaction among an elderly especially when available measurement does not truly reveal an individual life condition. Besides, every human deserves a satisfied life despite their life condition (Joshnloo, 2013). Lacking of this understanding would jeopardize the balance of life to both an elderly and others as well. Adulthood stage is stage whereby an elderly would be self-focused, self-identity exploration, instability and required hope (Arnett, 2014). Therefore this study would explore the meaning of life satisfaction among them and detect their social support status in the eyes of Islamic teaching perspectives as to support them to face those challenges.

Challenges exist in younger to older age. In order to win challenges, most people believe that experiences which accumulated across ages would help and for this elderly would have been benefited by their rich experiences. As people gain satisfaction from experiential than material purchase (Gilovich, Kumar, and Jampol, 2015), satisfaction seems can be created by experiential purchase. This experiential consumption creates more satisfaction since it is closely related to the social relation. Besides, remembered consumption experience (Carù and Cova, 2008) would promote life satisfaction (Xiao and Li, 2011). In this modern world where the social relation is more vulnerable due to daily activities, conflicts and time management,

getting satisfaction through experiential consumption is at risk. But elderly consumes more than we can ever imagine in their entire life and they would be the most required group who are believed to be able to explain deeply on remembered consumption experiences. When Caru and Cova (2007) describe consuming experiences is not limited to the market, but it applies to an individual's daily life with and without market relation, this reflects perfectly to the life experiences of the elderly. There would be some various dimension to look into consumer behavior but for today, superior customers' consumption experience become a priority (Rajagopal and Castano, 2015). As customer satisfaction is an ultimate aim of marketing (Kotler, Keller, and Ang, 2013), understanding their overall experience towards consumption would be an advantage. Consumption experience has being studied on a perception (Li, Dong, and Chen, 2012) and yet to be explored on customers experience or actual behavior. Considering an elderly is rich with experiences throughout their life, understanding consumption experience thru their life experiences of emotion is deem required. Triantafyllidou and Siomkos (2014a) has measured various emotional experiences through satisfaction, nostalgia intensity, word of mouth communication and behavioral intention but a deep understanding of it was suggested to be studied. Moreover, the ill- defined of consumption experience (Carù and Cova, 2003a) require more understanding of the concept. This consumption experience would be enriched when it is viewed through the lens of Islamic perspectives and social support as an added elements to be explored. Moreover, in this circumstance, understanding elderly experiences is required due to enormous consumerism experiences throughout life and little attention has been made to their entire experiences.

Life satisfaction which is closely related to happiness and quality of life would vary in nature such as one would satisfied with their life in the past but does not see any good in future. Life satisfaction is a state of a mind whereby a person positively measure his/ her life (Veenhoven, 1996). An elderly who are mostly retired, have much time to fill up their life with their family activities and social functions. However, in reality, most elderly people might spend their time looking back and reflecting on their past lives and gradually would either self-astonish or remain disappointed with their life. Some elderly remain in depression (Su et al., 2012), stress (Uchino et al., 2012) and loneliness (Ellwardt, Aartsen, Deeg, and Steverink, 2013) despite bundle of social support provider around them. Adulthood stage is stage whereby an elderly would be self-focused, self-identity exploration, instability and required hope (Arnett, 2014). Therefore this study would explore the meaning and essence of life satisfaction among them and detect their social support status in the eyes of Islamic teaching perspectives as to support them to face those challenges. Moreover, understanding the management of social support by exploring their life satisfaction is hoped to diagnose the needs and desire of this particular marketing segments especially in managing their social support network. Besides previously elderly is growing market segment which was being neglected by researchers (Schewe, 1984). Marketers focus on other promotable segments such as teenagers, professional adults and various other racial groups including Hispanic, Jew and Blacks in American and European context. Today, with the proportionate bigger population, the elderly segment should be repositioned and bring remarkable bigger market share. However, with this current increasing rate, there is still limited stores and merchandise which tailored to this particular segments (Eastman and Iyer, 2004). Currently with the current trends to further exploring the gray market (Nielsen, 2014), an in-depth exploration of this particular group would create an opportunity of meeting and fulfill the desire of the elderly in which marketing is all about Society is seen as a means of providing the senior citizen with a necessity of good life

(Veenhoven, 1996) and positive aging. Living in positive aging and achieve satisfaction is crucial in later life and has been among of the agenda of any governments. Besides, life satisfaction would promote better lifestyles and even will promote better perception towards mortality. This scenario is closely related to Islamic teaching which emphasizes today and hereafter life. However, today's lifestyle and positive society perception have gone missing in which an elderly could barely contribute and share their experiences towards society. Thus, explore and understand social support and social contact from the eyes of Islamic concepts among elderly would help to view a truly collectivist society. Determining on the life satisfaction gist of elderly would bring along the influencing factors and soon society will learn on the needs and desire of elderly to trigger them to keep up with their challenging life and further contributes to society at large. Short of understanding towards this would shackle the entire value and culture to continually supporting the elderly in society. Every elderly people may aims to enjoy life while reaching their life satisfaction in their later adulthood. While a career experienced elderly might love to continuously contribute in their best disciplines, others might just want to earn a successful and happy living.

The Family institution has been regarded as a primary caregiver in Malaysia especially among Malay Muslim (Dahlan et al., 2010) and staying with own family members is such a perfect place for an elderly. However an increase of nuclear family structure over of an extended family structure (Selvaratnam and Tin, 2007), (Y. Al-Kandari and E. Crews, 2014) had put an elderly in a dilemma. Younger people prefer a nuclear family and quite reluctant to live in an extended family structure. This phenomenon would put an elderly into living alone which is highly exposed them to risk especially in the recent increasing rate of criminal cases involving an elderly (Mohd Yusoff, 2009). Moreover with an increase cases of neglected parents (Department of Social Welfare, 2014) and an increasing of longevity would put an elderly into vulnerable (Onishi et al., 2010). Without an explanation, this situation would continuously occur, and this unnecessary behavior will continue to become trends that signify a different inappropriate Eastern culture and Islamic teaching as well. Further unnoticed on this behavior would jeopardize the relationship between younger and elderly age and deny on elderly rights to live in satisfactory.

Family crisis is also made children may not be devoted towards taking extra care of the elderly. Additionally, today's generation rarely witnesses on how elderly themselves concerned to their previous elderly grandparents. This behavior led to prejudice and conflict and prohibited in this Eastern culture especially within an Islamic teaching. (Nor, Fatahiyah, and Ismail, 2012). However, the human relation and social support among an elderly and their children are utmost important since the children are among the best social support to the elderly parents. Unfortunately, it is also very rare to find youngsters who can effectively communicate and establish contact with an elderly like what Eastern value has been cultivated. For instance talking softly with an elderly, keep an eye contact while communicating, helping without asked especially with other non-family elderly. Although Islamic teaching in Quran says; "*Your Lord has commanded that you worship none but Him, and do good to parents. If one or both of them reach old age with you, do not say 'Fie/ Ahh' to them, nor chide them, but speak to them a generous word..and say, My Lord, have mercy on them as they brought me up when I was little*" (17: 23-24), there are people who do not notice of the value. Islam appreciates elderly and demands of respects towards elderly and parents has been mentioned eleven times in Quran. That is not included many histories, true stories, dialogue, debates, warn, guidance and many other points related to parents which include in the sacred book. Prophet Muhammad (PBUH)

has also emphasized on keeping elderly parents as ways to increase life and livelihood in his says thru 40 Hadith, and one of it mentions;

فِي يَزْدَادُ أَنْ وَ عُمَرَهُ لَهُ يَمُدُّ أَنْ أَحَبَّ مَنْ: (ص) اللَّهُ رَسُولٌ قَالَ  
رَحِمَهُ لِيَصِلَ وَ وَالِدَيْهِ فَلْيَبْرِزْ رِزْقَهُ.

The Messenger of Allah (peace be upon him and his family) said: “*One who desires a long life and an increase in livelihood should exhibit goodness towards his parents and establish bonds of kinship (with his relatives).*”

(Kanzul `Ummal, Volume 16, Page 475)

The most important pillar of Islam is to worship God and the order right after this is a kindness to parents. However, some people do not care for their parents in the manner they deserve. Lacking these, an elderly might remain alone in their world even though there are plenty of people around them. If an exploration were done to understand such behavior, both Eastern values and elderly lives would be benefited.

As Islamic teaching and values would successfully guide people in various circumstances (Kahf, 2011), thus it would be significant to explore how it would cope and steer the behavior of both elderly and the young generation. While, all these problems means a sadistic events, insights from the elderly perspectives would explain the phenomena. Lacking of this understanding would immobilize collectivist society in the value system which have been long preserved. In spite of various government actions to nurture a healthy and happier life for an elderly, those unnecessary cases appear to be a nuisance to all. Without effective solutions to suggest, this phenomenon will disturb and worst of all it will become a trend that will hurt. Thus, there is a need to explore the very nature of an elderly for grounds of such things happens. Thus a qualitative phenomenological study would deeply explore the underlying issue of elderly people. A face-to-face interview will be conducted to understand the thinking of an elderly and allow the future generation to appreciate the elderly whose experience and contribution should never be overlooked.

### **Research Objectives**

Specifically, this study attempts;

1. to understand the elderly experiences of social support.
2. to uncover the meaning of emotion in consumption experience of social support
3. to describe the essence of life satisfaction about Islamic teaching.

### **Theoretical Foundation Of The Research**

#### ***Life Satisfaction***

Historically, studies of life satisfaction especially among individual have been started since the 18<sup>th</sup> century, and it recognized an existence of an individual rather than only King or God. Later it was an establishing theory of forming a group of individual who emphasized on self-actualization and happiness. These are the core values in building a society which is also believed to support an individual with a good life (Veenhoven, 1996). As far as society is concerned, religious which emphasizes on society building is also known for its success to put purposefulness of living and it is parts of the religious system (Paloutzian and Park, 2005). Currently, with a rapid growth of modernity, there are changes family values. The family is the most important institute to learn of value and culture. Islamic value could learn from family (Asayesh and Bahramizadeh, 2011). Likewise, value and culture, life satisfaction concept could also be taught and learn from family institution especially from the parents or elderly thru living

experiences sharing. Nevertheless Muslim also believes that Islamic teaching is utmost important to warrant human health (Yousofi, 2011) as well as would lead in reaching life satisfaction.

To date, a considerable amount of literature related to life satisfaction and elderly has been published, and both has becoming variables and mediating factors in the various study. Within this abundant of studies on life satisfaction across disciplines among an elderly, little has been written on a social support and very rare on Islamic teaching especially in the consumer psychology point of view. However, comparable work has been acknowledged in China (Huang and Wu, 2012) which focused on social interaction with life satisfaction. Concurrently, despite a rich and information on the elderly and life satisfaction, Islamic teaching and value always remain to an exploration. There is a similar study (Dahlan et al., 2010) in which an Islamic value become a theme, but it did not provide enough evidence to understand the actual life satisfaction matter about Islamic teaching especially in the context of Malay experiences in Malaysia.

### **Consumption Experiences**

Consumption experience has become one of the element to understand consumer and behavior (Carù and Cova, 2003b). Starting with the work of Holbrook and Hirschman, studied on consumption in various subjects including in pets (Holbrook, 1997). A few numbers of consumption experience study has been developed in qualitative design (Carù and Cova, 2008), (Zarantonello and Luomala, 2011), (Kefu Lao, 2014), (Richelieu and Korai, 2014) and unlimited to quantitative (Richins, 1997), (Aurier and Siadou-Martin, 2007), (Martin and Paul Hill, 2012). There has been a study which relates consumption experiences to life satisfaction (Xiao and Li, 2011) and there is a quantitative study which has been conducted in quantitative designed has proved that life satisfaction is improving in consumers in which consumer adequacy is fulfilled (Martin and Paul Hill, 2012). The experiential view (Holbrook and Hirschman, 1982) of the consumption experience is seemly important to understand the consumer behavior in different perspectives rather than from the perspectives of rational choice. A work of Carù and Cova (2008) introduced various stages of consumption experiences including the final stages; remembered consumption experience. As consumption promotes life satisfaction (Xiao and Li, 2011), this experiential view of consumption phenomenon suggests the need for further research to explore and understand it. Remembered consumption experiences also cater the previous definition of consumption experiences which is not limited to market relation but could be extended to daily lives activities (Caru and Cova, 2007). Thus remembered consumption experiences would bring some meaning to elderly consumers.

### **Islamic Teaching**

Islam is a way of life and this so called religion developed for 1,434 years around the world in various countries which bear different races, cultures, languages and geographical disperse location (Giladi, 2014). The word Islam derives from the root word “salam” which means peace. Islam is a way of life which calls for ethics whereby mercy, kindness, tolerance, and peace should be practice. Islam teaches Muslim from the as big issue as managing a country to smallest as giving rules on how to dress properly. However some Muslim disobey and drifted from the Islamic teaching and make Islam as the most misunderstood religion in the world. Islam is practiced based on four primary sources of Islamic teaching; (1) Qur’an, with 114 surah/ chapters (2) Sunnah/ Hadith/ Prophetic Tradition (3) Ijma’ (unanimous consensus among jurist/ ulama’ ) and (4) Qiyas (decision by analogy) (Rehman and Ahmedov, 2011).

Based on the Quran which is the main reference of Islam; God created humanity and universe are to Worship Him, but they will be held accountable in the next life for choices of obedience or any wrong doing they have made. This is because Islam teaches that human is born pure and sinless, but the wrong pleasure has made one on the wrong path. Nevertheless, the door to forgiveness is always open to those who repent. Therefore God has sent Prophets to teach and remind mankind starting with Adam, including Noah, Abraham, Jesus and the last messengers, Muhammad. Islam promotes one to abide their relationship with God and His creation including other people and environments.

According to Islamic teaching, all human is chosen by God over other creatures in the universe and God has elevated human with distinctive bounties, abilities, and potentials. (Keshavarz, 2012) *"We have honored the sons of Adam and provided them with transport on land and sea and provided them with good things and preferred the above many of those who created favorably"* (Chapter Al Israq- الإسراء:70).

Thus, there is no other ultimate aim rather than to worship God by performing roles individual has (Sayyid Qutub, 1991). For instance, a person may play roles as a father, son, husband, neighbor, colleague, employee, citizen and friend. Avicenna; a great Muslim philosopher and physician admitted that by performing these roles and the worship to God would leave human to good physical and mental health (Yousofi, 2011).

Islam asks a human to treat people around them nicely especially their own parents and an elderly. Qur'an stated; *"Your Lord has commanded that you worship none but Him, and do good to parents. If one or both of them reach old age with you, do not say 'Fie/ Ahh' to them, nor chide them, but speak to them a generous word..and say, My Lord, have mercy on them as they brought me up when I was little"* (Chapter 17: 23-24). It was also mentioned in Hadith: Report in Bukhari *"The Holy Prophet said, it is one of the greatest sins that a man should curse his parents. Someone said, How can a man curse his parents? He said, if a man abuses the father of another, that person will abuse his parents (in return)"*. Thus treated elderly nicely is a trust and duty children should do to perform their roles in accordance to Islamic, the religion teaching.

Religious people closely link to happier life and achieve subjective well-being among individuals (Stavrova, Fetchenhauer, and Schlösser, 2013), adolescents (Abdel-Khalek, 2007), (Abdel-Khalek, 2010), (Abdel-Khalek, 2011), (Abdel-Khalek, 2012) and bring better health and less anxiety. In contrast, a study (Zeidner and Ben-Zur, 2013) found quite an unsatisfactory level of life satisfaction among Arabian students as compared to their counterparts; Jewish. However, this study might draw a different view for as Arabians is closely related to Islamic but religiosity level was not taken into consideration. Islam is a religion that teaches its followers to stay in good behavior and keep two kinds of relationship; relationship with God the Creator and relationship with a human (Sayyid Qutub, 1991). Good deeds are ultimately sought by this religion. Every living thing has their right to live. That is the reason they should not fear of poverty as their rights always there as long as they do theirs; obey God and have good relationships with a human. Islamic asks followers to be contented and not demanded in difficulties and on the other hand, rich people should be thankful and pay *zakat* during their comfortable situation. It goes the same with good deed with an elderly. Children especially son/s are/are the primary person to responsible in taking care of their parents before other people, society or government.

### **Social Support Theory**

In this social community which bases on friendship as best medicine and the key to happiness (Sarason and Sarason, 1985), social support seems important. This theory is developing, and the definition is also evolving. Social support is defined as the *exchange of resources between at least two individuals perceived by the provider or the recipient to be intended to enhance the wellbeing of the recipient* (Shumaker and Brownell, 1984). Cohen and S.L, (1985), also defined social support as *resources provided by another person* (p4). While Albrecht and Adelman (1987) view social support as *verbal and nonverbal communication between recipients and providers that reduces uncertainty about the situation, the self, the other, or the relationship, and functions to enhance a perception of personal control in one's life experiences* (p19). Within two years, social support has been extendedly viewed by researchers. For instance, social support has been viewed as an extended meaning of resources provided by another person thru communication and make someone more certain about the situation which has given meaning to life experiences.

Social support is important to human being whereby it possibly supports physical and psychological of a human being (Uchino et al., 2012) (Thompson, 2014) and even would cure and prevent cold (Cohen et al., 1997). As it is well known for its ability to improve psychological well-being (House, 1981) as well as to life events (Cobb, 1976), social support also crucial beneficial to physical health (Uchino, 2004) and even able to put off human being from cold and cancer. It is also known that social support contributes to encouraging outcomes (Heintzelman and Bacon, 2015a) and crucial to life.

In the past year, social support has attracted much attention on issues related to health and well-being such as depression (Mair, Diez Roux, and Morenoff, 2010),( Xie et al., 2010) (Su et al., 2012) (Gallardo-Peralta, Sánchez-Moreno, De Roda, and Astray, 2014), loneliness (Drageset, Kirkevold, and Espehaug, 2011), emotional distress (Hansen and Aranda, 2012) as well as stress (Cohen and Wills, 1985) (Manuel et al , 2012) including terror-related stress (Moscardino, Scrimin, Capello, and Altoè, 2010).

The current views appear to show that there is some rapidly growing literature in social support about various concepts and subject matter. Some scholar has put forwards social support theory with life satisfaction (Oh, Ozkaya, and LaRose, 2014), (Heintzelman and Bacon, 2015b) but there are insufficiently mentioned a study conducted on an elderly.

However similar study (Dahlan et al., 2010) measured life satisfaction among an elderly using mixed methodology. Thus this study draws a research to explore the very nature of life satisfaction among an elderly who live at home. While Theory of Social Support is prominent in the literature, studies on social support and life satisfaction show an inconsistent result (Heintzelman and Bacon, 2015a). Thus it seems significant, and an attempt to explore the issue among an elderly require support to establishes comprehensive complexities. Previous literature on life satisfaction among an elderly which has been studied in institutionalized home (Dahlan et al., 2010) witness themes like contentment and acceptance. Thus the extended explanation is seemly required to understand the meaning of life satisfaction to an elderly and to portray the issue, Theory of Social Support would be the root.

### **Methodology**

#### **Research Design**

The research design was based on the qualitative study. This phenomenological approach allows the researcher to explore the essence of the lived experiences of the participants about

the phenomenon. Epistemologically, this research utilizes social constructivism worldviews and intends to understand the subjective meaning of an elderly's experiences. In this cross-sectional study, the researcher will be collecting data using semi-structured open-ended questionnaire. The researcher will seek to establish the meaning of a phenomenon from views of participants through a face-to-face interview with at least 10 to maximum 15 elderly in Malaysia and obtain thick and rich data (Gall et al, 2003) from an elderly.

### ***Research Method***

The population of this study consists of all entire population of elderly aged above 60 years old in Malaysia. To gain in-depth understanding of the phenomena, researcher intends to employ non-probability sampling and not require a statistical representatives to draw the statistical inference. Thus purposive judgmental sampling will be used to generalize only certain findings. Since qualitative interview would be open to wide range of interpretation, thus it is required to a thorough process to ensure the validity. Similarly, the researcher has to avoid own assumptions about the phenomenon and do alert of the preconception of existing literature (Prescott, 2011). As qualitative researcher is the single tool in the study, the researcher also needs to prepare physically and mentally for the collection of data will take place. It also would be necessary to include written or verbal consent before the interview session including a prior approval for using the digital recorder during the interview (Laforest, 2009). Semi-structured interview in a qualitative method requires a small sample (Laforest, 2009), but would bring higher validity when participants discuss the issue in detail and depth including answering complex and personal questions. Another possible way to increase the validity of the method is by allowing for triangulation (Myers, 1997) which utilizes more than one method. Thus observation is also used along with an interview which strictly follow an interview protocol which emphasizes on its validity. The primary methods of sampling are thru purposive sampling which involves selecting samples for a specific purpose in which researcher believes to be representatives (Hair et al., 2007). The researcher has recommended and allocated a minimum of 10 to 15 participants as samples and would be contacted thru telephone conversation before the interview session would take place. Initially, the researcher will contact Lembaga Tabung Haji (LTH) and ask permission to select participants in their premises. The premises would be selected Basic Pilgrimage Courses Centers throughout Malaysia. At this point of time, the permission has been approved, and researcher has started selecting participants as LTH is conducting its final session of Basic Pilgrimage Course before the middle of June. These courses are being conducted on a weekly basis in selected mosques and researcher is starting to select participants and building rapport with whom researcher believed to be. A few calls and social media form of communication has been made to ensure a very good rapport with participants. A good rapport in which the elderly would see researcher as relatives and close friends to their family and themselves. A visit without any interview effort would be made before the actual interview session.

Identified sample size is 15; however, the actual sample size depends on the saturation level. Even though some scholars rejected the idea of saturation (Dey and Harborne, 1999), (Strauss and Corbin, 2008), some other scholars suggest on saturation level as a decision stop to the data collection and determines the sample size. Some suggest that the smaller sample size with a modest claim to achieve its research aim is quicker to achieve saturation (Mason, 2010). To date, two pilot study has being conducted to get more beautifully in-depth responds from the participants. The findings of the pilot result show that the participants have interpreted their

level of life satisfaction in life and researcher successfully views their meaning of life satisfaction before proceeds to a further process in qualitative data analysis.

### Participant Of Pilot Study

In qualitative design study which emphasizes on interpretation, a pilot study has been conducted to help the researcher in generating an understanding of the concepts held by participants and assist in providing the meaning of the phenomena under study. Purposeful judgmental sampling has been applied, and two participants have been chosen in the pilot test. Both participants are female and lives in the urban area but have different demographic details. Pseudonyms are used to protect confidentiality, and first session interview with both participants has been conducted in one and half hour and an hour respectively. The interview plan has been prepared and based on LISAT 9 as well as SWSL (Satisfaction With Life Scale) by Diener et al. (1985).

The result shows that both participants have acquired life satisfaction in different meaning and situation of their lives. Based on the interview, the table shows some excerpt which portrays the meaning of life satisfaction experiences.

#### LIFE SATISFACTION

Participants	Excerpts
001 Pseudonyms : MAK	I am satisfied after took care of my children by myself
	I am happy and satisfied to see all my children have grown up and successful (with my definition)
	I am happy, don't ever regret the past
	My daughter is thanking me for scolding her for not performing pray when she was a kid; I am satisfied with what I did.
	My second child is an introvert, but she told me that she would not be here, if not because of me. I am happy.
	Now I cook what my husband prefer, and I can cook my favorite too. Watching my husband eat happily make me satisfied.
	Satisfaction depends on us; we have to do self-evaluation continuously and be thankful to God
	I am satisfied; my children brought me along to travel, spend nights at luxury hotels, brought me to State Mosque in Putrajaya...having the pleasure of experiencing using lift. Automatic wudu' in the big mosque, automatic doors ...if villagers ask us about; we have experienced it...what else I want
	We do not have to achieve everything we want...even successful children also differ to each other...religion teach us to be thankful...I feel my life is good...from having a motorbike to owning a house and successful children...
002 Pseudonyms : Kak Muna	I am happy, even though I am not married, I have many nephews who would spend the nights here
	I am satisfied, most of my babies who I took care, recognize and appreciate me when they have grown up, they came here and talk to me nicely
	My neighbor always pays a visit, and we chat about everything, I fell happy about it
	I am satisfied to be at home; I would avoid travel to anywhere else. Having my own time at home is my satisfaction.

### **Implications Of Pilot Study**

However, these findings do reveal some of the implications which have been learned from the pilot interview will be further discussed such as a need to polish further on the interview plan when it is required as a tool to assist the researcher in acquiring life experience from the participants. Besides, researcher keeps a reflective/field journal and field notes. The reflective/field journal will be used by researcher/ interviewer to express own feeling, reactions and assumptions during conduction research and interview session. The reflective journal will provide additional data for the analysis, especially from the observation. Meanwhile, field note is used to document an observation of what researcher see and experience which regards to the interview atmosphere such as location, weather, time, events and even an abbreviations as well as descriptive notes. Both tools are useful to guarantee a richness of the data. The most important lesson which learned from the pilot test regards data collection and analysis process which should be simultaneously done to check on data saturation point.

During the interview session, researcher prepared appropriate tools to memorize all the responds like a voice recorder and reflective journal. However, thru pilot study, the researcher also had noticed that there should not be any paper or pen bring along during the session as it will hinder participants to talk freely. After an interview session has been conducted, the researcher has transcribed the data into a written form. Transcribing involves a straightforward technical task and some judgments on the level of detail to choose. Transcribe is also a process of cleaning and reduction of the audible data which require capturing features of communication; emphasis, speed, intonation, timing and pause to interpret data into a meaningful theme (Bailey, 2008). The researcher has also put a close observation and listen carefully repeatedly and keep the raw data in the Microsoft Word files. The original data would be in Malay language and local northern dialect. The data will be then exported into Atlas.ti 7.0 which then be coded and will be utilized for data management and inductive thematic analysis.

In spite of interview, protocols used to ensure validity and avoid biases. Bracketing is also used to meet the objectives efficiently. Bracketing is a mean of demonstrating the validity and recommended to be used in the initial stages of the study (Chan, Fung, and Chien, 2013). Another tool in ensuring validity is triangulation. Data collected will also be triangulated to ensure the richness, comprehensive and robust information. Triangulated is also meant for validation whereby data will be collected using multiple instruments. A phenomenon is best described and gets deeper understanding when using multiple methods. In this study, the researcher is planning to conduct triangulation of sources whereby consistency can be examined at different data sources from within the same method. For instance consistency of the information is examined at a different point in time or asked in private or public. Other than that, triangulation of data sources is applied when this study will use multiple quotations, multiple participants, expanding location sites for data collection. For instance, learning from the pilot study, this study will utilize other sampling sources whereby participants will also be selected from PAWE (*Pusat Aktiviti Warga Emas*). This is because most samples from LTH are considered only those elderly who have a good financial condition whereas this study should cover various multiple demographic. The researcher is also attached to the purposive sampling in which representative will be selected when researcher believes to be appropriately selected. Triangulation is also practiced when two methods will be applied; interview and observation. For an interview, the researcher is also planning to conduct focus group interview. This is because interviewing and elderly requires a few skills such listening, observing and

collecting whatever possible data (Robertson and Hale, 2011) and interviewer's age, gender and class would influence the response (Manderson, Bennett, and Andajani-Sutjahjo, 2006). For instances interview an elderly require a dialogue (Russell, 1999) and establishing a relationship (Robertson and Hale, 2011). Thus building rapport requires time and effort but with advantages of the researcher as academicians and closer age to participants, both personal interview and focus group would bring a deep understanding of the lived phenomena.

In this study IPA (Interpretative Phenomenology Analysis) is intended to be used to analyze the meaning of the conversation. Data analysis would be then analyzed by raw data which has been transcribed and coded. Inter-rater would be appointed to verify on the selected coding and themes. The researcher will write on the analysis using deductive and themes which would inductively arise. Although research processes, planning for qualitative methods calls for various processes which are not totally in a single flow chart. There is an argument to the qualitative methods (Mohd.Salleh and Mohd.Saata, 2010) which emphasizes on the ethical issues dealing with human subjects in Malaysia. Thus researcher would closely follow guidelines of the institution as well as equipped with approval letter/ informed consent form from participants. In conducting research, one would want to minimize biases. Bias could occur at any phase in research either in research design, data collection and also in the analysis process. To minimize biases, this study plan to carefully prevent it by a cautious plan and implementation as suggested by Pannucci and Wilkins (2010) such as preparing for interview protocols.

The problems of gaining a satisfactory aging, collectivist society and exploring social support management in this current phenomena can be eliminated by deeply understand the subject. Explore the very nature of elderly in the mosaic of social support and social contact is deem required to comprehend the phenomena. This study is expected to bring about in-depth details on the elderly of Malay Muslims in which qualitative phenomenological procedure would be closely followed in order to extend the knowledge in the literature from the lens of Islamic teaching and how emotion in consumption experiences is interpreted and bring about details on the respected elderly which seemly yet to be explored

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# Employability Skills and Attributes of Engineering and Technology Graduates from Employers' Perspective: Important vs. Satisfaction

**Haryanni Harun\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: haryanniharun@petronas.com.my*

**Rohani Salleh**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: rohanisalleh@petronas.com.my*

**Mohamed Noor Rosli Baharom**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
noorbh@petronas.com.my*

**Mumtaz Ali Memon**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
mumtazutp@gmail.com*

\*Corresponding author

## **Abstract:**

Rapid and unpredictable changes affecting the world's economy has greatly impacted the labour market. These changes created new trends and expectations of graduates' employment. The graduates' talent is a critical part of the world's employment market and in the current condition employers are more conscientious in their assessment of employees' skills and attributes. While we can safely assume that graduates of engineering and technology are highly employable, little is known whether these graduates meet the employers' requirements in terms of the important skills and personal attributes. This study was conducted to gain insights from employers' perspective on the engineering and technology graduates' skills and attributes. The respondents of this study were among the employers of graduates from a Malaysian private university. Findings of this study highlighted the critical skills and attributes required by employees as well as their satisfaction over these skills as possessed by the graduates. Recommendations for further research are proposed.

**Keywords:** Employability, skills, attributes, engineering and technology graduates, talent market

## **Introduction**

The graduate talent market is an important part of the labour market as a whole (King 2003), mass expansion of higher education and recruitment of graduates for jobs previously held by non-graduates make graduates an important part of the workforce. Inevitably, changes affecting the world's economy and the labour market have produced new trends and expectations of employment (Felfe et al. 2007). These rapid, unpredictable and inevitable changes have greatly impacted companies' recruitment and selection of the right talents. Ironically, with an increasing numbers of first degree graduates there is also a decline in hiring of manpower by companies. This imposes a stiff competition for graduates in securing a job. Companies are now more selective and wary in choosing the right talent(s) to be taken in as employees. As such, standards or expectations of candidates' employability skills (soft skills especially) and attributes are much higher now than before, particularly for engineering and technology graduates. Omar, Manaf, Mohd, Che Kassim and Abdul Aziz (2012) asserted that at present, the national and global economies' employers tend to recruit graduates with high soft skills competencies.

Employability is about having the capability to gain initial employment, maintain employment and obtain new employment if required (Hillage and Pollard, 1998). Hillage and Pollard's definition is supported by Pool and Sewell (2007) asserting that employability is "*having a set of skills, knowledge, understanding and personal attributes that make a person more likely to choose and secure occupations in which they can be satisfied and successful*". These are in line with Yorke (2008) who firmly pointed out that "employability is a set of achievements skills, understandings and personal attributes that makes graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy."

It is therefore imperative for graduates to acquire as much knowledge and experiences while undergoing their studies that could equip them with the appropriate employable skills and attributes. The level of graduates' employability would determine the chances of them getting the job they aspire to obtain after graduating. Employers not only identify talents with technical competency but also conscientiously assess intangible skills such as communication, leadership, teamwork, problem solving, decision making in which are vital in ensuring graduates succeed as a candidate of choice and subsequently be employed (Norwood and Henneberry 2006; Tziner, Vered and Ophir 2004). Personal attributes for example graduates' individual personality traits, motivation, emotional intelligence and self-efficacy are also critical factors that employers measure to select the right talent (Mayrhofer et al., 2005; Wickramasinghe and Perera, 2010).

While we can safely assume that engineering and technology graduates are highly employable, not much is known on the vital skills and personal attributes of these graduates required by industry. In addition, not much is also known on employers' satisfaction over these skills and attributes. This study is thus deemed important and necessary to gain insights into companies' expectations and satisfaction of engineering and technology graduates' skills and attributes. This would contribute to a better understanding of the emerging trend in the employment landscape comprising both preparatory and early employment stages at the same time particularly when the war for the right talent intensifies. A good knowledge about future employers' and employees' employability preference are essential to acquire the desired talent (Mayrhofer et al. 2005). Hence, this study was

conducted to determine the **important** employability factors (skills and attributes) required by selected employers of a Malaysian private university engineering (chemical, civil, mechanical, electrical and electronics, petroleum) and technology (information communication technology and business information systems) graduates and their **satisfaction** of these factors.

The objectives of this study is to

1. Evaluate employers' view placed on the important employability skills and attributes that engineering and technology graduates should possess.
2. Assess employers' satisfaction on the employability skills and attributes that engineering and technology graduates possess.

Of a particular interest, this study focuses on the employer's stated value of the graduates' skills as example communication and leadership; and personal attributes, such as self-efficacy and personality. To achieve this purpose, this study will adopt a quantitative method for both exploratory and descriptive purposes. It is an exploratory study in that it sought to explore issues that still have minimal empirical evidences in Malaysia particularly in specific to engineering and technology graduates. It has a descriptive purpose, given that it involves collecting data in order to answer questions concerning the current practices of the subject in study (Gay and Diehl, 1996).

### **Literature Review**

Employability skills (ES) have intensely been the centre of attention in literature since 1980 (Zaharim, Yusoff, Omar, Mohamed, and Muhamad, 2009), it refers to the skills essential to acquire and retain a job (Saterfiel and McLarty, 1995). The term has frequently been replaced and interchanged with other relative terms such as essential skills, transferable skills, soft skills, core skills and also key skills (DEST, 2007; Zaharim et al., 2009). Previously, ES was considered to be primarily of a vocational or job-specific nature (Saterfiel and McLarty, 1995). However, "ES are not job specific, but are skills which cut horizontally across all industries and vertically across all jobs from entry level to top management" (Sherer and Eadie, 1987, p. 16). ES are valued because they apply to many and different type of jobs and help to meet the expectations of various occupations (Saterfiel and McLarty, 1995). It is also essentially needed for high performance at workplace (Hill and Petty, 1995).

Currently, ES include not only many foundational academic skills, but also a variety of attitudes and habits. Harvey and Morey (2003) explained that ES are the necessary key skills for graduates in order to achieve their desired careers and will enable them to continue learning throughout their working careers. Similarly, Overtoom (2000, p. 1) asserted that ES are "transferable core skill groups that represent essential functional and enabling knowledge, skills, and attitudes required by the employer". Moreover, Dacre-Pool and Sewell (2007) model of graduate employability explains ES one of the most important factors for applying disciplinary knowledge at workplace.

The American Society for Training and Development (ASTD) highlighted numerous employability skill groups across all job families (Overtoom, 2000). Those skills are: basic competency skills, communication skills, adaptability skills, developmental skills, group effectiveness skills and influencing skills. For graduates, these skills are vital for their all future job positions (Lankard, 1990; Overtoom, 2000). Table 1 shows the description of the skills.

**Table 1: ASTD Employability Skills Groups**

No	Skills Groups	Description
1	Basic competency	reading, writing, computation
2	Communication	speaking, listening
3	Adaptability	problem solving, thinking creatively
5	Developmental	self-esteem, motivation and goal-setting, career planning
6	Group effectiveness	interpersonal skills, teamwork, negotiation
7	Influencing	understanding organizational culture, sharing leadership

Source: Overtoom (2000)

According to Brown, Hesketh and Williams (2003), employers often indicated that graduates seem not well equipped to enter into the workforce. This resulting in recruitment of graduates a risky strategy for some employers (Morley, 2001). Robinson (2006) asserted that to some extent, higher learning institutions are deemed failing in their role to appropriately equip and prepare graduates for the employers' expectations. There seem to be a need for improved graduates' ES for them to join the workforce. Nevertheless, graduates' ES can only be improved by knowing the clear expectations from the industry.

From organization's perspective, employability refers to 'work readiness' (Shafie and Nayan, 2010). The readiness is defined as the possession of the skills, knowledge, attitudes and commercial understanding that will enable new graduates to make productive contributions to organizational objectives. According to Juhdi, Samah, and Yunus (2006), organizations prefer to select graduates who are balanced, and having good academic achievements. In addition, employer also looks for individuals possessing 'soft skills' such as communication skills, problem solving skills, interpersonal skills and the ability to be flexible. These are foundation skills that can be applied across the board; no matter what job the employees are performing (Lawrence, 2002).

In addition, a write up in University of Kent website indicated the top ten skills that employers want based on a number of surveys on the skills required by graduates as presented Table 2.

**Table 2: Ten Skills Employers Want in Graduates**

No	Skill	Description
1	Verbal Communication	Able to express your ideas clearly and confidently in speech
2	Teamwork	Work confidently within a group
3	Commercial Awareness	Understand the commercial realities affecting the organisation.
4	Analysing and Investigating	Gather information systematically to establish facts and principles. Problem solving.
5	Initiative / Self-Motivation	Able to act on initiative, identify opportunities and proactive in putting forward ideas and solutions
6	Drive	Determination to get things done. Make things happen and constantly looking for better ways of doing things.
7	Written Communication	Able to express yourself clearly in writing
8	Planning and Organising	Able to plan activities and carry them through effectively

9	Flexibility	Adapt successfully to changing situations and environments
10	Time Management	Manage time effectively, prioritising tasks and able to work to deadlines.

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Given that the employers look for workers having basic communication, thinking and problem solving skills and wish to learn and enhance the ability to work as a dedicated team member with a proper attitude (Baxter and Young, 1980). The notion is close to the theoretical foundation of person-environment fit and can also be explained with the assumptions of Attraction-Selection-Attrition (ASA) model. For example, fit theories suggest that employer select those who fit the requirements of job and organizational values. Specifically, the demand-abilities dimension of person-organization fit proposes that organization select individuals who have the abilities to meet job and organization's demands (Kristof-brown, Zimmerman, and Johnson, 2005).

Furthermore, since scholars have an agreement that the ES are those required to acquire and retain a job. ASA framework also emphasized that organizations attract, select and retain individuals who fit the organization (Schneider, 1987). Especially, the selection process of ASA framework describes that through formal and informal selection activities organization select people with the attributes the organization desires (Schneider, Goldstein, and Smith, 1995). Indeed, individuals not only match with the organization's requirement of specific skills and knowledge but with the ability to be proactive enough to see and respond to problems (Singh and Singh, 2008). On the whole, employability skills are key elements enable graduates to adapt the new work environment and meet the employer's demands.

### **Methodology**

Given the scope and nature of this study, an Employer Survey administered via a questionnaire was conducted. The questionnaire contained two (2) sections – A: contained questions on information of the companies. While Section B contained items related to the main dimensions of the study where the respondents firstly have to rate the required employability skills and personal attributes, and then rate their satisfaction on the skills and attributes the graduates possessed. A 4-point Likert-scale ranging from (1) strongly disagree to (4) strongly agree is used to indicate the degree of agreement / disagreement with each statement. The questionnaires were posted to some of the companies particularly those abroad and were also distributed by hand when some of the companies participated in the university's career fair.

The target respondents were companies that employed engineering and technology graduates from a private university in Malaysia. The database of these companies is maintained by the Career Advisory Unit under the Student Support Services Department of this university. Hence the research team worked with personnel from this unit to gain contact with the companies. The questionnaires were sent to 150 companies that were active in employing the university's graduates. Out of this, 62 companies returned the survey questionnaire consenting their participation in this study. This rendered a 41.3% responses indicating a good rate of response. The respondents were the selected immediate superior of this university's graduates. The data were keyed in and analysed using SPSS version 17.

**Result and Discussion**

Descriptive analysis of data was conducted on all the 62 returned survey questionnaire. Scale mean scores were computed and analyse for all variables to address the objectives of this study. The discussion below illuminates the results and findings for the **important** (Table 3) employability skills and attributes followed by a discussion on the results and findings for **satisfaction** (Table 4) of the employability skills and attributes graduates possessed.

**Table 3: Scale Mean Score for Employability Skills (Importance)**

No	SKILLS	MEAN SCORE IMPORTANCE (I)
1	Teamwork	3.75
2	Dedication And Commitment	3.73
3	Quality Of Work	3.72
4	Professional Ethics	3.70
5	Ability To Work Under Pressure	3.64
6	Able To Work Independently	3.61
7	Analytical Skills / Critical Thinking	3.51
8	Problem Solving Skills	3.48
9	Oral Communication Skills	3.48
10	Adaptability	3.45
12	Innovative And Creative Thinking	3.45
13	Technical Competencies	3.43
14	Management Skills	3.43
15	Computer Skills	3.41
16	Written Communication Skills	3.41
17	Interpersonal Skills	3.37
18	Quantitative Skills	3.13

The results in Table 3 above shows that the top five of the eighteen skills and attributes measured placed as most important by the employers were namely *Teamwork* (3.75), *Dedication and Commitment* (3.73), *Quality of Work* (3.72), *Professional Ethics* (3.70) and the *ability to work under pressure* (3.64). This findings indicated that employers require people who can work with others, people who are highly dedicated and committed to perform their jobs. At the same time the employers also emphasized on the importance of quality of work and ethics of employees where these attributes are imperative in ensuring jobs performance are of high standards with integrity. This is seemingly consistent with the listing provided by University of Kent, where teamwork and initiative / self-motivation are among the top 5 most important skills employers wants in graduates. Meanwhile, results, showed in Table 4, of employers' satisfaction of the employed graduates, shows that they are satisfied with the graduates' *teamwork* (3.24), their *ability to work independently* (3.18), their *professional ethics* (3.09), *computer skills* (3.08) and *quality of work* (3.06). This findings support the preceding results where the employers indicated the list of important employability skills and attributes. The employers showed that they were highly

satisfied and satisfied with three out of the top five most important skills and attributes. Interestingly, the findings are to some extent in line with the ASTD Employability Skills Group (Overtoom, 2000) where the skills and attributes found to be important in this study falls within the category of Group Effectiveness and Developmental.

**Table 4:** Scale Mean Score for Employability Skills (Satisfaction)

No	SKILLS	MEAN SCORE SATISFACTION (S)
1	Teamwork	3.24
2	Able To Work Independently	3.18
3	Professional Ethics	3.09
4	Computer Skills	3.08
5	Quality Of Work	3.06
6	Technical Competencies	3.06
7	Dedication And Commitment	3.05
8	Adaptability	3.04
9	Innovative And Creative Thinking	3.03
10	Quantitative Skills	3.02
11	Problem Solving Skills	3.00
12	Analytical Skills / Critical Thinking	2.98
13	Interpersonal Skills	2.98
14	Ability To Work Under Pressure	2.97
15	Management Skills	2.94
16	Written Communication Skills	2.91
17	Oral Communication Skills	2.90

Nevertheless, it is critical to note that although the employers rated *oral communication skills*, *management skills*, and *written communication skills* almost highly important, mean score 3.48, 3.43 and 3.41 respectively. These three skills were the least that they were satisfied with of the graduates where mean scores for *management skills* (2.94), *written communication skills* (2.91) and *oral communication skills* (2.90). This findings indicate that the graduates need to be further equipped with these skills at preparatory level (university) for them to perform better after being employed.

### Conclusion

This study is deemed critical in gaining insights to the important requirements by employers in getting the right employees. Graduates in engineering and technology may seem to be technically equipped to perform their jobs however, the skills and attributes placed as important from the employers are beyond technical competencies. This is also evidenced in the level of satisfaction over the graduates that have been employed.

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# Micro-Enterprise Growth Strategies: A Conceptual Model

**Abu Bakar Sedek Abdul Jamak\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: abubakar\_sedek@petronas.com.my*

**Zulkipli Ghazali**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

**Md Akhir M Sharif**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*\*Corresponding author*

## **Abstract**

**Purpose** – This paper presents a growth success model for micro-entrepreneurs (MEs) to progress from micro-business level upwards to the higher business echelon of small and medium size enterprises (SMEs). Hence, the primary purposes of this paper are to present a systematic approaches in creating a capable entrepreneurs from factors that help motivate the initiation of the micro-business, onwards to the identification and acquisition of skills needed and right mindset to entrepreneurially manage the business to progress from the micro-level onto the next higher level of business, the SMEs.

**Research Methodology** – It is a cross sectional study which is descriptive in nature. It involved secondary data collection and use of content analysis technique to assess entrepreneurial practices of many successful entrepreneurs.

**Findings** – The paper seeks to reveal why MEs are not progressive in their entrepreneurship and what are the essential requisites that need to be developed for sustainability; more importantly the required skills for MEs to transform their micro-businesses into striving and growing SMEs.

**Practical implications** – The paper further discusses on how the government can act as a catalyst and a critical push factor and what mechanism and strategic approaches required in transforming the MEs from being a layman businessman into a businessman with entrepreneurially driven mind equipped with all the business skill and acumen.

**Originality/Value** – This is the first study in its type in Malaysia. It proposes a growth strategies model on a systematic approach to transform and create from merely micro-business into bigger one.

**Keywords:** Micro-entrepreneurs (MEs), Small and Medium Enterprises (SMEs), Growth, Transformation, Entrepreneurship, Government.

**Paper type:** Conceptual Paper

**Introduction**

MEs are the backbone of the economy for most countries in the world including Malaysia (The Star, 27 March 2009). Micro-businesses and small enterprises have been recognized as a major source of income and employment avenues in many less-developed as well as developing countries (Mead and Liedholm, 1998). The Inter-American Development Bank (1997) narrated that MEs make a major contribution to amass employment and national income in South America. MEs contributed significantly in employment of people in rural and sub-urban areas by producing common goods and services for the necessity of the growing population; amongst others hawkers' food, retail and sundries, tailoring and countless consumer products. MEs is an important platform for low-income group to generate potential economic resources through productive business activities, and plays an important role as a mean of eradicating poverty.

A major population of 99.2% or 548.267 of the registered businesses in Malaysia comprises of SMEs, out of which 80% were MEs. The census also revealed that MEs and SMEs contributed 64% (3.22 million out of 5.04 million) of total employment and produced RM159.4 billion of added values in 2003 (Department of Statistic, Malaysia, 2005; p.12 and 14). The World Bank reported that 75% of total employment in many developing countries comes from the informal MEs sector (Webster and Fidler, 1996).

National SME Development Council of Malaysia (NSDC) defined SMEs by having two (2) areas of measures; number of employees and annual sales turnover. NSDC has on 9 June 2005 approved the common definition of SMEs on the basis of those measures, across economic sector for adoption by all Government Ministries and Agencies involved in SMEs.

- A micro-enterprise in manufacturing (including agro-based) is an enterprise with full-time employees of less than five (5) or with annual sales turnover of less than RM250,000,
- A micro-enterprise in service and primary agriculture is an enterprise with full-time employees of less than five (5) or with annual sales turnover of less than RM200,000.

**Importance of Micro-Enterprises in economic environment**

Today, micro-enterprises are seen as a pathway for entrepreneurship; more importantly on their contribution towards employment, social and economic stability besides having that important role as being the platform towards innovative potential and competitive power (Wennkers and Thurik, 1999). Recent econometric evidence reveals that micro-entrepreneurship, without any doubt, is a vital element of economic growth for most countries (Audretsch and Thurik, 2000; Caree and Thurik, 1999; Caree et al., 2002).

According to the Department of Statistics, Malaysia (2004), the composition of Malaysian companies is in majority made of MEs (60%), in comparison with small (28%), medium (9%) and large (3%) enterprises. The significant role of MEs in the development of all sectors in Malaysia suggested that the growth success factors of MEs are crucial to the sustainability of the economic and social advancement towards vision 2020; a developed nation status.

**Escape from poverty and survival instinct**

Micro-enterprise is one of the most important avenues through which low-income and ordinary people may be able to escape being jobless and possibly poverty. This group has limited skill and

low level of education making their chances in competing for formal job sector is very slim. Most of them will find economic opportunities in MEs by being self-employed or as owners of micro-businesses. In conclusion, MEs has been known to be the most potential segment of the economy. They are growing faster, having greater innovative potential and may be more profitable than the larger size enterprises. Therefore, the role played by entrepreneurship towards micro-enterprises to alleviate the general economy and reduce poverty in less-developed and developing countries are bright, significant and promising.

### **Issues and Problems**

Based from previous study, 79,310 businesses had failed in Malaysia during the year 2002 (CCM 2002). It was revealed that the main cause of failure among micro-businesses was their inability to adapt and survive with the changes that are needed from being a traditionally styled management to that of an entrepreneurially organized management. This constraint resulted in the inability of micro-businesses to capitalize on the huge market opportunities which they can potentially exploit (Hofer, and Charan, 1996). Despite the many research reported on MEs regarding growth and factors contributing to venture growth, but yet only 10% of MEs population was able to survive beyond 10-year timeframe.

The Ministry of Agriculture, Malaysia had been helping more than 2,000 MEs through mentor and coach program to upgrade their position as SME entrepreneurs (BH Online, 2 June 2010). One crucial area deliberated in the program was on how to increase MEs annual sales. Out of 2,000 MEs identified, only 10% had successfully achieved the annual sales of RM250,000 and hence upgraded to SMEs. This finding put forward two crucial issues that need to be addressed:

1. How can the Government act as a catalyst and become a push factor in upgrading the MEs into a more potential business ventures and escalating them to become SMEs?
2. What mechanism and strategic approaches that are needed to shift the skill and mindset of MEs into successful entrepreneurs.

Both issues, successfully resolved, will be able to transform MEs from being a layman businessman into a businessman with entrepreneurially driven mind equipped with all the business skill and acumen.

Therefore, it is the primary objectives of this paper to present a systematic approaches in creating a capable entrepreneurs from factors that help motivate the initiation of the micro-business, onwards to the identification and acquisition of skills needed and the right mindset to entrepreneurially manage the business to progress from the micro-level onto the next higher level of business, the SMEs.

### **A Micro-Entrepreneur's Business Growth Model (refer to Figure 1)**

This Section outlines a comprehensive look at the elements of success factors MEs should possess from its initiation onwards through its operations. This Section also discusses the dependent, independent and mediating factors of MEs.

### **Drivers for growing up a micro business.**

This sub-section highlights the elements successful MEs should have before the enterprises are established, operated and sustained. These elements will drive the entrepreneurs into ensuring that the micro-business ventures go all the way from initiation to the pinnacle of business success.

### **Set out Clear Objectives**

Setting clear objectives involved achievement motives and economic necessity, which strongly influenced the business profitability (Brockhaus and Horwitz, 1986). Entrepreneurs whose objectives are to expand and to have established business enterprises will be motivated to perform better thus resulting in higher income and profit margin (Storey, 1994). Entrepreneurs may overcome the structural barriers when they have set out clear objectives to perform better profitability (Lerner et al., 1997). Another studies found that setting personal objectives also act as stronger motivation to the entrepreneurs to achieve their goals in business. All in all, output based business drivers are the focus in setting out business objectives.

### **Attract and Please Customers**

During start-up, most MEs began their businesses revolving around either their expertise or passion. These factors are the basis in which they can serve their customers best. Many MEs have no background, what more expertise, on sales and marketing; a crucial cog towards effective sale of their products and services. But yet, the fact remains that “80% of success in any business rely on entrepreneurs themselves being able to effectively attract and please their customers”. A survey by flyingsolo.com.au questioned business owners “What were the business challenges facing your business in the last 12 months?” It was reported 1,700 respondent entrepreneurs or 43.9% of the survey population said that their biggest challenge is how to attract and find new customers for their products and services. It is therefore extremely vital to attract new customers and being able to keep their loyalty with the brands continuously and consistently for losing customers poses a threat of the possibility of soon going out of business.

### **Keep the Customers and Make Them Stay Loyal**

The abilities of keeping the customers and maintain their loyalty with the brands are the most important measurement of customers’ satisfaction. This is the reason why brand owners incessantly remind their stakeholders through catchy and viral brand mantra (tagline) on satisfaction for example “Just Do It” for Nike, “Now Everyone Can Fly” for Air Asia, “Save Money, Live Better” for Walmart and “I’m Lovin’ It” for McDonald and many more. Continuously and consistently developing and improving customers’ satisfaction will always keep customers’ patronage and loyalty in enhancing sustainability of the business. Customers’ satisfaction is the very essence of any successful business.

Networking is the conduit that bond businesses and their customers. It usually involved the building of a relationship with important and large customers, suppliers and stakeholders that thrive on a win-win situation. Regardless at what stage of business development, arguably MEs always do Marketing By Networking (MBN). MBN is proactively as an approach for strategizing

in keeping customers to stay loyal which is compatible with the characteristics of MEs (Gilmore et al., 2001).

### **Managing the Customers and Business Development**

Managing the customers can be translated into an expectation of increase future purchases in the long run on the basis of strong customers' relationship. In managing the customers and strategizing business development, MEs have to plan the expansion in incremental step by step approach. For example, from one coffee outlet to a chain restaurant like Old Town White Coffee, or perhaps for a manufacturer of food or beauty product from a single product to product line extension such as ADABI and AVON.

As companies intent on growing with customers at the expense of competition, they should focus on strengthening the customers' relationship; frequently launching fresh initiatives to make their products offering more distinctive and appealing to customers. The MEs must be able to employ strategies in capturing customers and manage them, differentiating product and services, strengthening stakeholders relationship, strengthening market positioning, maximizing the power of advertisement and good networking managements to support growth.

Businesses are changing and innovations are more rapid than ever. Financial and marketing management must continue to evolve alongside their developments. Recognizing the appropriate financial and marketing management activities are therefore imperative to the success of these businesses.

### **Competitive Dynamics (Outcompete rivals and compete successfully)**

Business competition among micro-enterprises uses all types of tactics on their rivals in order to win customers, improve sales and most importantly on "how to survive". To stay ahead of the competitors, MEs need to develop and implement effective marketing strategies, differentiating their products, effective budgeting on promotional campaign, innovativeness and strong responses towards their competitors. The skillful enterprises stay alert on their competitors' business maneuver with good information in database and feedbacks, having detailed planned in mind on what reactions to be employed and think ahead on how to push more sales on the selected markets. Product differentiation is a major source of competitive advantage in most businesses while others are looking for niche markets (Hogarth-Scott et al., 1996). Many studies had reported that sales and marketing strategy have clearly contributed towards growth success as well as giving the competitive edge to think ahead on how to strategically outcompete business rivals.

### **Conduct Proper System and Operations**

It is important that all of the internal operations and communication systems converge to support the business' strategy in providing the business with a broad variety of their offerings which can boost competitiveness ahead of their rivals. In arriving at a proper system, there are no rights or wrongs. A systemize operation will evolve through feedback from employees, suppliers and customers. As businesses expand, more check and balances are required and these processes expose more of weaknesses on the system that necessitate corrective actions and adjustment. For example, most MEs experienced high turnover of their employees and workers absconded from their workplace. From such experience, creation of better working environment, motivating employees through rewards and incentives might be just the tools for achieving the targeted

productivity and financial performance. The system for operation therefore must capitalize on such tools as a mean of operational efficiency.

### **The Growth Mediating Drivers and Factors (refer to figure 1)**

Once the entrepreneurs have the drivers to grow up the micro-enterprises into the higher level business of SMEs, they must possess the following knowledge and skill to ensure that the higher level enterprises will be well managed.

### **Evaluation and taking corrective actions**

The evaluation and corrective action process require the actions of information gathering, identification and evaluation of options, decision making process, formally agreeing on the course of action and regular review of the action taken. The process however varies depending to situation. In MEs environment, the benchmarking requisite and the subsequent processes of evaluation, decision making and corrective action are more rapid; monthly, weekly, daily or even hours, as the situation become more difficult. MEs must always be on top in their knowledge of the daily business operation and have a deep understanding on the maneuver of the operations, enabling them to come up with corrective actions on every possible operational issues; workers, suppliers, clients, and hence able to persistently come up with strong initiative towards improving profitability.

### **Financial literacy**

Financial literacy is defined as the capability of analyzing and making informed judgment to arrive at effective decisions regarding the use and management of fund and money (Schagen, S and Lines, A. 1996). Understanding financial information is vital for offsetting the risk of business failures as it reveals the early warning signs of impending problems. A low financial literacy level is a drawback which carries across into their business lives. Hunter (1999) opined that competency in numeracy literacy must be the platform for any business improvement especially in self-employment situation.

### **Business Advisory (Performance coaching)**

Coaching implies motivating, inspiring, taking business people to greater heights by working with them to make things done to improve performance by using a method of show and tell approach. Performance coach may develop competencies and skills of strategic business functions. Suitably, it will provide the entrepreneurs with that coaching “transfer” understanding, technology, expertise and experience to escalate their businesses to a greater heights (The European Mentoring and Coaching Council).

### **Business Advisory (Mentoring)**

Mentoring helps entrepreneurs see the bigger picture by mean of the experience of the mentors and this can be used as an excellent blueprint for the entrepreneurs to map their business growth. To make mentoring successful, the mentors might have to push MEs to develop greater capabilities

and entrepreneurial potential, assist them on how to re-draw and re-shape their business directions, propose some added values to their original idea, instill growing confidence as their business develop, stimulate strategic mind, offer a sympathetic and emphatic ear when entrepreneurs need to discuss business issues and eventually prepare them for the apex of their organizational leadership role.

### **Government and other supportive environment**

The role of government assistance to the growth of MEs has been described in many studies. Sarder, et al. (1997) conducted a research of 161 MEs in Bangladesh and discovered that MEs which received support services such as education and training, marketing management, business extension, technical know-how, business related information and common facilities from the related government agencies experienced a significant rise in income and productivity. Yusuf (1995) also found that government's assistance was one of the key success factors for MEs in South Pacific. Governments in developing countries play an important role in promoting and supporting MEs by providing motivation, incentives and infrastructures. The growth success of MEs can further be influenced by support from stakeholders and others, either in the form of formal or informal support. Formal support can be in the forms of financial, technology, networking and strategic partnership or business contacts (Carrier et al, 20014) while informal supports may come from personal, families, acquaintances and community-based network for both start-up and growth phase (Lavent et al., 2003).

Clifton Barton (Microenterprise Business Development Service, September 1997) stated that friends, acquaintances and relatives are the primary sources of business assistance and support for most MEs. They are the first source in which the MEs turn to for information, loans, advice, patronage and human resources. They are the primary source of business contacts, networking and chief arbitrators in resolving business disputes.

### **Recommendation and Conclusion**

Survival is a crucial element in microenterprise environment. Rivalries are pursuing on whatever weapons of encountering their rivals to ensure sustainability in the marketplace. Rivals may use some kinds of unfair tactic such as black magic, which is commonly found in Malay micro-competitions. Abdul Jamak et al (2012) found that some failed MEs reported that they were disturbed by spiritual disturbances (black magic) and unable to carry out their business as usual and finally gave up. This evidently happens whereby the business areas are located in town and the intensity of competitions among the micro traders are very great due to the pressure to survive (Abdul Jamak A.B.S. et al., 2012). In the localize marketplace, competitions are greater in terms of competing each other for getting the same customers and butting in terms of prices, quality, spaces, and broad array of promotional items and attracting customers with more variety gadgets (Abdul Jamak A.B.S. et. al. 2012).

Attahir (1995) suggests that management skills can be referred as the entrepreneurs' ability to develop and effect good business plans, to acquire and run resources efficiently, to commit obligations with business demand and keeping records accurately. A lack of planning seems to be a common feature among MEs (Bosworth and Jacobs, 1989; Hogarth-Scott et al., 1996; Stone and

Brush, 1996). Furthermore, MEs are less likely to do plan and the detail involved is reduced (Atkins and Lowe, 1997). This is supported by some studies, which found that very few MEs produced written plans. However, the view that MEs do not plan at all may be a misnomer as there may still be clear mental frameworks of future plans regardless of whether they are formally written down (Kuratko et al., 1999; Wyer, 1997). However, it is argued two most commonly stated variables that seem to make the difference are management experience and capital.

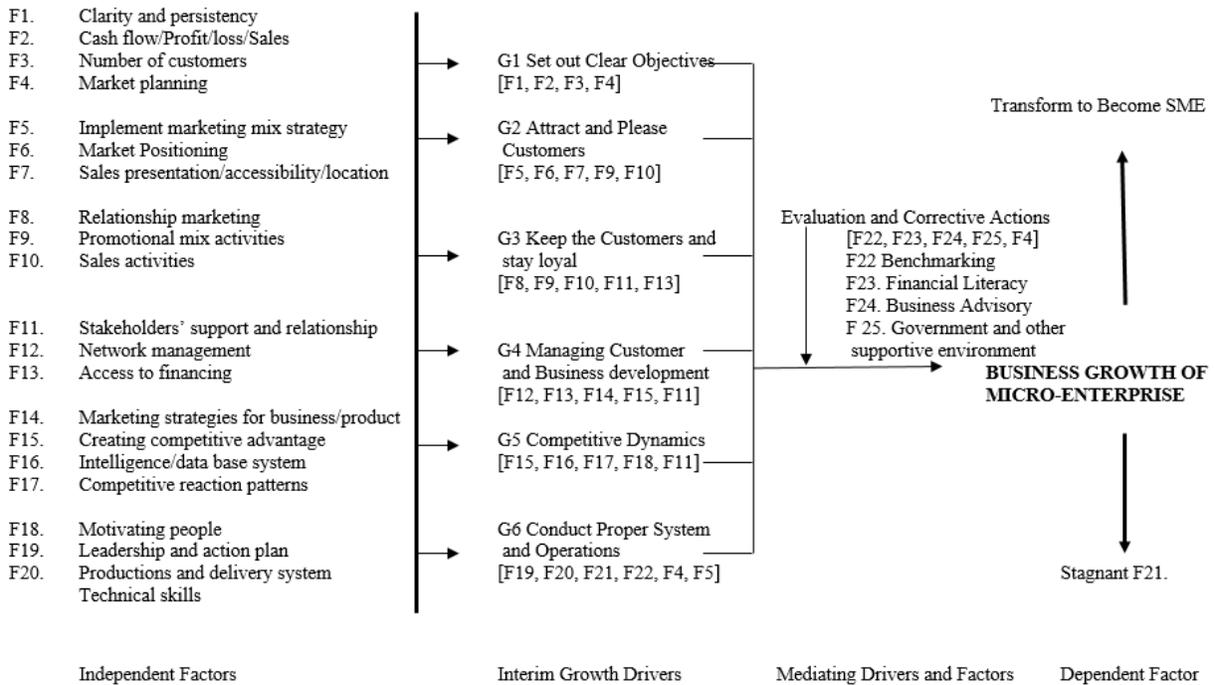
The Malaysian government has been continuously compassionate of entrepreneurship. Many steps has been taken to encourage the entrepreneurial development in general including providing a conducive economic environment, create numerous financing and funding schemes, as well as business advisory centres. The government has viewed to nurture young entrepreneurs as a way to facilitate and improve the entrepreneurial structure so as to create more business opportunities for the next generation. For this purpose, the government has given special attention for the growth development of MEs and SMEs (Arif and Abu Bakar, 2003).

### **MEs Growth Success Factors as Dependent Variable (refer to Figure 1)**

Micro-entrepreneurial growth success has been well-defined in many different ways. The easiest definition is by observing tangible features such as sales increases, growth in profitability, personal wealth and assets creation, and the business sustainability (Perren, 1999, 2000; Amit et al., 2000, Watson et al., 1998 and Dafina, 2008). The physical characteristics of the MEs in the developing countries are noticeably different from those in the developed countries, whereby the size of MEs in the former is bigger with an obvious predominance of male owners focusing on building successful businesses. In the developing countries, MEs are usually managed by those from the poor and low education background. Hence undoubtedly, not all of the poor can become entrepreneurs what more develop successful ventures (Eversole, 2000). Generally, those are the starting point; how many will effectively progress into generating more sales and increase the number of employees to a higher level of SMEs are the challenges faced by the MEs.

What MEs normally expect when they enter the business is not expansion or growth but more as an economic sustenance. This is one of the enlightenments as to why MEs fail to grow or expand; they are not interested or encouraged to expand. Philips et al (2007) discovered in Zambia that more than half of the MEs saw their businesses struggled to survive and lacking in ability in matters of entrepreneurial capacities such risk analysis, risk taking and expansion plan. As an indicator of business growth, the MEs must at least expand and upgrade themselves into the small enterprises having more than five (5) full-time employees.

Figure 1: Micro-Enterprise Growth Strategies: A Conceptual Model



The measurement of business growth (Headd, 2001; Montgomery, 2000; Taylor, 2004; Evans, 1987; Davidson, 1991 and Vesper, 1990) can be based on the following criteria:

1. Moving from part-time to full-time operation with business registration.
2. After more than three (3) years in business operations, the MEs are able to generate sales of more than RM250,000 annually and generating a meaningful income that is more than minimum wage and contributes to economic self-sufficiency for the owners' household.
3. Ability to create employment opportunities for others and having more than five (5) full-time workers.
4. The owner's satisfaction of achieving their objectives in sales, profitability and overall achievement of the enterprise.
5. The owners must also have the willingness to continue pursuing growth.

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## Multi-ethnic Groups Shopping Trip Frequency: Scoping Research on Malaysian Shoppers

**Sohel Ahmed**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: expertisebd@gmail.com*

**Satirenjit Kaur Johl**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia*

*\*Corresponding author*

### **Abstract**

**Purpose:** To investigate what extent the shopping trip frequency variance is across multi-ethnic groups in Malaysia.

**Design/methodology/approach:** The Independent Sample T Test using SPSS v. 22 was used to verify the hypothesis. The multi-stage cluster sampling technique under the probability sampling method was used to collect the data.

**Findings:** The results reveal that there is no variance in shopping trip frequency among the multi-ethnic shoppers in Malaysia.

**Research limitations/implications:** This result does not support the Blaylock findings, which stated that multi-ethnic shoppers had significant variations in shopping trip frequency among ethnics. This study postulates that there could be two possible reasons that this study's finding does not support the Blaylock statement. One, Blaylock conducted his research in the United States of America, which is an individualistic society. However, this study was conducted in Malaysia, which is a collectivist society. Thus the collectivist society's multi-ethnic groups may not have a similar effect as noted in an individualistic society. Another cause could be due to the New Economic Policy. Malaysia has gone through the socio-economic reform process; thus, no variance in shopping trip frequency may be attributable to the successful application of the New Economic Policy. There is a scope of further studies to be undertaken to gain a better understanding as to whether this Malaysian different result in comparison to the USA is due to an individualistic-collectivist cultural effect or due to the New Economic Policy.

**Practical implications:** the finding of this study enlightens the Malaysian retail industry in formulating strategies to increase shopper trip frequency.

**Originality/value:** This study conducted in Malaysia. It is a collectivist society and has multi-ethnic groups. A very limited study examined shopping trip frequency, especially on collectivist society.

**Keywords**—Shopping trip frequency, Consumer behavior, Multi-ethnic group effects, Individualistic culture, Collectivist Culture, Scoping research on Malaysian shoppers.

## INTRODUCTION

Despite the growing of online shopping, shopping for most purposes means physical travel to a shopping site (Magrath and McCormick, 2013); (Ahmed, Kaur Johl, et al., 2015). The site most frequently visited is either a hyper or supermarket or a shopping mall or in other word retail establishment. In fact, shopping trip is a major source of recreation as well as a household chore. Researchers (Reimers and Chao, 2014) had noted that shopping is one of the activities with the most positive attribute of being able to meet with others. Studies show that there are frequent and infrequent shoppers (Martin, Mortimer, and Andrews, 2015). Considering high shopping frequency as the vital metric for their successful operation, retailers have been interested in identifying frequent shoppers and would like to formulate strategies to increase retail crowding (Mehta, 2013).

However, according to a recent study (Gilbride, Inman, and Stilley, 2015) consumers have changed their shopping trip frequency. In 2008 Nelson first notice that shoppers lowered the shopping trip frequency. At first researchers assume that this infrequent shopping trip tendency is just because of the economic crisis. But this trend seems to become a normal part of the consumer habits. Even though signs of economic recovery emerged, 72% of the consumers surveyed in the world feel like they are still in a recession. The average number of shopping trips per household dropped from 158 per year across 2008 and 2009 to 144 in 2014. A decrease of 0.8% in developed countries and 1.1% in emerging markets.

The shopper's behavior has changed. Other research shows that this change is because, on a personal level, a large mainstream shoppers mainly want to expend quality time with their family or friends (Xu-Priour, Truong, and Klink, 2014); (Ahmed, Ting, and Johl, 2015). Which is more related with shopper's ethnicity or cultural values. That's why to increase shopping trip frequency in a multi-ethnic society, retailers should identify each ethnic variant on shopping trip frequency and maximize opportunities to draw shopper's interest and engage them.

A multi-ethnic society refers to a society that consists of peoples from more than one culture, ethnic group. The success of a multi-ethnic society often hinge on the sharing of a single language. This can be seen in the Malaysia with the Bahasa Melayu language. While Bahasa Melayu may not be the primary language of all the people living in Malaysia, it is the primary language used for daily business purposes.

Another important component of a successful multi-ethnic society is an understanding and tolerance towards all ethnic people. Without the approval of the differences between cultures and ethnic groups, a multi-ethnic society will be separated and prone to unrest.

Despite the widespread research that can increase shopping trip frequency, such as the effects of time pressure and impulse buying tendency (Lin and Chen, 2013), The Effects of Demographic Variables on Measuring Perceived Risk (Mitchell and Boustani, 2015), The influence of gender, age, education on shopping responsibilities (Flagg, Sen, Kilgore, and Locher, 2014), Evaluating the performance of demographic targeting using gender (Jansen, Moore, and Carman, 2013) There is none of the research on multi-ethnic group variation in shopping trip frequency especially in a collectivist society. This is unfortunate because without knowing such, retailers may not apply similar strategies to both (Individualistic-Collectivist) society in order to retain high store crowding.

This study examines the variation in shopping trip frequency across multi-ethnic groups in Malaysia. For this purpose this study separated Malaysian shoppers into three ethnic groups (1) Malay versus Chinese (2) Malay versus Indians, and (3) Chinese versus Indians. Shopping trip frequency variance was chosen as dependent variable because as per the literature review, Blaylock (Blaylock, 1989) found ethnicity is the most statistically significant variable in his shopping trip frequency model. He identified that the households headed by a black are 20 percentage points less likely to shop as often as nonblack households.

Hence, as Blaylock (Blaylock, 1989) conducted research in the United States of America, which is an individualistic society, this study wished to confirm his findings with ethnic groups in collectivist society data. Therefore, objective of this study is to what extent the shopping trip frequency variance across ethnic groups in individualistic to collectivist society. For this study Malaysia has chosen because it is a multi-ethnic collectivist society.

## **LITERATURE REVIEW**

### *A. Shopping trip frequency*

There are three streams of related prior researches to classify frequent shoppers; first, one school of thought considers that shopping trip frequency is clearly an empirical issue whether shoppers visit grocery shops regularly or casually. However, Kahn and Schmittlein (Kahn and Schmittlein, 1989) made an enlightening comment on this query. Classifying shoppers into two segments, “Quick” and “Regulars,” by employing the amount of money spent as an exogenous variable, they established that “Regulars” made grocery shopping trips mostly in weekly breaks. This finding recommends that shoppers are assorted in terms of shopping trip regularity. There may be a segment of shoppers who make shopping trips in a casual fashion while shopping trips of other shoppers may be regular.

A second stream of shopping trip frequency studies has focused on the issue of a specific type of shopping trip regularity applied to all shoppers. With a postulation of shoppers’ casual shopping process, exponentially distributed inter shopping times have been commonly measured by researchers (Goodhardt and Ehrenberg, 1967). Likewise, applying the NBD (Negative Binomial Distribution) model built on exponential inter shopping times with gamma heterogeneity of shopping rates to shopping trips, Frisbie, Jr. (Frisbie Jr, 1980) resolved that consumers frequently go to supermarkets at least for their “fill-in” shopping trips. On the other hand, questioning the recall less property of exponential distribution, many researchers have proposed the Erlang-2 distribution, which delivers a more frequent shopping process (Katole, 2015), (Jeuland, Bass, and Wright, 1980) and (Wheat and Morrison, 1990). However, these studies also did not question the possibility that consumers vary in terms of their trip regularity.

Finally, in regards to shopping trips, some have tried to investigate the relationship between shopping frequency and shoppers’ demographic characteristics, Doti and Sharir (Doti and Sharir, 1981), Blaylock (Blaylock, 1989) and Bawa and Ghosh (Kim and Park, 1998). Ethnicity and ethnic identity have been studied to understand shopper’s demographic profiles (Costa and Bamossy, 1995), (Sivakumar and Nakata, 2001), (Vida, Dmitrovic, and Obadia, 2008), (Visconti et al., 2014), (Jafari, Dedeoğlu, Regany, Üstündağlı, and Batat, 2014), (Catherine Demangeot, Demangeot, Broderick, and Craig, 2015) and (Demangeot, Broeckerhoff, Kipnis, Pullig, and

Visconti, 2014). In particular, there have been new directions in researching ethnicity in marketing and consumer behavior (Jafari and Visconti, 2014) which can help in building the relationship between shoppers' trip frequency and their demographic characteristics.

*B. Individualistic-collectivist culture*

In a study of cultural value differences in 40 nations, Hofstede (Hofstede, 1980) found that individualism-collectivism accounted for the greatest variance in the goal importance of the dimensions to be studied. Triandis (Triandis, 1995) well defined collectivism as a social design that contains individuals who grip themselves as an integral part of one or more collectives or in-groups, such as family and co-workers. People who are more collectivist are often driven by the norms and duties imposed by the in-group, give priority to the goals of the in-group, and try to emphasize their connectedness with the in-group. He describes individualism as a social pattern that consists of individuals who see themselves as autonomous and independent. People who are more individualist are driven by their own favorites, needs and rights, give importance to their personal goals and emphasize a rational analysis of their affiliations with others. These social patterns are expected to influence shopping trip frequency through their effect on a person's self-identity, responsiveness to normative influences and the need (or lack of need) to suppress internal beliefs in order to act appropriately.

The tendency to emphasis on group preferences and group harmony in collectivist cultures leads to an ability to repress internal (personal) attributes in certain settings. Accordingly, people in collectivist cultures often shift their behavior depending on the context or what is "right" for the situation. Among collectivists, a person is usually seen as more mature when they put personal feelings away and act in a socially appropriate manner rather than in a way consistent with personal attitudes and beliefs (Triandis, 1995).

Collectivist cultures also highlight the control and balance of one's emotions more so than individualistic cultures (Soto, Levenson, and Ebling, 2005), (Mitamura, Leu, Campos, Boccagno, and Tugade, 2014) and (Schoefer, 2010). For instance, the maintenance of harmony among the ethnic groups is dependent on members of each ethnic group's ability to manage their emotions. In short, culture is likely to impact an individual's emotional understanding by determining the appropriate expression of one's feelings and its vary across individuals to collectivist culture (Su, 2008).

In individualist cultures, people often overlook the potential negative values of their shopping trip frequency (Sun, Horn, and Merritt, 2004), preferring to focus on the positive values of their actions and on their own feelings and goals. This may not be true for people from collectivist cultures who are more likely to focus on the potential negative values of their behavior and the effect of their actions on in-group members. There is a greater likelihood that the people in collectivist cultures will consider the negative values of their actions and it might influence them in their shopping trip frequency.

Cross cultural researches have shown that northern and western Europeans and North Americans tend to be individualists and that Chinese people, other Asians, Latins and most East and West Africans tend to be collectivist (Hofstede, 1980).

**THE STUDY**

The independent variable of this study consisted of three ethnic groups. To be more precise, multiple comparisons were made among the Malay, Chinese and Indian shoppers.

The dependent variable was "Shopping Trip Frequency". To gather this data, each subject was asked, "How often do you go shopping?" The subjects were given the response choices of (1) Daily, (2) 2-3 Times per week, (3) 1 Time per week, (4) 2-3 Times per month, (5) 1 Time per month and (6) Rarely.

For reader convenience, the following three hypotheses are stated.

H1: There is significant variance in shopping trip frequency between Malay and Chinese shoppers.

H2: There is significant variance in shopping trip frequency between Malay and Indian shoppers.

H3: There is significant variance in shopping trip frequency between Chinese and Indian shoppers.

**SCOPING RESEARCH ON MALAYSIAN SHOPPERS**

This study has been conducted in Malaysia. Three scopes behind choosing Malaysia were: first, it has a multi-ethnic society; secondly, it is a collectivist society and finally, it has multinational retailer exposures.

*Multi-ethnic country*

In Malaysia, Malays are differentiated from the other two major Malaysian ethnic groups, Chinese and Indians, on the basis of the religion of Islam. Islam establishes a key element in Malay ethnic identity and therefore, it has a critical impact on the development of the Malay culture (Mastor, Jin, and Cooper, 2000). As such, the thoughts of religiosity and ethnicity of the Malay society are not mutually exclusive, but rather multidimensional. A Malay is born into the culture and religion at the same time, and thus, one who rejects Islam is no longer legally considered Malay.

According to 2011 statistics, the total population was 28.3 million of which 91.8 per cent were Malaysian citizens and 8.2 per cent were non-citizens. Malaysian citizens consisted of the ethnic groups: Malay (67.4%), Chinese (24.6%) and Indians (7.3%). Many aspects of the Malaysian life are viewed through an ethnic prism. Although Islam is the official religion, Malaysia has managed to build a multi-ethnic and multi-religious state that has been cited as a model for others to emulate.

*Collectivist society in comparison to the United States of America*

According to Hofstede the fundamental issue addressed by the individualistic dimension is the extent of interdependence a society maintains among its members. It has to do with whether people's self-image is defined in terms of "I" or "We". In Individualist societies, individuals are likely to look after themselves and their direct family only. In a collectivist society, individuals belong to 'in groups' that take care of each other in exchange for loyalty.

FIGURE: 1

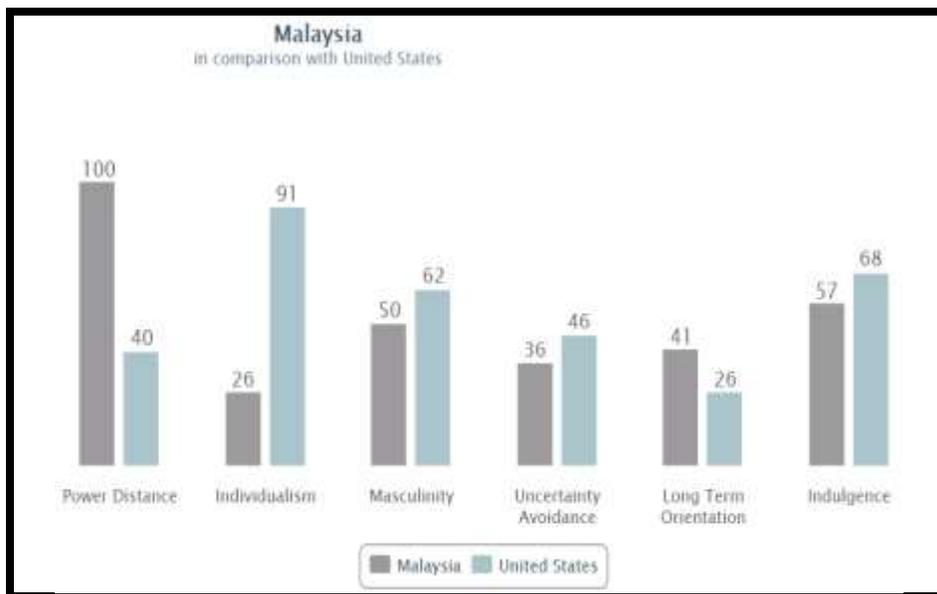


Figure 1, shows that, in individualistic culture Malaysia, with a score of 26, mean it is a collectivist society. On the other hand, the United States had the highest score of 91 meaning that it had individualist cultures.

*Exposure to multinational retailers*

Malaysian foreign direct investment inflow (FDI) has become stable and improved. The major contributing sectors are from wholesale and retail (Mohd Roslin and Melewar, 2008). Many emergent retailers are available and the rivals in this industry have made this industry highly viable. Rivalry in the retail industry has also led to an improvement in competence. Since 2006, Tesco, Carrefour and AEON have made substantial investments to develop a modest retail network in Malaysia (Business Monitor International, 2007).

The space for Malaysian retailers to expand nationally, however, still exists. Mydin Mohamed Holdings Berhad (Mydin) is one of the leading local retailers that keep emergent their business operation from selling cost effective Muslim clothes, apparel and prayer materials with a wide range of groceries. The Muslim religious concept of halal (permissible) by Mydin, for targeting a certain religious or ethnic group, makes challenging situations to other renowned players such as Tesco, Carrefour and Giant (Hassan and Rahman, 2012). Therefore, to formulate ethnic friendly strategies that can increase shopping trip frequency, Malaysia’s retailers should know the variance of multi-ethnicity on shopping trip frequency in a collectivist society.

**METHODOLOGY**

The data for this study were collected through questionnaires. The respondents were household customers who reported their shopping trip frequency.

The sample size for this study was 112. The samples in this study were restricted to (1) household customers, (2) persons responsible for household shopping and (3) adults aged 18 and above. The three-stage cluster sampling technique was employed, where groups of heterogeneous members of the population were identified. To choose the sample for this study, probability, random sampling was used.

To test hypotheses H1, H2 and H3, pertaining to the pace of ethnicity and shopping trip frequency, at first, the frequency analysis was used to see the extent within the shopping trip frequency. Secondly, the analysis of variance’s statistical procedure was used for the overall test of significance. Finally, when the variance was justified, a more in-depth analysis was made using the “Independent Sample T Test” through SPSS v.22. This technique was selected because it best met the objective of the study. The 0.05 level of significance was the acceptance criterion for all statistical tests; absolute probabilities have been reported for all the findings.

**THE RESULT OF THE STUDY**

*Frequency Analysis*

In the first phase, this study ran the frequency analysis to see how often shoppers visited shopping sites in Malaysia. After the frequency analysis, Table: 1 confirmed that 40% of the shoppers visited shopping centers 2-3 times per month. 27.7% of the shoppers visited at least 1 time in a week. 25% of the shoppers visited 2-3 times per week. 3.6% of the shoppers visited at least once in a month. Only 2.7% of the shoppers visited rarely and 0.9% of the shoppers visited every day. It also confirmed that there was variation across the frequency.

TABLE: 1

Frequency Analysis	Frequency	Percent	Valid Percent	Cumulative Percent
Daily	1	.9	.9	.9
2-3 Times per week	28	25.0	25.0	25.9
1 Time per week	31	27.7	27.7	53.6
2-3 Time per month	45	40.2	40.2	93.8
1 Time per month	4	3.6	3.6	97.3
Rarely	3	2.7	2.7	100.0
Total	112	100.0	100.0	

*Analysis of Variance*

“The Independent Sample T test” through SPSS v. 22 was used to test the hypothesis and determine which pair or pairs of ethnic groups produced the significant results. The overall analysis of variance test interestingly revealed that there was a highly insignificant difference or no difference anywhere among all three Malaysian ethnic groups in shopping trip frequency.

**Hypothesis 1: Malay versus Chinese shoppers**

Data from 77 Malays and 28 Chinese were collected and analyzed. The independent sample T test was employed to test the hypothesis. The results of the H1 tests indicated that the variance of shopping trip frequency among Malay versus the Chinese ethnic shoppers was insignificant (see Table: 2) (Malay shoppers’ mean = 3.1818 versus Chinese shoppers’ mean = 3.5357). This means that there was no notable variance between these two ethnic shoppers in terms of shopping trip frequency. Furthermore, the probability score (Table: 3) between these groups was ( $p=0.107$ ), which was greater than the statistically significant value ( $p>0.05$ ).

TABLE: 2

SHOPPING TRIP FREQUENCY	Group Statistics				
	Ethnic Group	N	Mean	Std. Deviation	Std. Error Mean
	Malays	77	3.1818	.95597	.10894
	Chinese	28	3.5357	1.07090	.20238

TABLE: 3

SHOPPING TRIP FREQUENCY	Independent Samples Test					
	Group: Malay Versus Chinese	for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Probability
Equal variances assumed	.143	.706	-1.624	103	.107	

**Hypothesis 2, Malay versus Indian shoppers**

The result of the H2 test shows that the variance of shopping trip frequency among Malay versus Indian ethnic shoppers was also insignificant (Malay shoppers’ mean = 3.1818 versus Indian shopper’s mean = 3.3333). This means that there was no remarkable variance between these two shoppers groups in terms of shopping trip frequency (see Table: 4). Furthermore, the probability score (Table: 5) between these groups was ( $p=0.714$ ), which was more than the statistically significant value ( $p>0.05$ ).

TABLE: 4

SHOPPING TRIP FREQUENCY	Group Statistics				
	Ethnic Group	N	Mean	Std. Deviation	Std. Error Mean
	Malays	77	3.1818	0.95597	0.1089
Indians	6	3.3333	1.21106	0.4944	

TABLE: 5

SHOPPING TRIP FREQUENCY	Independent Samples Test					
	Group: Malay Versus Indians	Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Probability
Equal variances	.131	.719	-.367	81	.714	

**Hypothesis 3: Chinese versus Indian shoppers**

The result of the H3 test confirms that the variance of shopping trip frequency among Chinese versus the Indian shopper’s ethnic group was insignificant, too (Table: 6) (Chinese shoppers’ mean = 3.5357 versus Indian shoppers’ mean = 3.3333). It shows that there was no notable variance between these two shoppers groups in terms of shopping trip frequency. Furthermore, the probability score (Table: 7) between these groups was ( $p=0.684$ ), which was larger than the statistically significant value ( $p>0.05$ ).

TABLE: 6

SHOPPING TRIP FREQUENCY	Group Statistics				
	Ethnic Group	N	Mean	Std. Deviation	Std. Error Mean
	Chinese	28	3.5357	1.07090	.20238
Indians	6	3.3333	1.21106	.49441	

TABLE: 7

SHOPPING TRIP FREQUENCY	Independent Samples Test					
	Group: Chinese Versus Indians	Levene's Test for Equality of		t-test for Equality of Means		
		F	Sig.	t	df	Probability
Equal variances	.014	.906	.411	32	.684	

In a nutshell, the results of the hypothesis testing are:

H1: There is *insignificant* variance in shopping trip frequency between Malay and Chinese shoppers.

H2: There is *insignificant* variance in shopping trip frequency between Malay and Indian shoppers.

H3: There is *insignificant* variance in shopping trip frequency between Chinese and Indian shoppers.

### CONCLUSIONS

This study has examined the variance of multi-ethnic shopping groups' shopping trip frequency in a collectivist society (Malaysia) and found insignificant variance among the three major ethnic groups in Malaysia. Thus, this study argues with the Blaylock (Blaylock, 1989) findings and suggests that the variance of multi-ethnic groups' shopping trip frequency cannot be generalized to individualistic or collectivist societies; therefore, retailers should not undertake similar strategies to increase shopper trip frequency in any of the cultural settings.

The reader must be cautioned against generalizing these insignificant variances among the collectivist society as a whole because this study has been conducted in Malaysia and this study also notes that Malaysia has gone through the socioeconomic restructuring process through the New Economic Policy (NEP). That was implemented during the period of 1971 to 1990. The underlying objective of the NEP was stated as national unity (One Malaysia). The goal of the NEP was twofold; one, eliminate poverty and the other was to restructure society to eliminate the identification of ethnicity with the economic function through fast development of the economy over time (Jomo and Sundaram, 2004). This study postulates that one of the reasons for the insignificant variance among the Malaysian ethnic groups in shopping trip frequency can be due to the successful implementation of the NEP.

With the postulation of no variance among the ethnic groups in shopping trip frequency due to the successful implementation of the NEP, the results may not apply to all collectivist societies, nor to any market other than Malaysia. There is a need for more research in other collectivist societies to confirm these findings.

The exact figures of this study are not important, as they pertain only to this research situation. However, what these findings say is important for the Malaysian retail industry. This study suggests to the Malaysian retail industry that it must formulate strategies irrespective of much thinking about or emphasis on multi-ethnic group variance. Retailers should give more emphasis on the benefits

that they can provide to the shoppers (Ahmed, Ting, Johl, and Jamak, 2015) irrespective of the ethnic group, which can increase the shopper's shopping trip frequency.

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## Origins of Metrosexual: In the Light of Events

**Sobia Bano\***

*Department of Management and Humanities, Universiti Teknologi Petronas, Malaysia  
Email: sobia.mohammad@gmail.com*

**Md Akhir Mohd Sharif**

*Department of Management and Humanities, Universiti Teknologi Petronas, Malaysia  
Email: mdakhir\_sharif@petronas.com.my*

*\* Corresponding author*

### Abstract

**Purpose:** The objective of this literature based paper is to understand that how different events in the past had affected the traditional masculinity and given an upsurge to the sub-culture of metrosexual. The paper will discuss the origins of the metrosexual in the light of various events and their impacts

**Methodology:** Almost all search engines were used to search relevant literature from 2005 until date. The inclusion criteria of papers comprise of three essential points. The first is that the paper should explicitly talk about the emergence of the particular event leading to the impact of that event internationally and lastly how it is linked with phenomena of metrosexual.

**Findings:** The metrosexual is phenomena of 21<sup>st</sup> centuries, but its roots are found in history. It has emerged with the passage of time, and there are many other factors and events, which have equally contributed towards the development of metrosexual. Like the globalization, technological advancement, World War II, and many other events from the past.

**Implications:** Theoretically, this paper will add value to the body of knowledge. Practically, this will help the marketers to better understand this niche and emerging segment. This will help the to develop better marketing plan.

**Originality:** This paper is a little endeavor to present an argument that whether its Japanese anime or manga or Korean wave that has given an upsurge to the phenomena of Metrosexual.

**Keywords:** Metrosexual, Anime and manga, Korean wave, gender

### Introduction

The word metrosexual first coined in the book “Male Impersonators: Men Performing Masculinity” in 1994 by Mark Simpson but the term got the buzz in 2002 when the same journalist used the terminology in 2002 in salon.com. Shortly another article “Metrosexuals come out” published in New York Times (Tuncay, 2006). The trend has become more evident after the success of television show Queer Eye for the straight gay in 2002 and the presence of men on different plastic surgery makeover shows. In 2003, Michael Focker published a book “Metrosexual Guide to Style.” By 2004, the phenomena become very familiar with the billboard, magazines and movies start portraying the new man (Anderson, 2008). The image of metrosexual appears in magazines like FHM. Metrosexual is portrayed in the annual contest “Fifty Most Eligible

Bachelors” organized by Cleo’s. All participants judged by their appearance, their sense, and knowledge of fashion.

The emergence of “new man” has transformed the conventional notion of man to a soft man with appealing and pleasant appearance (Pan & Jamnia, 2015). The change in the attitude of men is due to the sociocultural pressure (Souiden & Diagne, 2009). Media has played a significant role in changing the views and perception of men’s about themselves and the way society sees them by portraying a model image through different mediums (McNeill & Firman, 2014).

The objective of this paper is to understand that how different events in the past had affected the traditional masculinity and given an upsurge to the sub-culture of metrosexual. The paper will discuss the origins of the metrosexual in the light of various events and their impacts. Almost all search engines are used to search relevant literature. The inclusion criteria of papers comprise of three essential points. The first is that the paper should explicitly talk about the emergence of the particular event leading to the impact of that event internationally and lastly how it is linked with phenomena of metrosexual.

#### **Metrosexual:**

Metrosexual is a combination of two words “Metropolis” and “sexual.” It used to describe the narcissistic and aesthetic oriented who love shopping and like to spend money and time on their appearance (Pan & Jamnia, 2015). Metrosexual men live in urban cities and consider themselves as virile people who challenge the traditional view of masculinity by demonstrating the new and trendy lifestyle. They spend a significant amount of money to enrich their self-image (Souiden & Diagne, 2009). Simpson has portrayed metrosexual as a young and handsome man, who lives or works in a metropolis as best shops are near (Oliveira & Leão, 2012). Metrosexual is any wealthy man, living in society, who lives a consumer's life and is obsessed with spending money on grooming (Parobková, 2009). Metrosexual is an urban male, who is heterosexual and is in touch with the feminine side and is so much concerned about his appearance (Tuncay, 2006).

#### **Present Day Metrosexual:**

Some of the characteristics highlighted in various research about metrosexual include that narcissism has become a survival strategy (Simpson, 2002), and metrosexual often associated with the attribute of sensitivity (Roedel & Lawson, 2006). The metrosexual man belief that caring for their body, skin and hair are not only for women (Oliveira & Leão, 2012). Metrosexual is one who is concern about his physical appearance through adopting the ways which were previously considered feminine (Yamakawa, 2014). In today’s modern life people demonstrate their Individuality, independence, value and one’s confidence through physical appearance (Pan & Jamnia, 2015). This century has created a link between the man to look good and smart with competency and high-income (Pan & Jamnia, 2015). Career oriented males are also concerned about their grooming due to their lifestyles (Souiden & Diagne, 2009). Metrosexual uses the cosmetics and grooming products, and the concern regarding the aging and youthful appearance is the primary motive (Souiden & Diagne, 2009) and at times to enhance their self-image and self-concept men spent money on cosmetics products (Iida, 2005). Metrosexual spends lots of money on their appearance; visits a spa; enjoy various services like facial and manicure (Caroline SueLin

TAN, 2008). Metrosexual is equipped with cultural sophistication taste; he is aware of the fashion and beauty trends and above all financially, he is very stable. To put it simple metrosexual is updated about the latest trends and fashion (Ahn, 2013).

### **Origins of Metrosexual**

The origin of metrosexual is divided into three parts. The first part is about the blurring role of gender in the society; the second part is about the spread of Korean media, and the third part is about Japanese anime and manga.

Events in the past have affected and influenced the society in many ways. One of the most prominent changes was of gender identity. Gender identity traditionally related to the set of characteristics men and women need to possess. They judge on two extreme ends. Society puts pressure on them to have those defined and stereotype characteristics to fall in the domain of gender identity. Men needed to be resilient, active, aggressive, and masculine and play the dominant role within the family. His core responsibility is to provide the financial support to the family. While women need to be pleasant, humble, sensitive, passive and weak. Their fundamental responsibility is to look the home, children and find out the ways to keep their husband happy. The various events have changed the traditional mindset that was once set as a standard to judge people on one dimension. The events had forced people to think that masculinity and femininity are the two different things. It needs to judge on different dimensions rather than considering them as one-dimensional. Each can possess both the qualities as it the dimensions of one's personality. The World War II has forced women to step out of their house to support their family financially as their men were in the war. This era has given birth to the concept of neo-liberalism.

The other event was the impact of Japanese anime and manga that has revolutionized the media as the concept of kawaii the cuteness has emerged from there. The Japanese manga demonstrated the image of the pretty boys, which was passing to Korea when the Korean government allowed the Japanese media to come in their country. From there Korean media has also started to portray the handsome man in their operas. That was the time when Korea was going through hard times. As it was a patriarchal society so that women lost their jobs due to downsizing that has hurt their sentiments, and they start looking for a man who can understand their emotions. Korea has realized the impact of internet business and for that; they allowed their media to spread across the globe, which has benefited their economy and the trend of KKonminam that is the flower boy become famous throughout the world.

A separate section will further elaborate each event. Each section will cover that how a particular event has laid a road for a man to show their feminine side openly and lead to the emergence of the new man that is Metrosexual.

### ***From the roots of gender identity to the blurring of gender Roles***

Sex is a biologic category while gender is social constructs (Poels, Dewitte, & Vyncke, 2005). People come into this world with the biological category it is the society which gives them the gender identity. From the day of birth, the child is put in an environment which is specific to its gender (Miller, Lurye, Zosuls, & Ruble, 2009). Socialization is a process through which people develop their personality by interacting with the world around them (Leaper & Friedman, 2007). Due to this socialization process men develop the masculine behavior, and women develop the

feminist behavior (Stets & Burke, 2000). Gender roles are learned behavior based on the norms, values and culture of the society (Stets & Burke, 2000). The media, religion and all other institute operating in the society construct the gender identity (Miller et al., 2009). Differentiation of gender is a universal phenomenon and society puts pressure on people to behave according to the responsibilities that are expected from them and set according to their gender. Society establishes the roles, responsibility, and expectations on the mental map of gender identity (Spence & Helmreich, 2014). Gender roles considered as the two opposing ends of one dimension. To fall in the category of gender identity, one needs to adopt either the masculine or feminine traits.

In various societies men are expected to play, a dominant role while the female is supposed to look at the house and children as their priority (Spence & Helmreich, 2014). With the passage of time women was unhappy with their condition (Friedan, 2010). That was also the era of technological revolution. It has changed the demands for many jobs. People with better technical and soft skills preferred over the physical ability (Spence & Helmreich, 2014). Society witness the high rates of divorce and lack of extended family had influenced the role of women (Spence & Helmreich, 2014). The feminist movement has involved the women in the political and educational field and at the same time, women have joint many professional fields with men (Abrams, 2012). All this has affected the traditional role of each gender (Bryson & Bunker, 2015). As gender identity is an amorphous concept (Johnson & Repta, 2012). Society has started to accept the androgynous identity. It has given people an option to explore both dimensions of their personality. Men have got a significant amount of time and money for personal grooming as the initial responsibility of provider is being shared in a family. And this new man is termed as metrosexual as he has a significant amount of time and money to spend on his grooming.

### ***Korean wave***

Metrosexual is a global phenomenon, which is confluent with the trend of kkonminam (flower men or pretty boy) in Korea (Ahn, 2013). Flower boys also referred as the “cream of the crop,” “pretty boys” “flower knight” or “metrosexual”. Flower boy defined as the good-looking men who are concerned with their looks. The trend has become famous when society has undergone some major changes (AmandaMarta, 2013). Transformation of media, beauty and entertainment industry in 1990’s has resulted in this syndrome in Korea (Ahn, 2013). The trend is known for the changing values and norms of aesthetics in Korea, which demands the pretty and soft masculinity from men (Ahn, 2013). This is the time when the world has seen the image of the pretty boy. The men who got inspired had adopted this lifestyle and are known a Metrosexual globally.

Korean was a country with Confucian values where men need to be a brave, active, wise, ruler, confident, energetic and a supplier of capital life for his family (Diniejko-Wąs, 2014). Before the 1990s, Korea was known as a patriarchal society and men seems like the head and provider to the family. He is defined a strong and dominant (AmandaMarta, 2013). The financial crisis of 1997 has drowned the entire country in depression and aroused the need for an economic reserve from International Monetary Fund (IMF). That was also the era of internet ventures. Once the Korean has understood the flow of investments and returns, they indulge themselves into the world. All these changes within the media, people, and culture, are centered to Hallyu that is Korean wave (Hae-Joang, 2005). The Korean wave is the term used to describe the phenomena of the 1990s when the Korean dramas, series, and films had become popular in Asian region (Lee, 2012). The

popularity and spread of Korean culture due to the media in Pacific Asia and Asian countries around the globe are termed as Korean wave. (Diniejkowas, 2014; Jung, 2009). Hallyu is referred as the spread of South Korean culture through entertainment industry (Diniejkowas, 2014; Jung, 2009).

During the financial crises of 1997, many women have lost their jobs due to downsizing, and this has created a frustration in women. They feel so disappointed that they started to look for men who can better understand the nature of female. As the women become conscious in selecting a man, it has created pressure on men to look good, soft and charming (AmandaMarta, 2013). The financial crises have influenced the society in many ways. The most evolutionary change was the development and acceptance of soft masculinity, similar to the western concept of masculinity (Diniejkowas, 2014) that is known as Metrosexual. After the development of the Republic of Korea in 1970, the country adopted a democratic constitute, which puts equality before the law (Diniejkowas, 2014). Korean artists have gained a lot of popularity, and the footprint of Korean wave is very evident in Asia (Louie, 2012). The Korean wave celebrities' transactional circulation, including boy bands and other stars, mediates the East Asia aesthesis for both male and female (Ahn, 2013). Lee Jun Ki, the famous character of South Korean operas "the King and the clown" has a prettier face than any women do. His looks had introduced a new trend of "feminine man" and become an icon of kotminam (flower boy). Before Lee Korean actor Bae Yong Jung, the lead character of series "winter sanataa" has captured the heart of many Japanese women with his soft, elegant and feminist appearance (Tam & Yip, 2010). Daniel Henney's growing popularity around the globe due to Korean media indicates that his soft and gentle look with a romantic and cosmopolitan appeal has inspired the mass audience (Ahn, 2013). KKonminam trend has become famous in the female of Korea and East Asian countries as they have become major consumers of dramas and other cultural product. The role of women has also improved politically and economically (Ahn, 2013).

Korean pop music has played a vital role in spreading the culture. The most popular music groups are Super Junior, Infinite, and Big Bang. All group members have some similar characteristics regarding their looks. They all are thin, beautiful looking men with sharp features and big eyes, delicate looks that resemble to be female. They all are well groomed, well maintained and pleasantly dressed with a slight essence of the effeminate type of beauty (Diniejkowas, 2014). The phenomena of metrosexual got more popularity when the Korean wave has hit the world, as it was easy for people to categorize themselves on new ground. The spread of K-Pop and various dramas from Korea's men has started to idealize them and adopted the lifestyle, which allows them to spend time and money on their appearance.

### ***Japanese Anime and Manga***

Japan also has super androgynous stars, and it is hard to conclude that which is the source (Jitab, 2011) of metrosexual. As Japan is well known for creating a culture of cuteness known as "Kawaii" culture demonstrated in anime and manga (Caroline SueLin TAN, 2008). The Japanese anime and manga are known for creating the culture of handsome and pretty boys as it were demonstrated through their series. The new man is the caring men of 1970s who had accepted the roles previously associated with females like child upbringing and housework (Christensen, 2014). Since 1970, the

image of pretty boys is popularized in Japanese manga (Louie, 2012). The female writers have begun to create a fantasy world by romancing the homosexual or homoerotic bonds between men (Louie, 2012). In the 1990s, the Japanese popular culture of anime and manga had become famous on an international scale and given birth to the subculture of visual-Kie (Visual type). Visual kie is about the movement of J-Rock, which focuses more on visuals than the music. Band members use cosmetics and wear cross-gender clothes (Hashimoto, 2007). The visual kie movement has become an era where man has started to use cosmetic products (Caroline SL Tan et al., 2008).

Another theory suggests that the trend of beautiful boys is because of Japanese manga as they use handsome male as a lead character (AmandaMarta, 2013). In the 1970s and 1980s, 'girle man' has also become famous in anime, manga, and different series. Girle men are defined as a handsome young man who does not follow the traditional attribute associated with masculinity (Louie, 2012). The origin and craze of beautiful boys can trace back in the mid-1990s with the Kimura Takuyu in series Long Vacation, and Love Generation have spread the feminine man to the world (Tam & Yip, 2010). People have a passion for anime and manga and for that; they prefer to follow their footsteps. The interest of man has developed in grooming products is because they are inspired by the lead characters portrayed in anime and manga. The use of cosmetics and spending money on grooming make them fall in the segment of metrosexual.

### **Conclusion**

The metrosexual is phenomena of 21st centuries, but its roots are found in history. It has emerged with the passage of time, and there are many other factors and events, which have equally contributed towards the development of Metrosexual. Like the globalization, technological advancement, World War II, and many other events from the past. All the events have affected the society in various ways, and one of the most prominent changes was the emergence of new man and its acceptance within the society as well. This soft masculinity is well accepted in various parts and appreciated at many occasions. These events in the past had affected the traditional notions of men's identity, and it has blurred the stereotype role and characteristics associated with each gender. Traditionally, society has developed a map of masculinity and femininity in which they judge people that how much they conform to the norms set by the society. The events had affected the life of women during the World War II. Women had come out of her home for work. She realized that she could take office responsibility as well. They do not want to accept the traditional role anymore. Women have realized her potential due to the crises; she decided to keep on working, as she was better able to manage her life. It has given men also a point of relaxation where they have more discretionary income and time and for that, they have moved to the arenas, which were previously associated with female only. The globalization has allowed the Japanese, and Korean media spread around the globe, which has given a concept of a male who spends on grooming and have the traits that were previously associated with females. This new man is labeled as Metrosexual (Tuncay, 2006). Hallyu becomes more famous due to the liberation of media, and rapid globalization. Which results in the use of cable television and access to the internet to masses. The price was also one of the factors as the Korean dramas were more economical than Japan and Hong Kong (Hae-Joang, 2005).

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# An Approach towards Safety Leadership Framework in Manufacturing Sector of Malaysia

**Muhammad Zeeshan Mirza\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: zeeshanmirza21@hotmail.com*

**Ahmad Shahrul Nizam B Isha**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: shahrul.nizam@petronas.com.my*

*\* Corresponding author*

## **Abstract**

**Purpose:** The purpose of this study is to explore and propose safety-prone leadership behaviors as a remedy for workplace safety.

**Design/methodology/approach:** This paper proposed a conceptual framework of safety leadership behaviors (safety-specific transformational and contingent reward leadership) specifically for manufacturing sector of Malaysia.

**Conclusion:** If safety related training provided to leaders/supervisors than it can solve the occupational safety problems for manufacturing sector of Malaysia.

**Practical implications:** The study will be mainly helpful for ensuring workplace safety in manufacturing sector of Malaysia suffering from serious occupational safety problems.

**Originality/value:** This study concentrates on safety-specific and contingent reward leadership styles to analyze the safety situation in Malaysia's manufacturing sector. Moreover the study also analyzed how passive leadership can create a serious safety hazard for organizations.

**Keywords:** Malaysia, occupational safety, safety-specific leadership, passive leadership.

## **Introduction**

Malaysia is one of the fastest growing economies of Asia (Ahmad, Kadir, and Shafie, 2011). Malaysia is aiming "to be in the top 10 economies on ease of doing business by 2020" (MIDA, 2015). This expansion of economy and ease for doing business policies means growth of currently operating business and many new ventures will also get started. The business cycle approach states that whenever there is economic growth with it the rate of injuries will also increase (Robinson and Shor, 1989).

The Malaysian Productivity Corporation (MPC, 2015), reports that, manufacturing sector recorded 6.2% of GDP growth in 2014-15 and is the second largest sector of Malaysian economy. But unfortunately, the sector's performance in maintaining occupational safety remains the worst among all the sectors. The Department of Occupational Safety and Health Malaysia (DOSH,

2015), reports 1724 accidents which includes disability and permanent disability, in the manufacturing sector for year 2015.

This indicates a serious occupational health and safety issue in the sector which needs to be rectified. The manufacturing sector of Malaysia always had poor levels of workplace safety standards (Kumar, Chelliah, Chelliah, Binti, and Amin, 2012). The injury rate in last five years (2011-2015) for manufacturing sector confirms this notion, as explained in Table. I. Malaysian Minister for Human Resource, Mr. Datuk Seri Richard Riot, believes that, in order to attract more foreign investment, Malaysian industry will have to reduce its accident and injuries rate. While Social Security Organization, believes that investing in safety leadership is the way forward for Malaysian economy (Report, 2014).

The role of management (leadership/supervisors) in shaping up employees perception about safety was identified long back (e.g. Cohen, 1977). However initially not much heed was given to how leaders can play an important role in ensuring a safer workplace (Myers and Facticeau, 1992). But the empirical evidence afterwards started to negate this belief, as researchers started to realize the importance of human interactions and how these interactions can have a positive impact on safety outcomes (Thompson, Hilton, and Witt, 1998). A recent meta-analysis on occupational safety by, (Pilbeam, Doherty, Davidson, and Denyer, 2016) reported that leadership plays the most important role in assuring workplace safety.

As the safety literature started to focus more on domain specific leadership styles, like safety-specific transformational leadership (Barling, Loughlin, and Kelloway, 2002). The current study follows the similar train and concentrates on safety-specific and contingent reward leadership styles to analyze, whether they can improve the safety situation in Malaysia's manufacturing sector. Furthermore the study will also discuss how passive leadership can create a serious safety hazard for followers. Many researchers have conjecture that passive leadership has detrimental effects on follower's safety. However it's a statement with minimal empirical proof (Mullen, Kelloway, and Teed, 2011).

Hence, there are three main objectives of this study; first, we propose that safety-prone leadership can monumentally improves the deteriorating safety situation of manufacturing sector of Malaysia. If leaders/supervisors are committed to ensure safety of the employees than it creates an overall culture within organizations that safety is a priority. Organizational policies and practices are best implemented through leadership and at the personal communication or supervisory level (Yukl, 2006). The safety literature also affirms that leadership plays a major role in ensuring safety at workplace (Clarke, 2013).

Second, the literature suggests that transformational leadership yields better results when incorporated with transactional leadership (Zwingmann et al., 2014). In countries where there is high power distance e.g. Malaysia (Hofstede, 2015), transactional style attain better results. Lastly, we will also explore the effects of passive style of leadership, something which is usually ignored in the safety literature (Kelloway, Mullen, and Francis, 2006).

**Literature Review*****Safety-specific Transformational Leadership***

Safety-specific transformational leadership (Barling et al., 2002), was the first domain-specific leadership construct entered into the realm of safety literature. Based on the Bass's (1985) conceptualization of transformational leadership. Safety-specific transformational leaders are believed to be more safety-specific and concerned about their followers safety (Barling et al., 2002). As leaders act as the role models, who devise policies and practically exhibit that, they mean what they are saying. So in that regard safety-specific transformational leadership were ought to have much better results in improving overall safety situation of the organizations. The growing body of literature on it verifies this statement (Clarke and Ward, 2006; Mullen et al., 2011).

Safety-specific transformational leaders enables an environment in which followers can raise their voice about safety concerns (Conchie, Taylor, and Donald, 2012). So it gives a sense of assurity to the employees as well that their safety is a priority for their leader. Mullen and Kelloway (2009) empirical established that general form of transformational leadership may be effective in improving organizational performance but might not be as affective when it comes to safety situation. They also reported that followers of safety-specific transformational leaders encountered less injuries, in comparison to followers of leaders exhibiting general transformational leadership behaviors.

TABLE I

Year	Injuries in manufacturing sector of Malaysia in last 5 years		
	Permanent disability	Non- permanent disability	Total
2015 (Oct)	76	1648	1724
2014	112	1510	1622
2013	128	1469	1597
2012	147	1535	1682
2011	133	1471	1604

Source: Department of Occupational Safety and Health Malaysia

***Contingent Reward Leadership***

The Contingent reward is explained as leadership style, when followers are given rewards when obligatory standards are met by them (Bass, 2000). In safety literature, contingent reward has been found to be strongly correlated with general transformational leadership (Zohar, 2002). In her extensive meta-analysis of the safety literature, Clarke (2013) noted that, contingent reward has regularly been used alongside transformational leadership to improve safety outcomes.

The safety literature suggests that contingent reward has been found to play an important role in ensuring workplace safety. Contingent reward leadership encourages and improves safety compliance and participation behavior (Parboteeah and Kapp, 2008). At the supervisory level,

contingent reward is more effective because the rewards or punishments are based on the premise that if standards are met or not. The growing body of safety literature on contingent reward affirm these statements (Zwingmann et al., 2014).

### ***Passive Leadership***

Although there is no specific explanation of passive leaders but the most relevant and inclusive definition for destructive style of leadership has been given by (Einarsen, Aasland, and Skogstad, 2007) "The systematic and repeated behavior by a leader, supervisor or manager that violates the legitimate interest of the organization by undermining and/or sabotaging the organization's goals, tasks, resources, and effectiveness and/or the motivation, well-being or job satisfaction of subordinates". The crux of their definition is that this style of leadership is harmful for both the followers and overall organization.

Constructive style of leadership has attracted more research than passive or destructive style of leadership (Tepper, 2000). A reason for this can be that organizations are always more interested in finding ways or leadership styles which can improve their production/profit. Passive style of leadership cost organizations in the form of lower level of performance (Howell and Avolio, 1993), and increased level of employees psychological distress (Skakon, Nielsen, Borg, and Guzman, 2010). So organizations should remain sensitive and make sure that passive leadership doesn't reign the workplace. Otherwise it can result in serious disasters (Mirza and Bashir, 2015). In safety literature, Kelloway et al. (2006) found out that, passive style of leadership decreases safety participation and compliance behaviors in followers and increases the injuries level at workplace. The passive leaders tend to wait unless some mishap happens and don't intervene in any situation. So which results in poor perceptions about safety climate in followers and ultimately results in higher number of injuries (Luria, 2010).

### ***Safety-prone and passive leadership relationship with safety outcomes***

Organizations understand the financial cost they had to pay because of the injuries suffered by their workers (Barling and Griffiths, 2003). So a number of policies and practices were introduced, empirically verified and are used to minimize injuries at workplace. Among them, high performance work practices (Zacharatos, Barling, and Iverson, 2005), ethical climate (Parboteeah and Kapp, 2008), are the few one's which play a positive role in reduction of injuries.

However it can't be argued that among them leadership holds the most important and well established position in ensuring safety at workplace (Pilbeam et al., 2016). The reason can be the direct effect leaders have on their followers. Employees remain in contact with their leaders, so when need for safety is stressed upon through leadership, it always yields positive results. The kind of awareness leaders can create because of person to person interaction is difficult to imitate for any other policy or practice (Hofmann and Morgeson, 2004).

The leader's behavior ultimately devise whether it will improve or deteriorate organizational safety environment. As leaders act as role models (Bass, 1985), and employees considered them as the 'organizational agents' (Eisenberger, Fasolo, and Davis-LaMastro, 1990). So any policies organizations have they are communicated and emphasized through their leadership. On the similar lines (Barling et al., 2002) presented their novel concept of safety-specific transformational

leadership. The leaders exhibiting safety-specific transformational behaviors emphasizes and motivates their followers to meet safety standards, rather than adopting an asserting behavior to ensure safety at workplace.

The extent literature suggests that, safety-specific transformational leadership have a positive effect on safety outcomes (Mullen et al., 2011), and decreases injury rate (Mullen and Kelloway, 2009). Accordingly contingent reward leadership has also been found to improve safety outcomes and reduces occupational injuries (Zohar, 2010). Particularly when aligned with transformational leadership (Zwingmann et al., 2014). On the contrary, passive style of leaders doesn't commune about the need for safety with their followers (Kelloway, Sivanathan, Francis, and Barling, 2005). Which negatively affects the safety outcomes and eventually results in higher number of injuries in their followers (Zohar, 2002).

### *Safety climate as a mediator*

Perceived organizational support [POS] theory is based on the premises that employees have certain expectations from their organization and form perceptions whether those expectations are fulfilled or not (Eisenberger, Huntington, Hutchison, and Sowa, 1986). These employees' expectations are met through organizational policies and practices, implemented by organizational leadership. In fact, it is perceived supervisory support [PSS] (Kottke and Sharafinski, 1988), which shapes up employees opinions about POS (Eisenberger, Stinglhamber, Vandenberghe, Sucharski, and Rhoades, 2002).

Zohar (1980) defines safety climate as "summary of molar perceptions that employees share about safety" (p. 96). The stress on "molar" perceptions exemplify the fact that its roots are in the physical actions, which can be seen by the employees of an organization. These safety climate perceptions are usually created through organizational policies and practices, which are carry forward by "organizational agents" i.e. leaders or supervisors (Eisenberger et al., 1990). Leadership has been identified as one of the basic and most important predictor of safety climate (Neal and Griffin, 2002).

The literature confirms that, safety climate mediates the relationship between safety-specific transformational leadership and safety outcomes, which eventually decreased injuries at workplace (Barling et al., 2002; Mullen and Kelloway, 2009). Similarly, safety climate was also found to mediate the contingent reward and safety outcomes relationship completely (Zohar, 2000). In contrast to this, passive leadership creates poor perceptions about the safety climate in the followers (Luria, 2010). The empirical evidence confirms that these negative perceptions about safety climate cause pessimistic affects on safety outcomes and results in higher number of injuries (Luria, 2008).

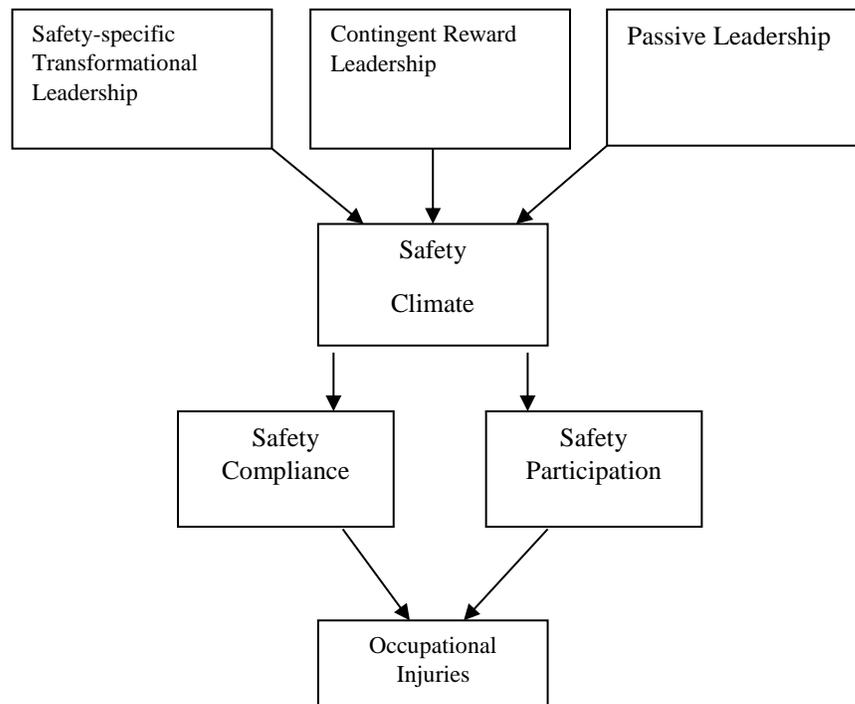


Figure 1: Safety Leadership Framework

### Conclusion and Recommendations

Ensuring occupational safety have always remained a concern for manufacturing sector of Malaysia (Kumar et al., 2012). Specifically for this reason, Occupational safety and health master plan (OSH-MP), was initiated in 2005 for next 15 years to ensure higher level of health and safety standards at workplace in Malaysian industry. This study aims to present a leadership based solution for this problem. Safety-specific transformational and contingent reward leadership will shape up positive opinions about safety climate. These positive perceptions about safety climate will encourage safety compliance and safety participation behaviors of employees, and will ultimately result in fewer number of occupational injuries. In comparison to that, we also intend to elucidate the ramifications of passive style of leadership. There is little empirical evidence of the theoretical notion that passive leadership has detrimental effects on followers safety (Kelloway et al., 2006).

The study will particularly be helpful for the manufacturing sector of Malaysia in ensuring a safer workplace and will make many practical contributions. For instance, organizations have to bear costs in the form of compensations etc due to workplace injuries (Neal and Griffin, 2006). Similar situation is faced by the manufacturing sector of Malaysia, which scores really high on accidents and injury rates. So if proposed leadership behaviors can improve the safety of employees, than it can reap financial benefits for the organizations (Clarke, 2010).

The two safety-prone leadership styles, one which regularly communicates and motivates the need for safety with minimal monitoring, i.e. safety-specific transformational leadership (Barling et al., 2002). The other is a reward based safety leadership style which constantly monitors the followers progress in meeting safety obligations, i.e. contingent reward leadership (Bass, 1985). Furthermore the damage caused by a passive leadership style will also be explored. The safety-specific leadership interventions, if found to be beneficial for an organization than regular safety related training can be given to the leaders/supervisors. These safety-specific leadership training is very cost effective for ensuring safety at workplace (Mullen et al., 2011).

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# Potential of Renewable Energy Technologies and its Implications for the Management of Low Carbon Lifestyles in Rural Malaysia

**\*Subarna Sivapalan**

*Department of Management and Humanities / Sustainable Resources Mission Oriented Research Group (SUREMOR)*

*Universiti Teknologi PETRONAS, Malaysia*

E-mail: subarna\_s@petronas.com.my / subarna24@gmail.com

**Stefan Haunschmid**

*University of Applied Sciences Upper Austria, Austria*

E-mail: stefanhaunschmid@gmil.com

**Mohamed Hasnain Isa**

*Department of Civil and Environmental Engineering / Sustainable Resources Mission Oriented Research Group (SUREMOR)*

*Universiti Teknologi PETRONAS, Malaysia*

E-mail: hasnain\_isa@petronas.com.my

\*Corresponding Author

## **Abstract**

**Purpose:** This paper discusses the findings of a survey run in three rural villages in the state of Perak, to ascertain the perceptions of the rural community on the potential of renewable energy technologies, more specifically photovoltaic (PV) technology, to advance low carbon lifestyles within the Malaysian rural setting.

**Design/methodology/approach:** The study employed a case study approach. Data was collected via quantitative means, namely through a survey.

**Findings:** The findings of the study suggest that although there is a lack of understanding and trust amongst Malaysian rural community members on the nature, use and potential of renewable technologies, appropriate governmental intervention and management of information pertaining to the dissemination of information on the benefits of the use of renewable technology will spur the usage of green technology within the Malaysian rural context.

**Research limitations/implications:** The findings of this study would be able to provide administrators and policy makers with vital clues as to some of the key issues that need to be focused upon to better manage low carbon lifestyles within the Malaysian rural context.

**Originality/value:** Malaysia has pledged to reduce the nation's emission intensity by up to 40% by the year 2020. While there have been studies that acknowledge the need to take heed of the increase of emissions brought by development within the rural context, there has not been much

research conducted to explore the potential of renewable energy, specifically PV technology within the rural Malaysian context.

**Keywords:** Photovoltaic Technology, Socio-Economic Perspectives of Renewable Energy in Malaysia, Management of Low Carbon Initiatives, Rural Development in Malaysia; Perak Rural Household Energy Consumption Profile

### **Introduction**

In the years that have passed, Malaysia has experienced rapid growth in terms of urbanization. Olatunji et al (2014) note that carbon emissions in Malaysia grew from 14601.99 (kt) in 1970 to 198348.03 (kt) in 2009. Subsequently, in a statistical report by the Earth Policy Institute, Malaysia was ranked the 27th most polluted country in the world, following a carbon emission of 54 million tons in 2012. The report also showed that there was an average emission growth rate of 13% in five years (Olatunji et al, 2014). What is more alarming is that projections by the Ministry of Energy, Green Technology and Water indicate that universal principal energy consumption is projected to increase by 45% in total, in the next 21 years (Ministry of Energy, Green Technology and Water, 2011). Electricity demand is predicted to range 18,947 megawatts in 2020 and 23,092 megawatts in 2030 (Ministry of Energy, Green Technology and Water, 2011). These projections indicate that there will be huge proportions of carbon emission by 2030 which will heavily pollute the air and cause health issues as well as contribute significantly to global warming.

Wary of the enormity of the problem, the Malaysian Government has implemented projects and programs to contain and reduce the emission of GHG in the country. Significant policies that have been implemented to this end are the National Green Technology Policy and the National Policy on Climate Change developed on the 24th of July 2009 (Sivapalan, 2016, p.266). These policies are in response to the Prime Minister's pledge of reducing the nation's emission intensity by up to 40% by the year 2020 at the 2009 Copenhagen 15th United Nations Framework Convention on Climate Change (COP15) meet (Sivapalan, 2016, p.266, Ministry of Energy, Green Technology and Water, 2011). Developed in line with the National Green Technology Policy, Malaysia's Low Carbon Cities Framework and Assessment system (LCCF) has been cited as one of the first framework and assessment systems developed in the region to address reduction of emission, note KeTTHA (Ministry of Energy, Green Technology and Water, 2011). It addresses the Prime Minister's COP 15 promise, and focuses on the government's vision of seeing Putrajaya and Cyberjaya become pioneering green townships in Malaysia (Ministry of Energy, Green Technology and Water, 2011). This framework and assessment system, which is targeted towards urban cities, townships and neighbourhoods, given that cities have been deemed to be more active emitters, also focuses upon four elements (Ministry of Energy, Green Technology and Water, 2011). These are urban environment, urban transport, urban infrastructure and buildings (Ministry of Energy, Green Technology and Water, 2011). Target users of the framework include local authorities, planners and developers, state KeTTHA further (Ministry of Energy, Green Technology and Water, 2011). Figure 1 shows the LCCF in Relation to National Policies and Rating Tools.

While the framework mentions the need for local authorities, planners and developers to include the local community in emission reduction policy and strategy development, it does not clearly outline the criteria, guidelines and measures on how the local community i.e. the end users (civil society), should be engaged and identified for the successful implementation of these policies and strategies. This indicates the depth of interventions to be conducted in terms of the engagement of local communities in the implementation of low carbon initiatives, specifically within communities in rural contexts. This is the limitation this study aims to address.

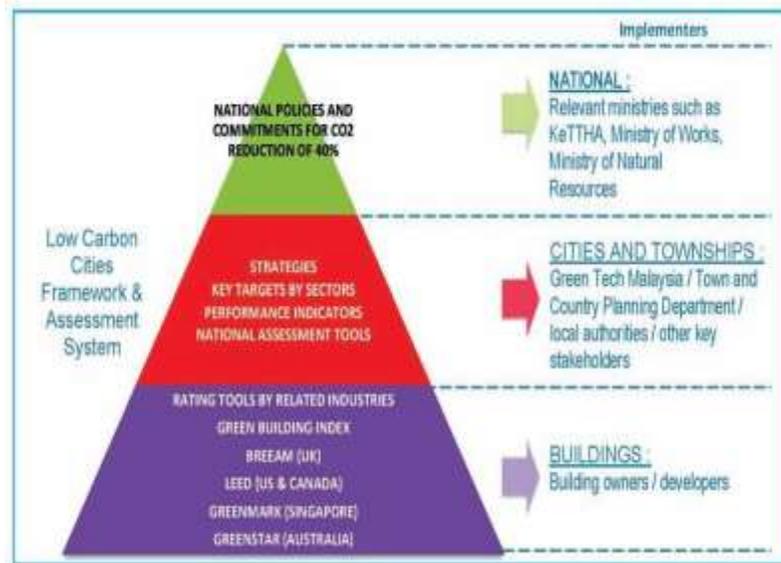


Figure 1: LCCF Source: KeTTHA

### Renewables for Rural Malaysia: A review

Malaysia, at the Copenhagen 15th United Nations Framework Convention on Climate Change (COP15) meet, pledged to reduce the nation’s emission intensity by up to 40% by the year 2020 (Sivapalan, 2016, p.266). In July 2009, the National Green Technology Policy National Policy on Climate Change was developed in response to this pledge (Sivapalan, 2016, p.266). Malaysia’s National Green Technology Policy, ‘serves as the basis for all Malaysians to enjoy an improved quality of life, by ensuring that the objectives of our national development policies will continue to be balanced with environmental considerations’ (The Star, 2010).

Accentuating the need for sustainability further is the incorporation of green technology elements in projects under the 10<sup>th</sup> Malaysia Plan (Sivapalan, 2016, p.266). As reported in *The Star*, the Works Ministry has set a target of 40% for green technology derived projects and is open to new technology in the engineering and construction sectors to further develop greening efforts (Sivapalan 2016, p.266, The Star, 2011). The importance of sustainable development for Malaysia was further emphasized when the Prime Minister affirmed that the nation’s human capital plays an eminent role in championing the need for a sustainability driven nation (Sivapalan, 2016, p.266). During his address at the Commonwealth Business Council in December 2009, Prime

Minister YAB Dato' Sri Haji Mohd Najib bin Tun Haji Abdul Razak explained the importance for Malaysia to nurture sustainability competent human capital if the nation was to resolve its sustainability challenges (Sivapalan, 2016, p.266).

While the Low Carbon Cities Framework and Assessment system is focused on technological developments taking place within a city and urban set-up, low carbon initiatives should not solely be urban and city centric. This is because emission is not only produced by urban dweller, but also by rural communities. Research conducted by University of California's Centre for Occupational and Environmental Health (Centre for Occupational and Environmental Health, 2006) indicates that emission from rural settlements are often overlooked, and should not be, more so in developing countries. This is because most rural households still use solid fuels, namely coal and biomass for cooking and heating. These sources produce emission and have adverse health impacts. Similar findings were found in China's rural areas, where it was found that rural areas have become more polluted than cities, while pollution from agricultural waste has contributed to more than half of the country's emission rates (Li Jing, 2011).

Within the Malaysian context on the other hand, while there have been studies that acknowledge the need to take heed of the increase of emissions brought by development within the rural context, i.e. Ibrahim Ngah (2010) and Ibrahim Ngah et al, (2010), there has not been much research conducted to explore the potential of renewable energy, specifically PV technology within the rural Malaysian context. This paper focuses on the findings of a survey carried out in three rural villages in the state of Perak, to ascertain the perceptions of the rural community on the potential of renewable energy technologies to advance low carbon lifestyles within a rural setting. More specifically, the study focuses on the perspectives of the three communities on the potential of photovoltaic technology to advance sustainable lifestyles within the Malaysian rural set up.

### **Theoretical Orientation**

A community is made up of cluster of interrelating individuals who share similar situations, beliefs and means (Jiang et al, 2013). Current research indicates that governments have attempted to devise ways and means to encourage engagement with the public. However, governments should also look beyond dialogue and short-term goals and look into the long-term benefits of community action in order to achieve emission targets. As this state of long term engagement centers around cognitive, affective and behavioral aspects, it is only practical to look at some behavior theories, namely the social learning theory. The Social Learning Theory centers on modes in which behaviour is influenced through the observation of a variety of social models. Peters et al (2010) state that behavioral modeling is key to the formation and upkeep of social standards. This results in consequences for the positioning of community initiatives (Peters et al, 2010). This is because of the implication that one's behaviour has the ability to profoundly affect another's actions (Peters et al, 2010). The present study is thus informed by the Social Learning Theory, and forms the basis of the discussion of the findings of the survey.

### **Methodology**

As highlighted in previous sections in this paper, the present study was conducted to explore the perspectives of the Malaysian rural community of the nature, use and potential of photovoltaic

technology within the rural context, using a case study approach. A case study is a form of empirical investigation which seeks to explore a phenomenon in its actual setting (Yin, 2003). A case study can also be defined as an in-depth and thorough examination of a single case (Bryman, 2001). Case studies can be conducted on individuals, communities, schools and even organization. The study can be conducted as a single case study, i.e. on a particular person or community, a particular school or a particular organization (Bryman, 2011). It can also be conducted as a multiple case study, i.e. on a certain number of individuals, schools or organizations. The present study was run in three village communities located within the Perak Tengah region.

Data was collected via quantitative means, namely through a survey. According to Fraenkel and Wallen (2000), survey research is frequently used in educational research. The survey is particularly useful in engaging the opinions of a group of individuals of a certain issue. The survey used in the present study was a directly administered questionnaire. The direct administration method was found to be most suitable, given the fact that it enabled a high response rate, did not cost much, was quicker to administer and presented me with the opportunity to explain and clarify any doubts the respondents had, prior to answering the questions posed in the questionnaire.

Participation was voluntary and respondents could withdraw their participation at any point of the study. Prior to data collection, the researchers conducted a buy-in session with members of the village committee to explain (a) the aims of the research, (b) the duration participants would have to invest to take part in the survey, and (c) the benefits of the study to the participants and their communities. Upon their agreement, assistance was then sought from these village committee members to disseminate information of the survey. 90 respondents volunteered to participate in the survey as a result of this dissemination of information.

Data was collected via an 18-item survey with assistance from enumerators identified by the research team. This was because not all participants were literate. Data was collected over the period of November 2015. All 90 surveys were completed and returned to the researchers, denoting a 100% response rate. The survey consisted of questions related to participant's understanding and use of photovoltaic technology, as well as their perceived needs of the necessity for photovoltaic technology within a rural setting. The list of questions posed in the survey is listed below: a) Gender, b) Name of village, c) Age, d) Level of education, e) Profession, f) Average monthly income of household, g) Number of occupants within household, h) Access to electricity, i) Knowledge of photovoltaic systems, j) Ownership of photovoltaic systems, k) Interest to own a photovoltaic system, l) Reason for disinterest to own a photovoltaic system, m) Eagerness to install government subsidized a photovoltaic systems, n) Types of electrical appliances used within the household, o) Ownership of any other type of electricity generation technology, p) Average monthly electricity bill, q) Personal opinion of photovoltaic technology.

## **Results**

The results are put forth in two sub-sections, namely the background information and respondents' perspectives of the nature, use and potential of photovoltaic technology within the rural context.

**a) Background information**

The study consisted of 90 respondents, of which 47 (52.2%) were female and 43 (47.8%) were male. The total number of participants by village is as follows: Village 1: 31 respondents (34.4%), Village 2: 29 respondents (32.2%) and Village 3: 30 respondents (33.3%). Respondent's age groups are as presented in Table 1. As seen in the table, respondents consisted of those from the age of 16 and above. Respondents between the ages of 26 – 45 made the most number of respondents of the study, amounting to 40% of the total number of respondents of the study. Respondents' level of education was also sought. The breakdown of respondents' educational background is as illustrated in Table 2.

**TABLE 1: RESPONDENT'S AGE GROUP**

<b>Age Group</b>	<b>Total</b>	<b>Percentage (%)</b>
16 - 25	17	18.9
26 - 35	20	22.2
36 - 45	20	22.2
46 - 55	18	20.0
56 - 65	14	15.6
66 or older	1	1.1

**TABLE 2: EDUCATIONAL LEVEL**

<b>Level</b>	<b>Total</b>	<b>Percentage (%)</b>
No school completed	0	0
Primary School	9	10
Secondary School	77	85.6
Higher Education	4	4.4
Prefer not to answer	0	0

As seen in Table 2, the majority of participants (85.6%) had completed Secondary education. Others had either completed primary education (10%) or higher education (4%).

TABLE 3: TYPE OF PROFESSION

Type	Total	Percentage (%)
Employed for wages	10	11.1
Self-employed	45	50
Out of work	24	26.7
Student	8	8.9
Military	0	0
Retired	1	1.1
Out of Work	2	2.2
Prefer not to answer	0	0

TABLE 4: AVERAGE MONTHLY INCOME

Amount in RM	Total	Percentage (%)
Under 100	1	1.1
100 - 199	0	0
200 - 499	31	34.4
500 - 999	27	30
1000 - 1999	6	6.7
2000 - 2999	5	5.6
3000 - 3999	0	0
4000 - 4999	1	1.1
5000 - 5999	0	0
More than 6000	0	0
Prefer not to answer	19	21.1

In terms of profession, the majority of the respondents were self-employed or unemployed. This amounted to 50% and 26.7% of the total respondents who answered the survey respectively. 10 other respondents were employed for wages, while 1 was retired. As seen in Table 3, the survey also recorded responses from students, who made up 8.9% of the total respondents of the survey. Table 4 presents the average monthly household income of the respondents. As seen in the table, close to 65% of the respondents surveyed fall within the average monthly income category of between RM 200 and RM 999. Interestingly though, over 21% of the respondents had also not preferred to divulge their average monthly income. As for the number of people per household, the results of the survey indicate that the majority of households have 4 members in total, amounting to 23.3% of the total respondents. This is followed by 3, 5, 2, more than 6 members and 6 members respectively, amounting to 22.2%, 22.2%, 12.2%, 12.2% and 6.7% each.

***b) Energy consumption profile and potential of photovoltaic technology within the rural context***

The second section of the survey sought to gauge respondent's perspectives on the nature, use and potential of photovoltaic technology within their household. Respondents were asked of the nature of their access to the electricity. All respondents (100%) replied that their houses were connected to the national electrical supply provided by the National Electricity Board, (TNB). On their knowledge of what a photovoltaic system entails, the results of the survey indicate that only 30% of the respondents (23 respondents) were aware of what a photovoltaic system is. In terms of ownership of a photovoltaic system, all respondents (100%) responded that they were not in possession of the system. Interestingly though, 86.7% indicated wanting to own a photovoltaic system, especially if it could be used to decrease the amount they had to pay for their use of electricity every month.

Respondents who answered “no” to if they would like to own a photovoltaic system were further queried as to the reason they did not want to own the system. The range of responses received is as presented in Table 5 below.

TABLE 5: REASONS FOR NOT WANTING TO OWN A PV SYSTEM

Reason	Total	Percentage (%)
No knowledge of what a PV system is	7	43.8
Not interested in owning a PV system	4	25
Needs more information on the system before deciding to purchase it	4	25
Does not trust the technology	2	12.5
Other reasons	1	6.3

There was a range of responses for respondents not wanting to own a PV system. The majority of respondents, i.e. 43.8% noted that they did not want to own the system because they had no knowledge of what a PV system entails. 25% of respondents respectively noted that they were either not interested to own the system or needed more details of the system before they purchased it. Interestingly also, 12.5% of the respondents do not trust the technology. Respondents were also asked of their personal reflections on energy and renewable technologies. Responses are illustrated in Table 6.

TABLE 6: PERSONAL REFLECTIONS ON ENERGY AND RENEWABLE TECHNOLOGIES

Reason	Percentage (%)
I can produce my own electricity	10.2
I help to reduce the pollution of the environment	11.4
PV reduces my monthly energy bill	71.6
The costs for this investment are too high	8
It is not producing electricity during the night	1.1

Besides the 7.8% of the respondents who owned diesel generators, 92.2% of them noted that they do not own any other type of electricity generating device. The majority of the respondents paid between RM 100 to RM 200 on their monthly electricity bills. As such, 95.6% of the respondents indicated they would contemplate installing a photovoltaic system, if they were to receive governmental aid to do so.

### Implications of Survey Findings for the Management of Low Carbon Lifestyles in Rural Malaysia

The results of the survey reveal several key findings. Firstly, as seen from the key findings of the case study of these three villages in Perak, there is an indication to better manage information flow, given the fact that there is still little awareness amongst members of the communities within the rural context on the need, use and the potential of investing in renewable technology. This could

be a result of the lack of stakeholder targeted information pertaining to the dissemination of information on the benefits of renewable technologies to communities outside cities and urban areas. Given this lack of stakeholder specific targeted information, there lies a risk of not being able to fully engage with communities within the rural context to drive low carbon and renewable energy initiatives in these areas.

Another key finding of the study that must be highlighted at this juncture is the lack of trust communities within rural contexts have on the use of renewable technology within their households. As the results of the survey show, although communities that live out of the city and urban areas seem to have a lack of trust towards renewable technologies and find it expensive, they do nevertheless agree that it can contribute towards managing their energy consumption patterns. This is an important finding, as it provides vital clues for the development of more sustainable and economically viable intervention efforts by the government and private sectors, as well as NGOs, to develop renewable technology initiatives to uplift the low carbon profile of the nation. More specifically however, there is an urgency to identify ways to better manage the advancement of the government's low carbon policies for communities within a rural set up, so that these communities trust and are better informed and trained of the benefits of renewable technology to their individual households and their community at large. To enable more sustainable management of renewable technologies within the rural context, programmes targeted towards the management of individual and community behaviours and attitudes towards low carbon living are recommended. The development of more strategic government-community partnerships that enable and reward bottom-up low carbon initiatives is also pertinent.

### **Conclusion**

To conclude, this paper discussed a study conducted to gauge the perceptions of the rural community on the potential of renewable energy technologies to advance low carbon lifestyles within a rural setting. As suggested through this study, there is a strong need to better manage the development of low carbon conscious rural communities in Malaysia. It is thus hoped that the findings of this study would be able to provide administrators and policy makers with vital clues as to some of the key issues that need to be focused upon to better manage low carbon lifestyles within the Malaysian rural context.

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# Challenges in Designing an Innovative Environmental Policy: A Case for Germany Environmental Governance

**Azhan Hasan\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Ph.D. Fellow, Environmental Policy Research Centre (FFU), Freie Universität Berlin;  
Email: azhan\_hasan@petronas.com.my*

**Zullina H. Shaari**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: zullina\_shaari@petronas.com.my*

*\*Corresponding author*

## **Abstract:**

**Purpose** - This research examined the issues in designing innovative environmental policy to enhance the Germany ability to strengthen and achieve a high environmental governance standard.

**Design/methodology/approach** - The research starts with highlighting the inter-relationship between two frameworks: environmental innovation and socio-economic-cultural system and continues with a review of related information sources (i.e. library, policy reports/papers and an expert's presentation) since the 1991 up to 2013.

**Finding** - Based on the two frameworks, two elements have been identified in designing an innovative environmental policy: the institutions, and the instruments.

**Originality/value** - The review revealed some issues related to these elements that policy makers should consider in designing and implementing the innovative environmental policy for Germany.

**Keyword:** Environmental Technologies; Eco-Innovation; Environmental Regulations; Environmental Politics in Germany

**Paper type:** Research Paper

## **Introduction**

Economic activity and human have a critical impact on the natural environment. Increasing strain on natural resources and the ecological balance, in general, is resulted due to the tension between the progressive spread of the industrial revolution, steady increase in world population and the need for the economic growth. The viability and sustainability of predominant production and consumption patterns are in the conflicts that need to be addressed urgently by the global community to tackle the problems of global warming, the loss of biodiversity and the shortages of

drinking water. The objective of the environmental policy is to protect the natural environment. The protection of the natural environment can be done by fostering the far-reaching changes both in individual behavior and consumption patterns, as well as the characteristics of products and underlying industrial processes and resource use. These changes have to be achieved simultaneously by taking account of the social and political imperatives of economic growth and prosperity. European Commission-Directorate General (DG) Environment in their final report titled 'Designing environmental policy to be innovation-friendly' mentioned that developing countries, such as China and India, will be rapidly catching up in the foreseeable future with decrease consumption and resource usage substantially. The challenge of environmental policy is thus to provide viable and creative responses to one of the fundamental dilemmas that humanity faces today. The dilemma of "meeting the needs of the present without compromising the ability of future generations to respond to their needs" (Tresselt, 2007).

Innovation is about technological change, where such change is broadly conceived as any change in nature, process or organization of production. The concept of change entails more than simple adjustments in the output to relative prices. Innovation always means a positive change that results in economic improvement as recorded in many economics literatures. Similarly, in respect of the environment, environmental change means changes that benefit the environment in some way. The intersection between economic and ecological innovation can be referred as an 'eco-innovation' or as sub-class of innovation. This term is created by the ECODRIVE project (Huppe et al. 2008). Alternatively, 'eco-innovation can be interpreted as a change in economic activities that will improve both the economic performance and the environmental performance of society'. In other words, whether or not eco-innovation has been taking place can only be judged by improved economic and environmental performance (OECD 2010).

Rennings in his book 'Redefining Innovation – Eco-Innovation Research and the Contribution from Ecological Economics' elaborates the environmental innovations as innovations that consist of new or modified processes, practices, systems and products which benefit the environment and contribute to environmental sustainability (Rennings, 2000). The environmental impact on innovation can be assessed by using several criteria such as greenhouse gasses emissions, air pollution, energy consumption, water pollution, noise, waste generation and soil contamination. Environmental innovations have driven by a set of determinants which respective influence 's hard to evaluate as shown in Figure 1 although it is can be linked to the determining role of regulation. Alternatively, the Dynamics of Institutions and Markets in Europe (DIME) Network in their 'Measuring Eco-Innovation' report described environmental innovations as "the production, assimilation or exploitation of a product, production process, service or management or business methods that is novel to the organization (developing or adopting it) and which results, throughout its life cycle, in a reduction of environmental risk, pollution and other negative impacts of resources use (including energy utilization) compared to relevant alternatives" (MEI Report, 2008).

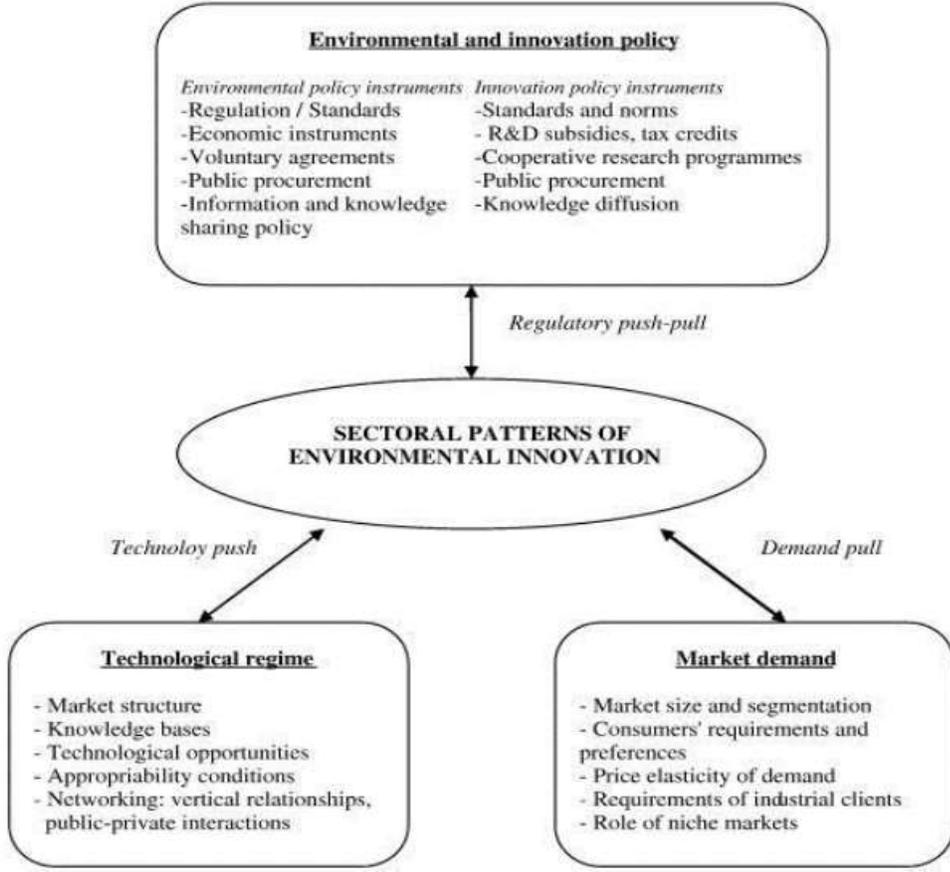


Figure 1: Determinants of Environmental Innovation (MEI Report, 2008)

Freeman and Louça (2001) elaborated the interests and drivers on co-evolution of environmental policy that pushes technical change along from the socio-economic perspective: entrepreneurs (and profits), consumers (and preferences), and public policy pressures. Figure 2 illustrates the economic activity which is driven by institutions, the framework of laws, norms and habitual practices about environmental and eco-innovation. The outcomes of these relations are economic and ecological performance. Economic activity will determine how markets and other economic structures (e.g. public sector, households/families as sources of production) (Freeman and Louça, 2001).

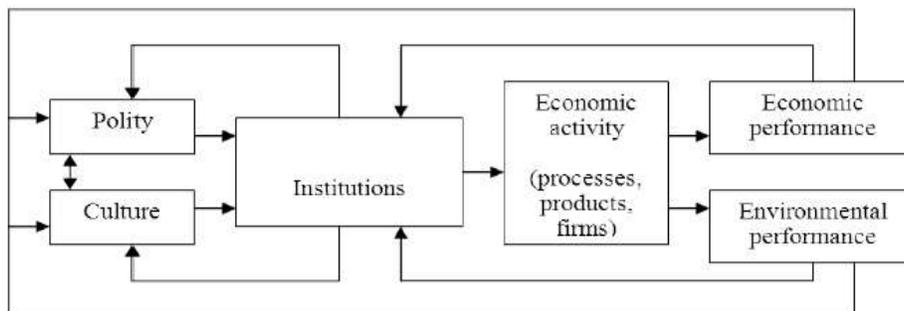


Figure 2: The Socio-Economic-Cultural System in Dynamic Evolution

These two frameworks suggest that an innovative environmental policy may be affected by institutions and instruments. However, a very limited research has been conducted to link these two elements and relatively little subsequent advancement in theorizing the impact of innovative environmental policy on environmental and economic performance. To date, studies that investigate the innovative approach in designing environmental policy for Germany are scarce. To address this gap, this paper examined the challenges in designing innovative environmental policy, the determinants for environmental innovation, and the various innovative policy adapted by the Germany government. The challenges are presented as issues related to institutions and instruments.

**Method**

To achieve the stated research objectives, the researchers reviewed 30 related information sources since 1991 up to 2013. The review represents content analyses of the Germany environmental policy reports/papers, a presentation by a Germany environmental expert and a number of library resources i.e. books and journal articles. The resources included in the research are summarized in Table 2.

Table 2: Sources

No	Type of Sources	Total
1	Books	14
2	Journal Articles	9
3	Reports/Working Papers	6
4	Presentation	1

**Results and Discussions**

The review suggests thirteen institution-related issues and ten instrument-related issues as summarized in Table 2.

**Table 2: Institutional and Instrumental Issues**

<b>Institutional (20 sources)</b>	<b>Instrumental (10 sources)</b>
1. Innovation categorization: social and organizational (Freeman, 1992; Rennings, 1998)	1. Environmental patents (Lanjouw and Mody, 1996)
2. Constitution predetermine the legislative and executive involvement (Janicke et al. , 1997)	2. Regulatory (Kemp, 1997)
3. Spontaneous, evolutionary processes or intentional design (Lichbach 1997; Thelen 1999)	3. Soft regulatory such as environmental liability, eco-audits, voluntary commitments and eco-labels (Cleff and Rennings, 1999b)
4. Legitimacy and competence tensions and meaningful trade-offs (Rose-Ackerman, 1999)	4. Beyond ‘standard’ environmental policy instruments (Anderson et al. , 2001)
5. Technical centers and compatible regulations/standards (Aggeri, 1999)	5. In Sweden: ‘product choice law’; substitution In Denmark: policy approach in occupational health and safety legislation; In Germany: substitution principle through German Ordinance on Dangerous Substance (Lofstedt, 2003)
6. Innovating firms involvement (Cleff and Rennings, 1999a)	6. Information-based (Jordan et al, 2003)
7. The difficulty level of environmental problems (Rittberger and Zum , 1991; Young, 1999; Miles et al, 2001)	7. Voluntary or negotiated (ten Brink, 2002; Elkins et al., 2006)
8. Technology for short-term and long-term solutions (Olson and Kemp, 1994; Green and Miles, 1996, Jamison, 2001)	8. Market-based or economic (EEA, 2006)
9. ‘Tragedy of the Commons’ type problems (Mitchell and Keilbach 2001)	9. Knowledge- and environment-related failures such as research subsidies and carbon taxation (Dutz, 2012)
10. Technology beyond short-term solutions (Sanden and Azar, 2005)	
11. Disruptive approach in accessing the environmental technology (Dosi, 1998; Horden, 2008)	
12. Courts provide additional checks and balances on the executive (Goeschl, 2008)	
13. Institutional interplay varying between political, administrative, legal, economic, social, and ideological factors (Ministry of the Environment, 2013)	

**Institution-related Issues:**

Contemporary theories of institutional origin see institutions as consequences either of spontaneous, evolutionary processes or intentional design. While some variants exist within each of these groups (see e.g. Lichbach 1997; Thelen 1999). The successful environmental policy is the product of a multi-staged process which is captured in the ‘environmental policy cycle’ (Jänicke et al. 1997). In Germany, the constitution pre-determines the relative involvement of legislative and executive in various stages of the cycle. In contrast such as the US, the set of possible configurations of engagement is considerably larger. Countries also differ in the way the judiciary interacts with the policy cycle. In some countries, courts are simply an additional enforcement

device in the implementation stage of environmental policy or protect individual citizens from unconstitutional policies. Meanwhile, in others, courts provide additional checks and balances on the executive before policy implementation (Goeschl, 2008).

Susan Rose-Ackerman in her influential comparative study of environmental policy-making in Germany and the US mentioned out the central tension in environmental policy between legitimacy and competence and the need for environmental institutions to provide meaningful trade-offs between these objectives. For example, Germany, at present, has a wide array of institutions in place to make a capacity for environmental protection enabled. Germany also quickly established key institutions in respect of a national strategy to promote a sustainable development such as a federal environmental agency and a national environmental report in a first wave in the mid-1970s and the remaining institutions such as Ministry of the Environment in a second policy wave in the mid-1980s. Since 1994, protection of the environment is covered in the constitution, thus providing the concept the required salience across all levels of government and all agencies. In that way, we can say that Germany has an attempt to fulfill the basic institutional conditions for providing environmental capacity (Rose-Ackerman, 1995). They become necessary when the range of possible technical options is too complicated or when those involved hold significantly conflicting viewpoints and cannot reach agreement on joint coordination as for institutional measures to improve coordination, such as the setting up of technical centers and the introduction of regulations or standards for compatibility (Aggeri, 1999).

A National Council for Sustainable Development was set up in 2000 as a means to implement a sustainability strategy. Its input was then used to develop a national sustainability strategy for Germany that the government adopted in 2002, but which has not been adopted by the legislative. There is four pillars to the sustainability strategy titled "Perspectives for Germany", namely "Intergenerational Equity", "Quality of Life", "Social cohesion", and "International Responsibility". It is evident that environmental objectives are on the indirectly part of this strategy, but they form a key component of the management strategy implicit in the overall program. This management strategy provides management rules, specific objectives and indicators, and monitoring requirements. There are 28 indicators to be reported to the general public on a regular basis, of which environmental indicators make up 12 of it (Weidner, 1995).

Against this constitutional background, Germany has chosen a split approach to the spatial organization of environmental policy. The effects of environmental policy in Germany are the result of an institutional interplay varying between political, administrative, legal, economic, social, and ideological factors. These structures shaping the mode of policy-making and implementation, such as the policy style in the environmental policy area. The following overview provides information on the most important aspects of legal and informal establishment of institutions and bodies. It is designed to streamline the environmental policy in Germany and fulfill the general goals of achieving a large extent of "homogeneity of the living conditions throughout Germany". Additionally, the German constitution requires the practice of the "cooperative federalism" principles in the decision-making of the environmental policy. The following institutions and bodies are in charge of designing and coordinating environmental policy at the central level of government:

- Ministry of the Environment (overall charge);

- Cabinet Committee for Environmental Issues (Kabinettsausschuss für Umweltfragen) which is formally chaired by the Federal Chancellor;
- The Standing Committee of the Heads of Divisions for Environmental Questions (Ständiger Abteilungsleiterausschuss für Umweltfragen), headed by the permanent secretary in the Ministry of the Environment;
- Parliamentary Committee for the Environment, Nature Protection and Nuclear Safety (members of the Bundestag representing the various political parties);
- General advisory commissions comprise the Council of Environmental Advisors, Association of German Engineers (VDI), German Association of Gas and Water Management Experts (OVGW), Waste Water Technology Union (ATV), German Standards Institute (DIN) and Technical Control Association (TÜV) (German's Federal Ministry for the Environment, Nature Protection and Nuclear Safety Report, 2008).

Germany, as a leader in environmental governance regarding research and development (RandD) leadership and budget allocations spent on environmental-related activities. Flows of dedicated funds are probably the most influential channel of policy coordination that is available to the federal government. Integration and implementation assured through a system in which many ministries have dedicated budget lines for environmental programs, providing the federal government financial leverage over policies with an environmental dimension.

In Germany, inventing or adapting environmentally desirable processes or products is already part of everyday life for a vast majority of firms and, thus, a field of scientific research. As Cleff and Rennings (1999a) have proven empirically in a German industry survey, almost 80 percent of all innovating firms are involved in environmental-friendly innovation projects. It is hard to find even a small or medium-sized enterprise that has no experience at all with substituting hazardous substances, designing and using eco-efficient products, saving energy, waste, and material or reducing emissions. So, as a result, managing eco-innovation is an increasingly important issue for many firms in Germany.

Besides Germany's efforts, the attempt of international environmental institutions to solve a range of environmental problems that do not all face the same characteristics. The findings that have been empirically studied by Rittberger and Zürn (1991), Young (1999a) and Miles et al. (2001) has suggested that problems which vary in several important ways might influence the level of difficulty they can solve. Consequently, environmental challenges involving coordination setbacks have least concerns on non-compliance matters than those involving collaboration or 'Tragedy of the Commons' type problems (Mitchell and Keilbach 2001). The distribution of power among states and the corresponding allocation of interests that states perceive themselves as having in remedying, or ignoring the problem are also important determinants of the ease of resource. Benefits can include both visible and material concerns as well as less obvious but nonetheless potent concerns with underlying values and identities. The general level of environmental concern in civil society in Germany and the rests is likely to play an important credential role in the responsiveness to international environmental institutions as well. Environmental regimes become more effective in Germany due to high level of environmental awareness and German's civil society concern on the environmental. Variation in interest across environmental problems and

over time can contribute to explain variation in the effectiveness of corresponding international environmental institutions can be seen equally important.

The adoption and the diffusion of environmental technologies can view as a typical case of technological competition between established technology, or a dominant design, and a set of the alternative of environmental technologies. The findings of the literature on technological competition can be used to draw some lessons on the most favorable demand conditions for the adoption and diffusion of environmental technology. Olson and Kemp (1994), Green and Miles (1996) and Jamison (2001) identified that the technology is a possible solution to meet both short and long-term environmental goals. Freeman (1992) and Rennings (1998) also argued that innovation needs to be categorized in the encompassing of social and organizational arenas to succeed the green technology innovation. Furthermore, Sanden and Azar (2005) highlighted the importance for not being blindfolded and confined into short-term solutions. Moreover, Dosi in 1998 has elaborated the requirement of disruptive approach in accessing the environmental technology innovation (Hordern, 2008).

#### **Instrument-related Issues:**

There are various types of policy instruments which a national government can utilize to improve the environmental situations, perhaps through inducing eco-innovation. Such instruments may group under four generic headings (see, for example, Jordan, 2003):

- Market-based (also called economic) instruments (EEA, 2006) for a recent review of European experience). These tools include `emissions trading, environmental taxes and charges, deposit-refund systems, subsidies (including the removal of non-environmental subsidies), green purchasing, and liability and compensation´ (EEA, 2006).
- Regulatory instruments, which seek to define legal standards about technologies, environmental performance, pressures or outcomes. Kemp (1997) has documented how such standards may create innovation in environmental protection.
- Voluntary (also called negotiated) agreements between governments and producing organizations (ten Brink, 2002). These change the investment-per-return ratio either by forestalling the introduction of market-based instruments or regulation. They can also lead to greater awareness of technological possibilities for eco-innovation that increase profitability as well as improving environmental performance (Ekins et al. 2006).
- Information-based instruments as the main example given by Jordan et al. (2003) is eco-labels, which may be mandatory or voluntary. These change the investment-per-return ratio sometimes by promoting more eco-efficient products to consumers. They can also improve corporate image and reputation.

Significantly, environmental product innovations have been driven by the strategic market behavior of firms. Also, environmental process innovation is more driven by regulation factors. Influence from `soft´ regulatory instruments such as environmental liability, eco-audits, voluntarily commitments, and eco-labels can prove as the main influence of influence of individual policy instruments on environmental innovation. These instruments enable firms to use their environmental performance in their marketing strategies or negotiations with the state (Cleff and Rennings, 1999b). Environmental-based innovative firms seem to be less dependent on `hard´ state

regulation than other, more passive businesses. Thus, ‘soft’ and voluntary environmental policy measures may be sufficient for pioneers. However, ‘hard’ measures (command and control instruments, duties) seem to be still necessary for a diffusion of integrated measures to non-innovative firms.

Germany can use two sets of instruments to address the two complementary knowledge and environment-related market failures. Studies evaluating the effectiveness of policy options find that a dual set of policies involving technology and environmental policies, for instance, both research subsidies and carbon taxation is superior to a policy based only on environmental policies and that policy neutrality regarding technology is not always possible and even not desirable in certain cases. Policies addressing the knowledge-related market failures can facilitate the creation and diffusion of new environmentally-friendly technologies while complementary policies correcting the environmental externality provide stronger incentives for their creation and adoption (Dutz, 2012). Various policies that can be implemented in Germany to support new knowledge creation, to strengthen diffusion and adaptation of existing knowledge to local contexts and to develop the absorptive capacity for innovation for protection and conservation of the environment as outlined in Table 3 below.

Table 3: Innovation Policies in Regards to Policy Areas, Intended Beneficiaries and the Policy Instruments

<b>Policy Areas</b>	<b>Intended Beneficiaries</b>	<b>Policy Instruments</b>
1. Promoting frontier innovation (innovation finance and other policies for development and commercialization of new-to-the-world knowledge)	Firms with sufficient technological capabilities; financiers	-government-funded RandD (public labs; matching grants, soft loans and tax credits for private firms) - patents and other intellectual property rights (IPRs) -support for early-stage technology development (ESTD) finance including support for private capital (angels, early stage VC) -prizes and Advance Market Commitments (AMCs)
2. Promoting catch-up innovation (policies to facilitate access to new-to-the-firm knowledge and to stimulate technology absorption)	All firms; public labs and universities; all citizens	- open trade, FDI, IPRs, diaspora and ICT policies - patent buyouts and compulsory licenses - patent pools and open source mechanisms - public procurement, standards and regulations - support for finance to early adopters/demonstrations
3. Developing absorptive capacity (policies to strengthen skills and more broadly spur the accumulation of new knowledge by entrepreneurs/firms)	All firms; workers and managers; researchers; trainers	- education and life-long learning policies - enterprise-based worker training, management and entrepreneurship training, and other technical and vocational education and training (TVET) - facilitating connectivity through global alliances and supplier development linkages to global value chains - The rule of law, contract enforcement, competition, bankruptcy and re-entry facilitation; urban policies ('sticky' cities to attract and retain talent)

(Source: Dutz et al., 2012)

The share of environmental patents out of all patents issued was higher in the United States, Japan and Germany compared to other countries regarding the share of pollution abatement expenditure in GDP. An indicator of the severity of environmental regulations with the inclusion of pollution abatement innovation spending is also high in these countries (Lanjouw and Mody 1996). Direct control on air emissions standards for power plants was shown to work well in Germany when the energy sector was still not liberalized, and the energy companies had the possibility of passing through the costs. The context was important in having parties accept the required command and control. Evidence suggests that German emissions reductions fell very quickly due to the instrument and setting and faster than countries where economic instruments used. Anderson et al. (2001) emphasized that 'standard' environmental policy instruments are not sufficient to induce eco-innovation, and the need for direct support for such innovation is still vital. The main reasons for this are the positive externalities of change and the long time lag between the implementation of a standard policy and the market penetration of new technology. The appropriateness of particular instruments (or instrument mixes) may depend on the purpose for which they are used, such as, innovation or diffusion and the specific context in which they are applied (Kemp, 2000). Nevertheless, the instrument design may be at least as important as the instrument type because one type of tool can produce different possible outcomes if harnessed difference way.

An introduction of 'environmental' substitution obligations through legislation passed by Germany and few European countries by mandating the replacement principle for occupational and safety case. Sweden focused their substitution principle to be part of Swedish chemicals legislation since in 1973 (Löfstedt, 2003). After 1999, this principle had been known as the 'product choice law' and became one of the cornerstones of the Swedish Environmental Code. Meanwhile, Denmark adopted the substitution policy approach in their occupational health and safety legislation which enacted in 2001. This enactment will require the replacement of hazardous substances or materials by less harmful ones. Based on this success stories, German also followed the same foot step by applied the substitution principle through German Ordinance on Dangerous Substances (Gefahrstoffverordnung) States. The positive impact of this law is the employers should prevent or minimize the dangers to the health and safety of their employees caused by hazardous substances by substituting the preferable relevant content.

**Concluding Thought:**

The review revealed a number of issues related to the two common elements of two frameworks- the environmental innovation and socio-economic-cultural system. Some of the institutional issues include the involvement of multiple institutions, the accessibility of technology, the technological solutions to varying levels of problem difficulty and timeframe, and the legitimacy and competency in dealing with the environmental problems. The instrumental issues, meanwhile, appears related to the hard and soft regulatory meant to either monitor or facilitate the policy implementation.

In short, history shows that innovation is one of the usual characteristics of markets and capitalist economic development, and current change rates are very high. However, typical change is driven by a desire for market success, which may have little to do with environmental impacts. In fact,

standard change may increase or decrease environmental impacts. The environmental policymakers' task is to seek to harness regular innovation forces to achieve environmental improvements as well as improvements in products and processes from a market point of view. The innovativeness in environmental policies in Germany can be made in many ways as discussed in this paper. The German's ability to 'reform' and to 'green' their national institutions, their ability to invent and produce the environmental technology products and their careful implementation of instruments will be the main factors to put Germany a leader in environmental governance globally. An international study on the superb achievement by other countries as a benchmark for Germany to follow is also important.

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**Appendix**  
**Sources (Detailed)**

Library Reference (16)		Report/Paper (6)	Presentation (1)
Books (14)	Journal (9)		
1. Controlling Environmental Policy: The Limits of Public Law in Germany and the United States (1995)	1. Research Policy 25 and 28 (1996, 1999)	1. Assessing Innovation Dynamics Induced by Environmental Policy- Combined Methodological and Case Study Synthesis Discussion Paper (2006)	Ministry of Environment, Germany (2013)
2. 25 Years of Modern Environmental Policy in Germany. Treading a Well-Worn Path to the Top of the International Field (1995)	2. European Environment 9 (1999)	2. Using the Market for Cost-Effective Environmental Policy-Market-based Instruments in Europe (2006)	
3. The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail (1997)	3. OECD Innovation and the Environment (2000)	3. Environmental Policy to be Innovation Friendly (2007)	
4. National Environmental Policies. A Comparative Study of Capacity-building (1997)	4. Risk Analysis 23 (1996)	4. Measuring Eco-Innovation: Framework and Typology of Indicators Based on Causal Chains (2008)	
5. Environmental Policy and Technical Change-A Comparison of the Technological Impact of Policy Instruments (1997)	5. International Organization 55 (2001)	5. Measuring Eco-innovations (2008)	
6. Comparative Politics: Rationality, Culture, and Structure (1997)	6. Ecological Economics 32 (2000)	6. Green Growth, Technology and	
7. Creating Regimes: Arctic Accords and International Governance (1998)	7. Cooperation and Conflict 26 (1991)		
8. Innovation-oriented Environmental Regulation: Theoretical Approaches and Empirical Analysis (1999)	8. American Review of Political Science 2 (1999)		
9. As Times Goes By (2001)			
10. Innovation and the Environment- Challenges and Policy Options for the UK (2001)			
11. Environmental Regime Effectiveness: Confronting Theory with Evidence (2001)			
12. Voluntary Environmental Agreements-Process, Practice and Future Use (2002)			
13. New Instruments of Environmental Governance? (2003)			

14. International Experiences in Institutional Choices for Environmental Policy (2008)		Innovation (2012)	
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# Perception Study on the Impact of the Oil and Gas Industry on Wealth Distribution

**Maran Marimuthu\***,

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: maran.marimuthu@petronas.com.my*

**Noor Azmilla Mohd Adzraai @ Zari**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: noorazmilla.adzraai@gmail.com*

*\* Corresponding author*

## **Abstract**

**Purpose:** This study investigates the impact the oil and gas industry on wealth distribution in the area of Dungun, Terengganu.

**Design/methodology/approach:** Appropriate concepts and measures are adopted to examine the wealth creation and distribution over the past three decades within the 10 km radius from the operations of the oil and gas industry. The sample size is 471 respondents. The respondents were the local communities who stayed there more than 20 years. The study incorporates both cross-sectional and time series data over a period of 20 years' period.

**Findings:** The empirical findings conclude that the local communities do not really benefit economically from the spillover effects of the oil and gas industry. Poverty in the area remains as a critical issue. However, the communities are satisfied with their physiological needs and some improvement can be seen in their earnings in the past 30 years.

**Originality/value:** this study offers more insights on the wealth distribution in the areas of the oil and gas operations. The study puts forward a significant argument that poverty can still be the main economic concern among the local communities despite the billions of money generated from the industry.

**Keywords:** Wealth distribution, Oil and gas, Economic impact

## **Introduction**

The presence of oil and gas operations and activities are imminent in the east coast region of Malaysia, especially in the district of Dungun, Terengganu. The emergence of the OandG industries has raised pertinent socio-economic issues towards the local communities and authorities. It covers various operational such as upstream, downstream and manufacturing. This research focusing on the development and well-being in the area of Dungun, Terengganu. Which involved directly or indirectly with the oil and gas industry. The local communities of Dungun are the major communities that have been affected by the industries.

## **Literature Review**

### ***Boomtown Impact Model and Oil and Gas Industry***

This model posits that rural communities are often overwhelmed by rapid population influxes associated with the energy development and that energy development often provides a number of unique opportunities and challenges to communities and local governments. Local governments are often caught unprepared by the waves of new growth. These include a lack of information, growth volatility, lack of jurisdiction, conflict between long-term residents and new residents, resistance to new government policy or planning strategies, shortage of staff or expertise, and a lack of or lag in sufficient revenue. Important considerations of the Boomtown Impact Model include the following;

*Boomtown Impact Model.* There are three major phases: the Development Phase where most of the action occurs and hundreds of workers descend on a community; the Production Phase that involves perhaps a tenth as many workers who enjoy many years of technical work, and the Reclamation Phase, where the wells are dismantled and the land reclaimed.

First comes Enthusiasm about the new development with lots of expectations and few facts, then Uncertainty as the realities of the influx of growth begin to show. There are few resources and denial by the State about their ability to help. Slowly, factions and friction build to a point of Near-Panic as demand outstrips services, resource gaps become clear, and planning seems futile. Eventually, the Adaptation stage is reached where core issues are identified, mitigation strategies agreed upon, and a sense of progress emerges from the large mass of impacts.

### ***Implications and Challenges: Some Empirical Evidence***

The rate and scale of energy development expanded rapidly in the western United States during the 1970s, driven primarily by rapid price increases and policy responses associated with the 1973 Arab Oil Embargo and 1979 Iranian revolution. Previously undeveloped areas of the western US saw rapid extraction of traditional fossil fuels (coal, oil, natural gas) during the 1970s and early 1980s; the construction of nuclear and coal-fired power plants; and the exploration of new and industrially intensive energy sources such as oil shale and coal gasification (Murdock and Leistriz, 1979; Myhra, 1980; Lovejoy and Little, 1977). The result of this energy extraction was massive industrial development and worker in-migration in hundreds of locations across the western United States, oftentimes near small and isolated rural communities that were historically unaccustomed to such activity (Murdock and Leistriz, 1979). Communities underwent drastic rates of population growth, and many sociological studies were performed into the 1980s that became known as the boomtown model or the “social disruption hypothesis” (England and Albrecht, 1984): a model that describes the social and economic effects of rapid population growth and industrialization in small communities, focusing on overburdened municipal services (Markusen, 1978), increased mental health caseloads (Bacigalupi and Freudenburg, 1983), and changes in the quality of life of long-time residents due to the breakdown of long-standing cultural patterns and informal social ties (Freudenburg, 1986). Krannich and Greider, 1984).

The boomtown model received criticism for a lack of guiding theoretical construct or cohesion among the different researchers, and many central aspects of natural resource extraction went largely unexamined by many researchers, including the possible effects of overbuilding and rapid population decline. One summary of the boomtown literature, as it pertains to community development, is a working paper by Markusen (1978) that details the major limitations to community development in the boomtown context: a lack of regulatory authority, insufficient control of land use, dramatic population growth, conflict between newcomers and “old-timers”, volatile production patterns, and poor information.

### ***Implications for Research and Community Development***

All energy-impacted communities will not experience the outcomes related to extreme isolation and rurality in the boomtown literature. Certainly, many of the effects predicated on rurality and isolation in the boomtown model should not be automatically assumed to occur in more urban locales. Researchers need to better understand the dynamics between population density and boomtown problems. No framework or “rule-of-thumb” currently exists that can be used to evaluate the level of rurality or interdependence of a community and determine the susceptibility of problems related to rapid growth. The field would benefit greatly from a meta- analysis of boomtown problems that examines the relationship between isolation, population density, and the range of effects experienced. Each context and community must ultimately be evaluated on a case-by-case basis. For communities that do not face extreme isolation, there is an implied opportunity and need for greater regional planning and coordination among other communities in the area (Jacquet and Stedman, 2011); for example, the city of Elmira, New York, has experienced economic and housing growth as “spillover” from drilling that has occurred as far as perhaps 160km away (Navvaro, 2011). Places such as northern Pennsylvania do not experience community effects so much as they experience regional ones as housing, service, and municipal demands related to population growth can easily migrate to adjacent communities.

### ***Implications for Research and Community Development***

The economic implications of widespread lease bonuses and royalties accruing to landowners in communities are significant, with the potential to influence community development, the fiscal health of municipalities, and how residents perceive and react to development in their communities. Due to a historical lack of interest and the continuing high cost of access to lease data (due to inadequate public records), too little is currently known about important land and mineral rights ownership patterns in the eastern landscapes now being affected by unconventional oil and gas development (e.g., Who owns subsurface rights? Who receives the royalties and bonuses? One of many such lessons is the “critical” element of “local ownership and control over a region’s place-based assets and businesses, and the structures that generate wealth from these assets”. In another product of a recent Ford Foundation funded initiative on wealth creation in rural America, Kelly and Ratner (2009, p. 4) cite Goldschmidt (1947) in emphasizing even more strongly that “ownership and control of assets can spell the difference between those who enjoy economic stability and those who do not”. Research is needed to further contextualize and sort out the potential and performance of the examples mentioned by Kelly and Ratner, including

institutions of shared ownership (cooperatives, land trusts, easements, covenants, etc.) and related tools that promote community control or influence (fees/taxes, local currencies, community benefits agreements, land banking, community endowments, etc.).

Many of the previous contexts in which the boomtown framework has been applied involved singular resources or related construction projects that were located at a specific location that was not likely to migrate. While the length of time of the project may have been uncertain, the physical location was not. In considering the component of time, much of the boomtown literature simply did not address the resource bust. If the bust was addressed, it was assumed that the eventual decline in activity would effectively end all development in the area (Gilmore, 1976; Markusen, 1978). Many researchers called for a longitudinal perspective that included a post-impact analysis; however, most boomtown studies effectively reported on “a snapshot in time”, often at the height of growth and change (Seyfrit, 1988). Brown et al. (2005) eventually expanded this narrative to include a recovery cycle that can occur in communities after the boom and bust, where communities eventually experience increased qualities of life that begin to approach pre-development levels; however, even that study supposes new waves of development are unlikely. In contrast to 30-year cycles of development, modern exploration and production practices have demonstrated the ability to quickly ramp up and ramp down activity at given locations, moving rigs and crews across various plays. This ability reinforces the prospect that a given geographical area will see notable ebbs and flows in activity, prompted by smaller changes in markets and general economic conditions.

### ***Community Development***

As previously noted, most of the initial boomtown literature was sociologically grounded. The economic (or other) drivers of the boom and how they, as well as the community, evolved over time were taken as givens. Several researchers have attempted to advance a more economically-oriented branching of the boomtown literature, each of which identifies timing-related issues (Freudenburg and Gramling, 1998). Gramling and Brabant (1986) represents an early contribution that identified the need to modify the basic boomtown model to account for the significance of a fluctuating pace of development and policy as a mediator of this pace, along with the interactions between local and nonlocal pools of labour and the gradual regional evolution of new industry sectors over time. In a more narrowly-scoped paper concerning optimal, municipal infrastructure investment, Cummings et al. (1978) draw similar attention to pace/timing, geography, economic uncertainty, and the relationship of each of these to the differential incidence of municipal costs incurred versus revenues earned. Given the day-to-day demands on municipalities in the boomtown context, it is difficult for communities to plan at all, much less plan for these kinds of complexities or the indeterminate future when development may rapidly decline and the dynamics of municipal service supply and demand will shift dramatically. While most areas are likely not to experience the aggressive levels of population growth and service demands seen in the typical boomtown model, the changes are still likely to be significant and point to ongoing challenges to community-based planning in the context of energy development (STCRPDB, 2012). Indeed, even researchers have often not considered “the bust” when describing problems and solutions for local

municipalities (Seyfrit, 1988). The changes in the spatial and temporal footprint of the oil and gas industry may dictate that communities will need to plan even further ahead to encompass the repeated mini-booms and mini-busts that may occur as companies variously develop and scale back resource extraction. In addition, for reasons of capacity as well as the geography of new energy landscapes, some form of regionalism seems indicated in both research and practical agendas. Planning institutions with capacity or potential to reach beyond single communities can profitably support and inculcate greater intentionality in energy country regionalism, especially in relation to a trend that has been termed “ad hoc rural regionalism” (Hamin and Marcucci, 2008).

### ***Community Development***

Although the explanations by industry analysts as to why drilling activity can continue despite very poor profit margins seem compelling, in-depth research is needed on the extent and implications of each identified phenomenon. Of critical importance for policy and for affected communities is a deeper understanding of how these dynamics may extend over time. All of the aforementioned issues remain highly relevant to current efforts to understand unconventional oil and gas extraction. As noted in the discussion above regarding the decreasing prevalence of rurality and isolation in modern boomtowns, it is the broad, cumulative, and regional impacts that are a new and significant facet of these new kinds of development. These impacts simultaneously involve multiple communities and are associated with a distinctive, fickle pace and scale of development driven by global financial and economic interests: phenomena that require further adaptation and expansion of boomtown theory (Christopherson and Righthor, 2012; Haeefe and Morton, 2009; Kay, 2011).

### **Research Methodology**

The study was conducted in the district of Dungun which covered 10 km radius surrounding the industrial area of Paka, Dungun. The sample size is 471 respondents. The respondents were the local communities who stayed there more than 20 years. Questionnaire was specially developed to meet the objective of the study which had a central concern on wealth distribution contributed by oil and gas industry in the area of Dungun. Relevant variables were also incorporated in the study as parameters of wealth distribution. The data were primary in nature, and hence, the analysis was performed using the cross-sectional data. The 5-point likert scaling was widely used to capture input on wealth distribution. Unit of analysis was individuals (residents) from the surrounding villages.

### **Findings and Discussions**

#### ***Respondents' Profile***

Table 1 shows respondents profile comprising of gender, age, educational level, village and marital status. Male respondents accounted for about 30 per cent and females accounted for about 70 per cent. Large group of the respondents were between 30 and 60 years old (about 70 per cent). Only 5 per cent completed their studies at tertiary level, however, about 51 per cent managed to complete their studies at secondary school, and about 30 per cent only completed primary level. Respondents

were equally distributed among the villages selected for the study as given in Table 1. About 81 per cent were married, others were single (7.2 per cent) and divorced (11.7 per cent).

Table 1: Details of Respondent Profile

Items	No. of Respondents	%
<b>Gender</b>		
- Male	139	29.9
- Female	332	70.5
<b>Total</b>	<b>471</b>	<b>100%</b>
<b>Age (years)</b>		
- <20	6	1.3
- 21 – 30	60	12.7
- 31 – 40	99	21.0
- 41 – 50	89	18.9
- 51 – 60	136	28.9
- 61 – 70	62	13.2
- 71 – 80	12	2.5
- > 80	7	1.5
<b>Total</b>	<b>471</b>	<b>100%</b>
<b>Education Level</b>		
- No education	43	9.1
- Primary school	137	29.1
- Secondary School	241	51.2
- Certificates	19	4.0
- Diploma	23	4.9
- Degree	5	1.1
- Master and PhD	3	0.6
<b>Total</b>	<b>471</b>	<b>100%</b>
<b>Location of Village</b>		
- Durian	100	21.2
- Mentagau	102	21.7
- Gong Gemia	61	13.0
- Kuala Paka	104	22.1
- Nyior	104	22.1
- Limbong		

<b>Total</b>	<b>471</b>	<b>100%</b>
Marital Status		
- Single	34	7.2
- Married	382	81.1
- Divorced	54	11.7
<b>Total</b>	<b>471</b>	<b>100%</b>

**Ownership and Wealth Distribution**

The most pressing issue is on house ownership in the area. It seemed that 74 per cent of the respondents owned houses. Whereas 26 per cent claimed that they did not own any house in the area as given in Figure 1 below.

House Ownership

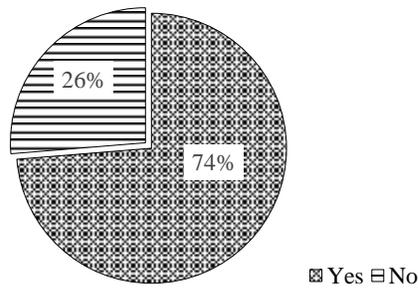


Figure 1: House Ownership

Table 2 presents the mean scores and standard deviation reflecting the trend or pattern of growth on household income, property acquisition, accumulation of financial assets and accumulation of debts over a 30-year period. Cross-referenced with the scales shown in Note 1, the people earned about RM3000 past two decades (2.01 and 1.62 respectively), but current earnings were recorded higher than RM3000 but less than RM5,000 per household (2.65). In terms of financial assets, many invested on average of RM20,000 or below and there was no much improvement in the past 30 years (1.19, 1.09 and 1.08 respectively). Whereas property ownership improved over the period of 30 years. Past 10-20 years, property ownership was recorded between RM20,000 to almost RM40,000 per household (1.82 and 1.59 respectively) but currently, it increased to about RM50,000. Figure 2 presents the graphical expression of wealth distribution using the above parameters. Meanwhile, relatively debt against total asset owned by the communities increased significantly from less than 10 per cent to more than 30 per cent over the 30- year period (1.63 to 2.37).

Table 2: Standard Deviation and Means Score of Wealth Distribution

Items	Means Score#	Standard Deviation
<b>Household Income:</b>		
Current	2.65	1.166
10 years ago	2.01	0.990
20 years ago	1.62	0.870
<b>Financial Asset:</b>		
Current	1.19	0.655
10 years ago	1.09	0.416
20 years ago	1.08	0.515
<b>Property:</b>		
Current	2.68	1.715
10 years ago	1.82	1.350
20 years ago	1.59	1.178
<b>Debt/Asset (%):</b>		
Current	2.37	1.748
10 years ago	1.79	1.507
20 years ago	1.63	1.388

# Meanscores captured using the 5 point likert scaling as given in Note 1.

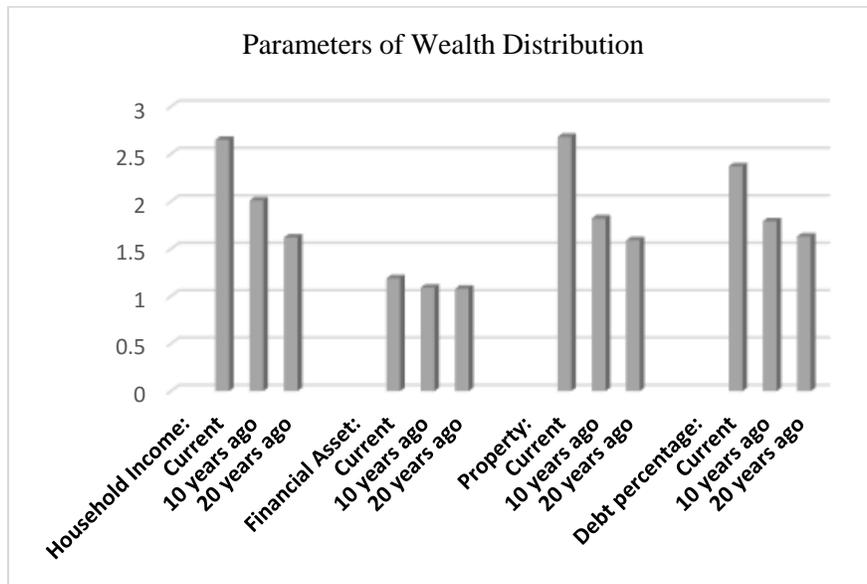
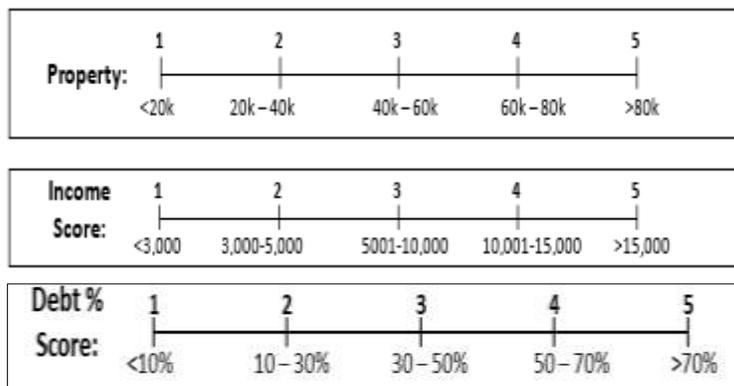


Figure 2: Trend Analysis on Wealth Distribution Past 30 Years

**Note 1:**



**Perception On the Impact of Oil and Gas Industry**

The study also examined the perception of the local communities towards the oil and gas industry on wealth creation and economic benefits in the surrounding areas. This was recorded based on the 5-point likert-scaling ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (5). Figure 3 shows the local communities were unable to sustain with stable income, in fact they dissatisfied with income growth but marginal improvement was recorded (3.0). They were quite inclined towards savings but generation of income might not support them to save. However, it was recorded that poverty was still the pressing issue in the area. In essence, the most important argument is that poverty is the main concern in that area as this will continuously affect the well-being of the local communities in the area of Dungun as presented by the radar plot in Figure 4.

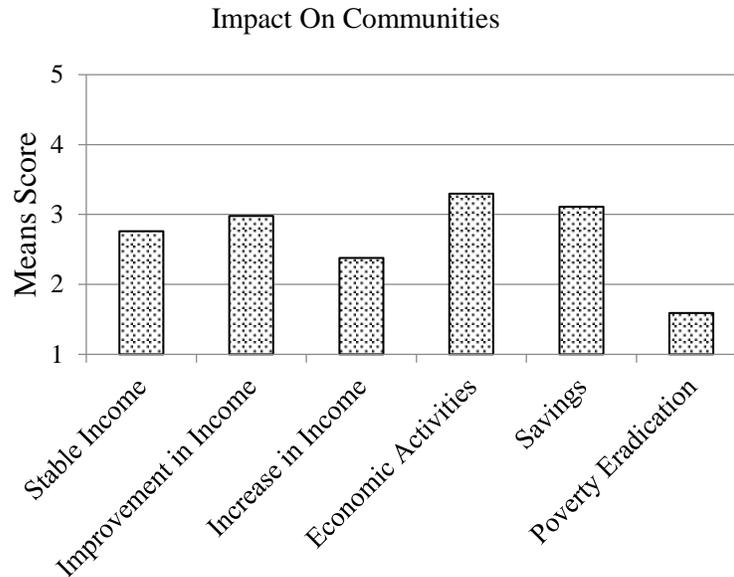


Figure 3: Economic Measures of Impact of Oil and Gas Industry

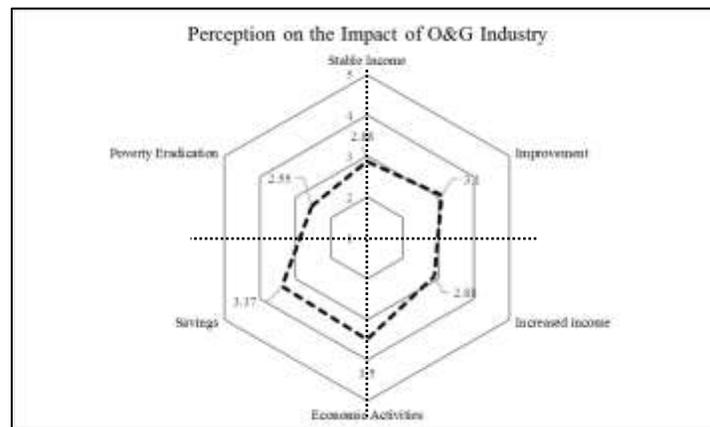


Figure 4: Radar Plot on the Impact of Oil and Gas Industry

Above shows the radar graph on the perception of the local communities on the impact of oil and gas industry. There were 6 items been asking, which is the poverty eradication, stable income, income improve, increased in income, economic activities and saving behavior.

**Conclusion**

In essence, this preliminary study explored the important aspect of the communities’ well-being. In essence, a lot more need to be done to improve on wealth creation and distribution be it in terms

of household income or even property ownership. Simultaneously, poverty seems to a pressing issue in the area and this in turn may escalate more dissatisfaction towards the industry. In addition, the communities are also engaged with higher debts. However, the communities do not face any serious problem in fulfilling their physiological needs. With the present growth of their earning power, they have become overly concerned about sustainability of their future generations particularly on economic sustainability.

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# Ownership Structure and Firm Value: An Insider Ownership Effect

**Maran Marimuthu\***

*Department of Management and Humanities, Universiti of Teknologi PETRONAS,  
Malaysia.*

*Email: maran.marimuthu@petronas.com.my*

*\* Corresponding author*

## **Abstract**

**Purpose:** This study attempts to investigate the effect of insider ownership on firm value.

**Design/methodology/approach:** A sample of 282 non-financial listed companies is used in this empirical study. The study incorporates both cross-sectional and time series data over a period of five years period. These data are combined as pooled data for analysis and modeling using the pooled OLS method. Appropriate methods and procedures are used in selecting variables and measures to offer more insights of the effect of insider ownership on firm value. Dependent variable is the firm performance, and the independent variables were three levels of insider ownership, defined as the percentage of shares owned by directors and there were four control variables; growth, firm size, block holding and leverage.

**Findings:** The results show that managerial ownership and firm value are inversely correlated. Managerial ownership ( $mo$ ) has a significant impact on firm value but a further increase of managerial ownership ( $mo^2$  and  $mo^3$ ) does not have any impact on firm value.

**Originality/value:** Arguments on the effect of managerial ownership on firm performance remains equivocal. This study has put forward for insightful information on the real implication of the increasing insider ownership on firm performance. Excessive managerial ownership does not offer any significant return on firm value.

**Keywords:** Ownership structure, Insider ownership, Firm value

## **Introduction**

Separation of ownership may have an adverse effect on firm value. Internal control in a company will prevent the agency problem from arising. Insider ownership includes the company's executives, officers, members of board. Hence, the conflict of interest between the shareholders and managers will reduce due to greater insider ownership.

Agency problems may arise when the goals of the principal and agent are different, especially when managers are their per or asymmetric information exists which makes it difficult for the principal to monitor the agent's actions. For example, an agency problem exists when management and stockholders have conflicting ideas on how the company should be run. This could affect the firm performance that cause it is hard to run smoothly for the operation. Demsetz and Lehn, (1985)

found that ownership and performance are endogenously determined by firm specific factors and key variables in the firms contracting environment (Himmelberg *et al.*, 1999). De Miguel (2004) examined several countries with diverse corporate governance systems and concluded that the prevailing governance system has a significant impact on the relationship between the ownership of managers and firm value.

The classic adverse-selection model of predicts that asymmetric information between informed managers and the public market causes underinvestment (Myers and Majluf, 1984). Jensen and Meckling, 1976) argued that there is a positive relation between inside equity holdings and firm value. They propose that inside holdings serve to align managers' interests with those of the stockholders, thus reducing agency costs. Conversely, other studies suggest that higher levels managerial holdings result in additional agency costs such as argued a negative relationship between the level of owner-managers' ownership and firm value (Fama and Jensen, 1983). As managerial holdings increase, managers have greater incentives to entrench or to avoid risk in their investment choices (Cary, 1969 ; Parrino *et al.*, 2005 ). Ownership structure is an incentive device for reducing the agency costs associated with the separation of ownership and management, which can be used to protect property rights of the firm (Barbosa and Louri, 2002).

## **Literature Review**

### ***Managerial Ownership***

A vibrant strand of this literature concerns the relationship between managerial ownership levels, the direct investment decisions made by management and the inherent value of the firm, as proxies by Tobin's Q ratio (Jensen and Meckling, 1976). Corporate value increases when the managerial ownership decreases (McConnell and Servaes, 1990). Coles *et al.*, (2003) find that there is no correlation between profitability and ownership concentration. Sun *et al.*, (2002) found that state ownership and firm performance was positively related, irrespective of the type of state ownership.

### ***Board Structure***

There are the issues surrounding how board structure and board turnover influenced firm performance. The key characteristics are the total board size, the ratio from inside to outside directors and also the rate of turnover of director (Furtado and Karan, 1990). Vance (1964), reports a positive correlation between proportions of inside directors and a number of performance measures. The studies mostly small and non-listed companies in Turkey and finds that separation of chairman and general manager positions has significant positive impact on firm performance. Board structure does not have a significant impact on performance (Kula, 2005; Selekler-Goksen and Karatas, 2008).

### ***Ownership Concentration***

The number of large-block owners and the total percentage of the company's shares that they own define as ownership concentration. Large-block shareholders are investors who typically own at least five percent (5%) of the company's shares. The positive effect of ownership concentration can be explained by the efficient monitoring hypothesis, which contends that higher concentration of ownership gives large shareholders stronger incentives and greater power at lower cost to

monitor management. Grossman and Hart, (1986) argued that shareholders with a large stake in the company show more willingness to play an active role in corporate decisions because they partially internalize the benefits from their monitoring effort.

Conceptually, concentrated ownership may improve performance by increasing monitoring and alleviating the free-rider problem in takeovers (Shleifer and Vishny, 1986). Concentrated ownership gives them both more powerful incentives to become involved in governance, as well as a means to influence managers by means of direct access strategies and the threat of using their concentrated voting rights (Yeh *et al.*, 2006)

### **Issues**

Literature argues changes in insider ownership tend to affect firm value but the results do seem to be conclusive (Wu and Chen, 2006). demonstrated that changes in share ownership by insiders can affect firm value. McConnell *et al.*, (2006) argues there could be a curvilinear relationship between insider ownership and firm performance, in which it has been observed that ownership level below 14% would give a positive impact on firm value, whereas, ownership level above 40% would create a negative impact on firm value. Findings on the curvilinear relationship were put forward by discussed rigourously by found a negative relationship between insider ownership and performance, and supported by (Bhabra, 2007; Short and Keasey, 1999; Demsetz, 1983).

Different views and theories relating to the insider ownership and firm value have motivated many researchers to conduct further testing on different populations and contexts. In view of this, an empirical investigation will be of great input for many researchers and practitioners to gain a clear understanding of the effect of insider ownership (i.e. managerial ownership) on firm value among the Malaysian corporations. This paper focuses on how increasing managerial ownership affects firm financial performance. Different impacts on the ownership structure will result in different levels of firm value maximization.

### ***Objective of the Study***

The objective of the study is to investigate the relationship between managerial ownership and firm performance. Specifically, this study also examines the effect of the fraction of share owned by manager on firm performance.

### **Research Methodology**

This study used the secondary data that were mainly taken from financial databases and annual reports over the period 2004-2008. A sample of 282 non-financial listed companies was considered and these companies were among the largest companies based on market capitalization. Pooled data analysis was adopted as the data comprised of both time series and cross-sections.

### ***Variables Measurements***

Dependent variable is the firm performance, and the independent variables were three levels of insider ownership, defined as the percentage of shares owned by directors and there were four control variables; growth, firm size, block holding and leverage.

Due to curvilinear effect that exists between insider ownership and firm value, further modification required on the model used for testing the effect of managerial ownership (insider ownership) on

firm value. Hence, to incorporate the square and cube of insider ownership as regressors together with the original ownership. This permits the model to endogenously determine the effect of managerial ownership<sup>24</sup>. Hence, the model can derived as follows;

$$Firm\ value = \alpha + \beta_{mo} + \beta_{mo2} + \beta_{mo3} + \beta_{control\ variables} (1)$$

- Firm value = Tobin’s Q
- (mo)<sup>1</sup> = % of share own by director
- (mo)<sup>2</sup> = square % of share own by director
- (mo)<sup>3</sup> = cube % of share own by director
- control variables: growth, firm size, block holding and leverage

**Formulae:**

Tobin’s Q =(MVE + PS + DEBT)/TA, MVE is the market value of equity, PS is preferred stock, DEBT is the value of short- term liabilities net of short term assets plus the book value of long term debt, and TA is the book value of total assets. Growth = (Current Year Sales – Previous Year Sales)/Previous Year Sales, firm size = Log of assets, Block Holding =(above 5% held by the shareholders)/number of outstanding shares, Leverage = Total Debt/Total Asset

**Analysis and Discussions**

Table 1 below presents bivariate correlation coefficients among all the variables. There is a significant negative correlation between managerial ownership (mo) and firm value (-0.057) at 0.05. Firm size and leverage are inversely correlated with firm value (-0.315 and -0.086 respectively). As expected, strong correlations are found among mo, mo2 and mo3.

Table 1: Correlation Results

Variables	Mean	1	2	3	4	5	6	7	8
1.Tobin’s Q	1.935	1	-0.057*	-0.043	-0.020	-0.315**	-0.086**	0.060*	-0.008
2.MO	8.746		1	0.694*	0.0281*	-0.217**	-0.078**	0.003	0.000
3.MO <sup>2</sup>	175.303			1	0.874**	-0.115**	-0.032	0.052*	0.004
4.MO <sup>3</sup>	4676				1	-0.046	0.000	0.022	0.002
5.Firmsize	8.725					1	0.209**	0.049	-0.014

<b>6.Leverage</b>	0.259	1	-0.0102**	-0.039
<b>7.Blockholdings</b>	0.516		1	-0.002
<b>7.Growth</b>	1.106			1

\*significance level at 0.05, \*\*significance level at 0.01

Table. 2. Pooled Data Regression Results

Variable	Coefficient	Std. Error	t-Statistic
MO	-0.0683	0.0234	<b>-2.9206**</b>
MO2	0.0019	0.0012	1.6278
MO3	0.0000	0.0000	-1.5995
Growth	-0.0046	0.0078	-0.5841
Firm size	-1.3690	0.1024	-13.375**
Block holdings	0.5545	0.2044	2.7131**
Leverage	-0.2759	0.2552	-1.0811
Constant	14.0529	0.9127	15.397**
R-squared	13%		
F-statistic	29.429**		

Dependent variable: Tobin's Q, \*sig at 0.05, \*\*sig at 0.01.

Table 2 presents regression output in which managerial ownership(mo) has a significant impact on firm value at 0.01. However, there is no evidence to support the effect of increasing managerial ownership (mo2 and mo3) on firm value. Hence, the model can be written as follows;

$$Firm\ value = 14.053 - 0.0068MO - 0.002MO2 + 0.0000MO3 - 0.005GROWTH - 1.369FIRMSIZE + 0.555BLOCK\ HOLDING - 0.276LEVERAGE$$

The normal plot of regression standardized residuals for the dependent variables indicates a relatively normal distribution (Figure 1). There is also no clear correlation between the residuals and the predicted values, consistent with assumptions of linearity (Figure 2).

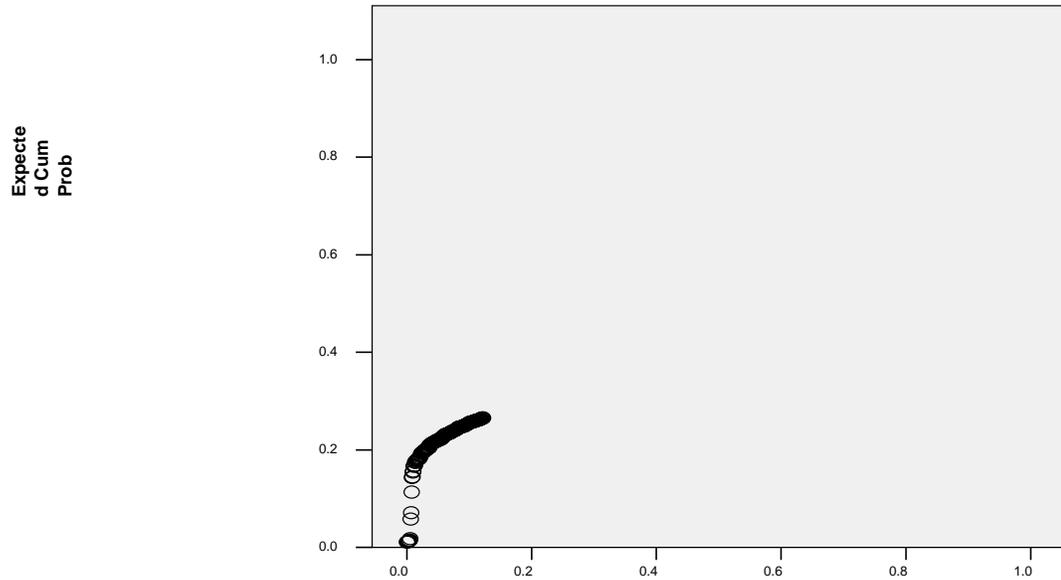


Figure 1: Normal P-P Plot of Regression Standardized Residual  
 Scatterplot

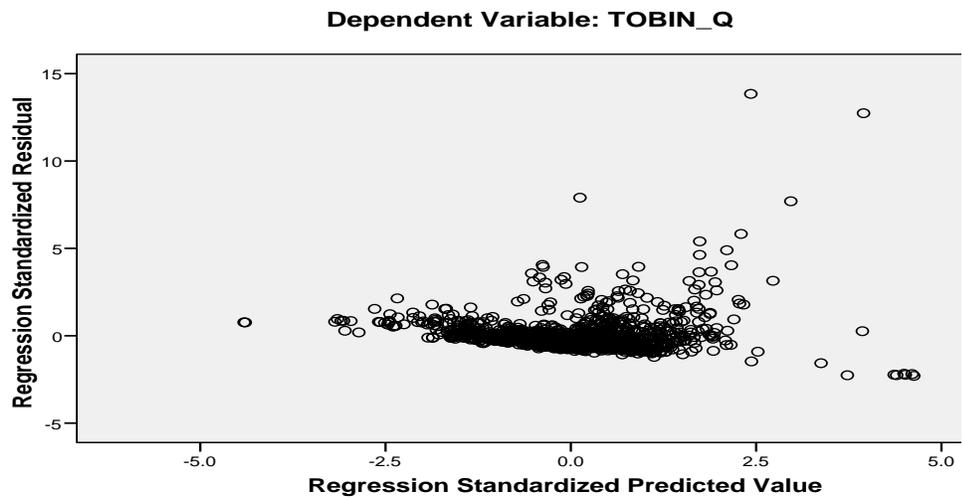


Figure 2: Scatter Plot of Regression Standardized Residual

**Implications of the Study**

Higher levels of insider ownership and ownership concentration may not always reflect greater incentives to maximize value and monitor managers, but may be associated with greater managerial entrenchment. Beside, managerial entrenchment effects associated with practical control may take place at lower levels of ownership.

One of the costliest manifestations of the agency problem is managerial entrenchment.

Managers, who place a great value on control but own only a small equity stake, work to ensure their own job security thereby entrenching themselves and staying on in that position even if no longer competent or qualified to run the firm. As insider ownership increases, agency costs may be reduced since managers bear a larger share of these costs. However, managers holding a substantial portion of a firm's equity may have enough voting power to ensure that their position inside the company is secure. As a result, they may become to a great extent insulated from external disciplining forces such as the takeover threat or the managerial labor market.

Furthermore, the restriction in Malaysia is more transparent compare with other foreign firm. Therefore, even the manager hold larger amount of share but they are not directly to affect the firm value. Although the executive remuneration is an important factor which will influence the company performance, but the executive remuneration in Malaysia is not significant, so the high remuneration for director will not affect the firm performance.

### **Limitations**

Lack of transparency in the annual reports could affect the quality of input. Different companies tend to adopt different accounting policies and accounting periods and hence, interpretations may differ. Though all companies selected were from non-financial sector, however, there were many industries involved and thus homogeneous characteristics of the sample might not be consistent.

The proposed model and hypotheses of this study are rigorously tested with market capitalization analysis, descriptive statistics, panel unit root test, cook's distance outliers test, pooled OLS, random effect, and fixed Effect techniques.

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# Customers' Preferences on Ar-Rahnu: Exploring the Adoption of the Islamic-Based Pawnshop Using PLS

**Maran Marimuthu\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia  
Email: maran.marimuthu@petronas.com.my*

**Indraah Kolandaisamy**

*\* Corresponding author*

## **Abstract**

**Purpose:** This study is to explore the factors that affect customers' switching behavior towards the adoption of *Ar-Rahn*.

**Design/methodology/approach:** This paper explores the factors that influence customers' preference towards *Ar-Rahn pawn-shop* in Klang Valley area. A sample of 250 respondents is adopted for this cross-sectional study using a questionnaire-survey method. Descriptive statistics analysis, bivariate correlations and partial least square (PLS) analysis are used in discussing the findings.

**Findings:** The PLS results indicate that religion, income, pricing, pledged assets and advertisement tend to affect customers' preference of *Ar-Rahn* pawn shop positively. Strategic location is also a significant factor to adopt *Ar-Rahn* but the farer the shop, the better the business will be.

**Originality/value:** This paper offers a new line of inquiry on the acceptance of Islamic pawnshop among the non-muslims in Malaysia. The paper reiterates that Islamic branding is acceptable even to non-muslims. The study also highlights that people in general expect the Islamic pawnshop to be located preferably farer from housing area and this could be due to norms and values of the local communities.

**Keywords:** *Ar-Rahn, riba*, pawn-broking, switching behaviour

## **Introduction**

*Ar-Rahn* refers to the Islamic mode of pawn-broking. In a conventional way, pawn-broking is a lending activity that lends money on the basis of collateral. In order to get financing, borrower will pledge their non-financial assets, such as gold jewelry and diamond as collateral for the loan. Interest will be charged on the loan and the collateral will be used to collect any unsettled balances in the event of default. Pawn-broking is considered as a source of short-term financing and it is generally used by the lower income group to get rid of their cash flow problems. Furthermore, pawnshop is considered as an important source of microfinance in many developing countries, especially in Asia (Fernando, 2003). It is the one-stop financial center for both men and women to

obtain a quick and convenient way to borrow money. Islamic pawn-broking service has provided an opportunity to Muslim consumers to choose transactions that do not involve 'riba'. 'Riba' means interest which is prohibited in Islamic system (Memon, 2007).

This definition of 'riba' is derived from the *Quran* and is unanimously accepted by all the Islamic scholars. It is considered a form of injustice and exploitation. Islamic pawnbroker would impose a service charge or safekeeping fees on the borrower. It is different from the conventional pawnbroker which will impose interest charged on the borrower, which is prohibited in Islam. Similar to conventional pawn-broking, the borrower must pledge a valuable asset as a collateral on the loan, hence the terms pledger (*rahin*), pledgee (*murtahin*, the lender) and the pledge (*rahn*). The Islamic pawnbroker would accept the pledge on a *wadiah* concept where the pawnbroker promises to safe-keep the valuable pledge until the loan is settled. Items to be accepted under conventional pawn-broking are beyond gold and jewelry but Islamic pawn-broker can only use gold as pawned items. In the event of default, the pledged item will be sold to a third party. This procedure will be used for settling the outstanding balance while any excess be returned to the borrower.

#### ***Pawn-Broking Services in Malaysia***

Pawnshop is an instrument of microfinance in Malaysia. Pawn-broking service was introduced in Malaysia in early 19<sup>th</sup> century (Ismail and Ahmad, 1997). Pawn-broking activities in Malaysia are subjected to Pawn Broking Act 1972. Conventional pawn-broking system is popular for quick cash borrowing amongst the middle or low income groups. However, it is argued that conventional pawn-broking system has several disadvantages. First, interest and other charges can be as high as 24 per cent per annum (2 per cent per month). Second, the valuation and measurement method are not transparent and subjective. Third, unclaimed gold pawned will be auctioned but the excess money will not be returned to the borrower. The first Islamic pawn broking service in Malaysia is the Foundation of Islamic Pledge of Terengganu which was formed by the Islamic Council and Malay Custom of Terengganu on the 23<sup>rd</sup> January 1992. In March 1992, *Ar-Rahn* Pawnshop, a subsidiary of Kelantan Capital Limited commenced its operations. On 21<sup>st</sup> August 1993, the Minister of Finance announced the introduction of a scheme, known as Islamic Pawn Shop Broking through the collaboration of three institutions namely Central Bank of Malaysia, Islamic Economic Development Foundation of Malaysia and Co-operative Bank of Malaysia.

#### ***Features of Ar-Rahn***

In the Islamic-based pawnshop, the loan granted is based on three concepts, i.e. *al-qardhul hassan* (loan without interest, but the borrower pays service charge), *Ar-Rahn* (valuable asset is placed as collateral for debt) and *wadiah yad dhammanah* (keeping valuable goods by guarantee). The deposit fee is based on the value of gold. Generally, types of pawned assets are all jewelries made from gold such as necklace, ear rings, rings, bangles, brooch and others. Platinum is not acceptable under *Ar-Rahn*. The rates breakdown of *Ar-Rahn* provided by Group of Kelantan Capital Limited Cooperative Bank, Cooperative Bank and Agricultural Bank of Malaysia (now known as Agro Bank).

### *Empirical Studies*

Amin, Chong, Dahlan and Supinah (2007) contributed some interesting findings to further understand the Islamic-based pawnshop (*Ar-Rahn*). They used various factors that affect the acceptance of *Ar-Rahn*. *Religion*, pledged asset and customer services seem to be more important and pricing system and location of Islamic-based pawnshop are perceived to be less important in affecting the acceptance of *Ar-Rahn*. In most business activities, Muslims emphasize the 'halal' transactions (Johari, Sanusi and Rais, 2007). Islamic pawnshops must genuinely be based on *Syariah Islamiyyah* (Amin et al., 2007). Most of the Muslims will go to *Ar-Rahn* rather than conventional pawnshop because of their religion since that *Ar-Rahn* is applying the *Syariah* concept. Religious conviction is a logical key determinant of the use of Islamic financial services (Gait and Worthington, 2008).

*Ar-Rahn* provides a cheaper and quicker way to get short term financings. Johari et al. (2007) argued that customers who were from the higher income group would be able to buy the mortgaged items (usually gold) which were expensive or possess valuables in a large quantity. Therefore, during the transaction, the demand for high income respondents is higher compared to the demand of low income respondents. A study by Amin et al. (2007) suggests that there is a need to strengthen the customer service in order to become a successful Islamic pawnshop. Besides that, there are some considerations that need to be taken into account when operating *Ar-Rahn*. First, the transaction must be efficient and fast; second, the pawnshop must be free from the issue of discrimination; and third, customer records must be kept confidential. Improving service quality will satisfy customers and thus it retains customers' loyalty (Lee and Murphy, 2005). Conversely, bad customer services will cause customers to switch to other service providers (Lee and Murphy, 2005). Pricing is significantly associated with the pawnshop transactions (Ismail and Ahmad, 1997). This reveals that the cost of getting quick cash in Islamic-based pawnshop is cheaper, thus, little burden is carried by the customers. In the related studies, price stands out as another overwhelming reason for switching such as in insurance and banking area (Lee and Murphy, 2005). Elizabeth (2002) examines the household's decisions to change or remain with their providers of checking or saving accounts.

Innovative Islamic pawnshops should be able to diversify the pledge asset for business, which is not just limited to gold but can be other valuable assets. That was many past researcher has stated that normal pawned items include gold and platinum. Thus, it is reasonable for Islamic-based pawnshop to expand pawned item beyond gold in order to attract more customers (Amin et al., 2007; Johari et al., 2007). An advertiser's primary mission is to reach prospective customers, create awareness among the prospective customers, influence their attitudes and buying behavior (Adeolu, Taiwo and Matthew, 2005). It is known that advertisement for *Ar-Rahn* does not seem to be aggressive enough in Malaysia and thus, not many people are aware about *Ar-Rahn*. Hence, effective advertisement can help *Ar-Rahn* operations to be expanded beyond the boundary of Muslim markets and this in turn, result in greater profitability (Adeolu et al., 2005). Location is another significant factor for pawnshop development. Studies suggest that customer prefer to

conduct businesses/transactions with the nearest Islamic-based. It is because the distance between pawnshop and customer's house will incur additional cost i.e. transportation cost, (Ismail and Ahmad, 1997). Johari et al. (2007) suggest the demand for customer with long distance is higher rather than the respondent with near distance. In a conventional term, convenient location has been identified as a critical factor influencing the choice of a bank by customers (Elizabeth, 2002).

### **Research Objectives**

Pawnshop is classified as one of the instruments of micro-financing in Malaysia (Ismail and Ahmad, 1997). Pawn-broking provides a convenient and quick way for consumer to get financing. As highlighted earlier, there are two kinds of pawnshop in Malaysia; conventional pawn-broking shop and Islamic pawn-broking (*Ar-Rahn*) shop. Consumer has an option to choose either one of this. However, *Ar-Rahn* is a better alternative for Muslim customers as it does not involve *riba* and it incorporates Shariah principles. Hence, Muslims are bound to opt for the Islamic pawn-broking in line with their religious practices.

Malaysia is the first which introduced Islamic-based pawnshop (*Ar-Rahn*) in the whole world (Zunaidah, 2006). However, there are very few *Ar-Rahn* shops in Malaysia as compared to the number of conventional pawnshops. Lack of awareness among the Malaysians about *Ar-Rahn* is also another contributory factor as to why many Malaysians are still not prepared to accept this kind of 'micro-financing' option which equally good, in fact, it could be better than the conventional pawnshop. Thus, understanding the factors affecting customer to switch to the *Ar-Rahn* is essentially important especially in expanding the adoption of the *Ar-Rahn* in Malaysia. Hence, the objective of this study is to explore the factors that affect customers' switching behavior towards the adoption of *Ar-Rahn*.

### **Research Hypotheses**

- H1: Religion positively related to customers' switching behavior towards Islamic Pawning.
- H2: Income positively related to customers' switching behavior towards Islamic Pawning.
- H3: Customer service positively related to customers' switching behavior towards Islamic Pawning.
- H4: Pricing system positively related to customers' switching behavior towards Islamic Pawning.
- H5: Pledge asset positively related to customers' switching behavior towards Islamic Pawning.
- H6: Advertisement positively related to customers' switching behavior towards Islamic Pawning.
- H7: Location positively related to customers' switching behavior towards Islamic Pawning.

### **Methodology**

This paper used primary data through a survey conducted cross-sectionally in Klang Valley. The sampling technique used in this study was convenience sampling. The sampling frame is limited to the respondents living within Klang Valley. The respondents were of different races and religions and they were above 18 years old. A five-point likert scaling was used for all the measures. A total of 250 questionnaires (self-administered) were obtained. A pilot test was also carried out to ensure the quality of the survey in terms validity of the measures used. Reliability

test, factor analysis, correlations and PLS analysis were adopted for this research. As for modeling purposes, the measures and adoption of the independent variables were consistent with some previous findings and models set (e.g. Adeolu, Taiwo and Matthew, 2005; Amin et al., 2007; Elizabeth, 2002; Ismail and Ahmad, 1997; Ismail and Sanusi, 2005; Johari et al., 2007; Lao, 2005; Lee and Murphy, 2005; Mohammed et al., 2005; Sanusi and Johari, 2006). In addition, as for the dependent variable, a measure was specially constructed to detect customers' preference using a five-point likert scaling. The theoretical framework proposed for this paper is given in Figure 1.

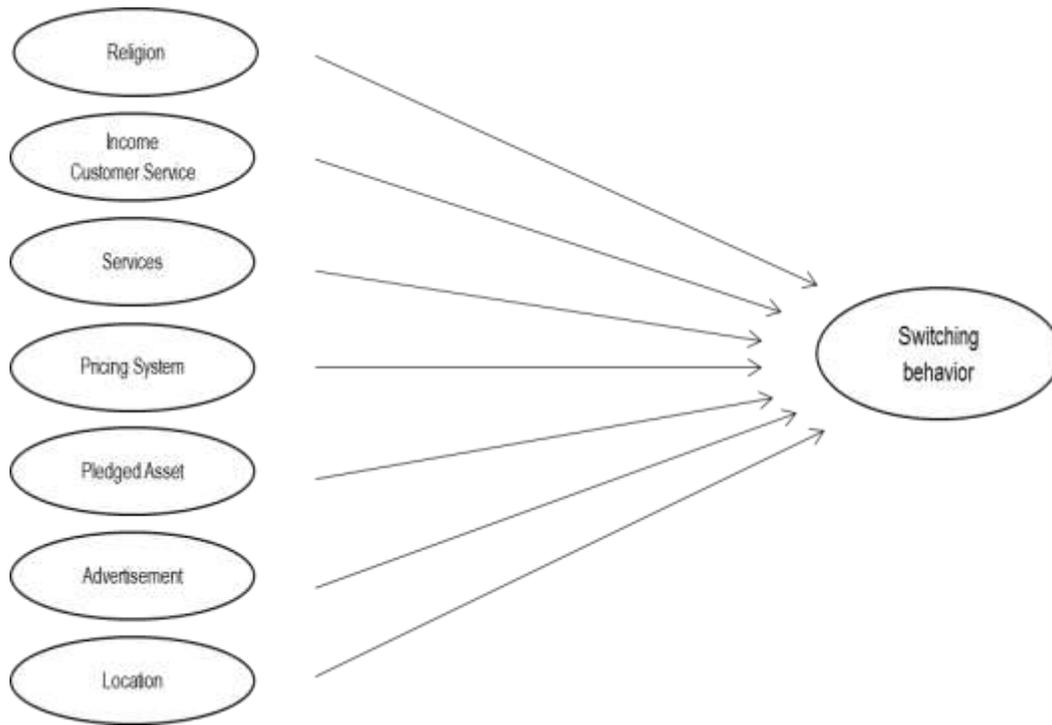


Figure 1: Theoretical framework

$$CWB = \alpha + \beta_1rel + \beta_2inc + \beta_3CS + \beta_4ps + \beta_5pa + \beta_6adv + \beta_7loc$$

## Analyses and Discussions

### *Preliminary Analysis*

This section presents the demographic characteristics of the respondents in the present study. The results of this analysis are illustrated in table 1. Based on the results, both male and female were quite equally distributed. About 40 per cent were married, 58 per cent were single. Representation of various races and religious groups were quite evenly distributed.

Table 1: Respondents' profile

	<b>Demographics</b>	<b>Percentage (%)</b>
<b>Gender</b>	Male	48.8
	Female	51.2
	<b>Total</b>	<b>100</b>
<b>Age</b>	18-24	39.2
	25-34	36.0
	35-44	20.4
	44 and above	4.4
	<b>Total</b>	<b>100</b>
<b>Marital Status</b>	Single	58.0
	Married	40.4
	Divorce	1.6
	<b>Total</b>	<b>100</b>
<b>Occupation</b>	Executive	26.0
	Non-Executive	48.0
	Self-Employed	13.2
	Others	12.8
	<b>Total</b>	<b>100</b>
<b>Yearly Income</b>	Less than RM 24,000	60.8
	RM 24,000 – RM 42,000	26.0
	Above RM 42,000	13.2
	<b>Total</b>	<b>100</b>
<b>Religion</b>	Islam	42.8
	Buddha	29.2
	Hindu	18.4
	Christian	8.8
	Others	0.8
	<b>Total</b>	<b>100</b>
<b>Race</b>	Malay	42.0
	Chinese	36.8
	Indian	21.2
	<b>Total</b>	<b>100</b>

**Main Analysis**

Data collected for the present study was analyzed by using partial least square (PLS) method. This technique was used due to three main reasons. First, PLS can handle both reflective and formative factors (Chin 1998). Second, PLS sets minimum restrictions on data distribution characteristics and sample size. Third, PLS is suitable for an exploratory research and alternative method for theory testing (Hair et al. 2014).

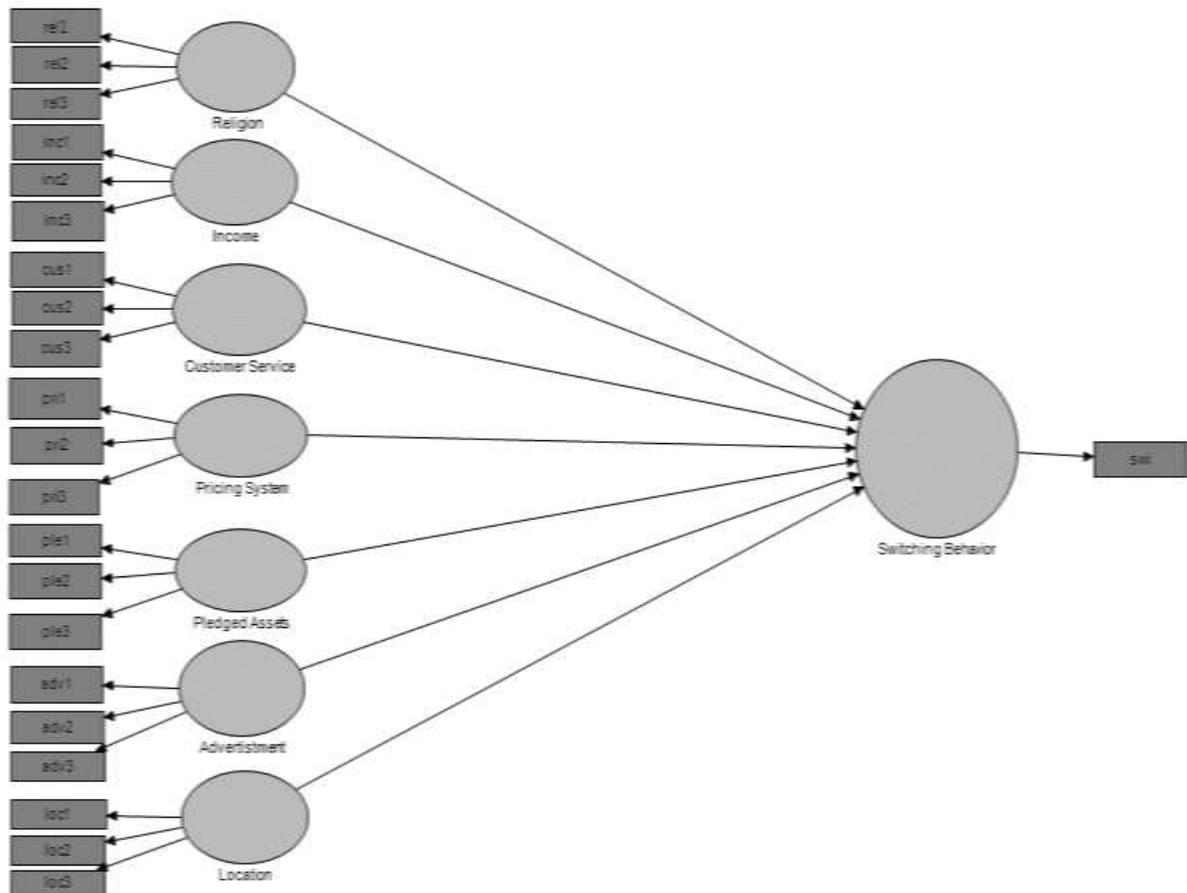
The Smart PLS Version 2.0 with two-step approach was adopted to analyze the data (Hair et al. 2013; Hair et al. 2014; Ringle, Wende and Will 2005). The first step concentrated on the evaluation of measurement model, and followed by the evaluation of structural model. The direction and significance of path coefficients were evaluated through bootstrap procedure.

### ***Measurement Model***

#### ***Convergent Validity***

First, convergent validity which refers to the extent of a measure correlates positively with other measures of the same construct was tested. It assessed the factor loadings, composite reliability and average variance extracted (Hair et al. 2014). Based on the results in table 2, all items were loaded on their respective construct and exceeded the recommended value of 0.6 (Chin et al. 1997). The composite reliability values (see table 2) which measures individual reliability and provide better estimate of variance shared by respective indicators, ranged from 0.850 to 0.974, which exceeded the recommended value of 0.7 (Hair et al. 2014). The average variance extracted values were in the range of 0.553 to 0.925 which indicates that the construct explains more than half of the variance of its indicators (Hair et al. 2014). Table 3 shows the results of convergent validity.

Figure 2: Research model



**Discriminant Validity**

Discriminant validity refers to what extent the latent construct is differs from other constructs. Discriminant validity can be assessed by comparing the squared correlations between the constructs and the variance extracted for a construct (Fornell and Larcker 1981). Referring to table 3, the squared correlations of each construct were less than square root of the average variance extracted by the indicators of measured constructs, indicating evidence on discriminant validity. In summary, the reflective measurement model of the present study had achieved the requirements in terms of convergent validity and discriminant validity.

**Structural model**

The structural model which refers to causal relationship among the constructs in the model was assessed by examining path coefficients and R<sup>2</sup> value (Hair et al. 2014). Based on the results in Table 4 and Figure 2, religion ( $\beta = 0.429, p < 0.01$ ), income ( $\beta = 0.197, p < 0.05$ ), pricing system ( $\beta = 0.131, p < 0.05$ ), pledged asset ( $\beta = 0.226, p < 0.01$ ), advertisement ( $\beta = 0.1333, p < 0.05$ ) and

location ( $\beta = -0.282, p < 0.01$ ) were significantly related to customers' switching behavior. This explains 35.8 percent of the variance, thus supporting H1, H2, H4, H5, H6 and H7 of the present study.

The remaining hypothesis was statistically insignificant. The path between customer service and customers' switching behavior was statistically insignificant ( $\beta = 0.053, p > 0.05$ ). Thus, H3 was not supported.

Table 2: Factor loadings and reliability

Items	Loadings <sup>a</sup>	CR	AVE	Cronbach $\alpha$
rel1	0.974	0.974	0.925	0.959
rel2	0.960			
rel3	0.951			
inc1	0.913	0.930	0.817	0.892
inc2	0.895			
inc3	0.903			
cus1	0.905	0.852	0.663	0.771
cus2	0.614			
cus3	0.890			
pri1	0.783	0.786	0.553	0.600
pri2	0.793			
pri3	0.645			
ple1	0.823	0.864	0.679	0.764
ple2	0.855			
ple3	0.793			
adv1	0.717	0.850	0.655	0.802
adv2	0.788			
adv3	0.912			
loc1	0.908	0.936	0.829	0.902
loc2	0.944			
loc3	0.877			

CR composite reliability, AVE average variance extracted

<sup>a</sup> Standardized loading

Table 3: Inter-construct correlation

Constructs	1	2	3	4	5	6	7	8
<b>1. Religion</b>	0.962							
<b>2. Income</b>	0.014	0.904						
<b>3. Customer service</b>	0.008	0.026	0.814					
<b>4. Pricing system</b>	0.001	0.166	0.067	0.744				
<b>5. Pledged asset</b>	0.017	0.070	0.127	0.163	0.824			
<b>6. Advertisement</b>	0.005	0.004	0.104	0.009	0.001	0.809		
<b>7. Location</b>	0.047	0.005	0.037	0.116	0.039	0.005	0.910	
<b>8. Switching behavior</b>	0.128	0.061	0.023	0.050	0.124	0.018	0.006	1

Note: Diagonals represent the square root of the AVE of the reflective scales while the off-diagonals represent the squared correlations between constructs

Table 4: Summary of the structural model

Path	Description	Hypothesis	Path coefficient	t value	Results
<b>REL → SWI</b>	Religion → Switching behavior	H1	0.429	7.950**	Supported
<b>INC → SWI</b>	Income → Switching behavior	H2	0.197	2.890**	Supported
<b>CUS → SWI</b>	Customer service → Switching behavior	H3	0.053	0.724	Not supported
<b>PRI → SWI</b>	Pricing system → Switching behavior	H4	0.131	2.056*	Supported
<b>PLE → SWI</b>	Pledged asset → Switching behavior	H5	0.226	3.356**	Supported
<b>ADV → SWI</b>	Advertisement → Switching behavior	H6	0.133	1.952*	Supported
<b>LOC → SWI</b>	Location → Switching behavior	H7	-0.282	3.500**	Supported

Note: t-values > 1.65\* (p < 0.05); t-values > 2.33\*\* (p < 0.01)

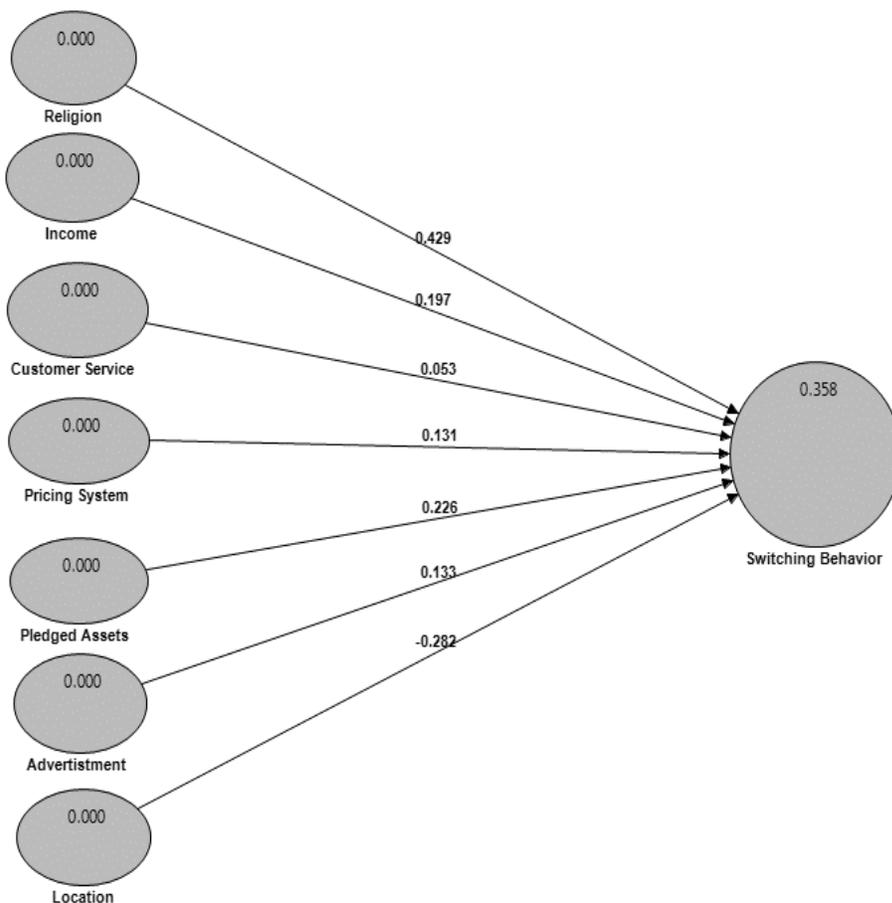


Figure 3: The structural model

### Discussion and Conclusion

In essence, religion does have impact on the preference of the *Ar-Rahn* shop in Klang Valley. Meanwhile, it is agreed that level of income also has a significant impact on the adoption of *Ar-Rahn* and this mainly involves the lower income group people. It cannot be denied that pricing is also perceived to be an important factor on the adoption of the Islamic pawning. Meantime, conditions imposed on pledged assets do have impact on the adoption of the Islamic pawnshop. Advertisement has impact on the adoption of *Ar-Rahn*. However, location is inversely correlated with switching behavior.

In essence, the results offer some unique understanding about the expectation of the customers. Firstly, as for the Islamic pawnshop, customers are not concerned about the services rather the operational aspects may become their main concerns, that include income, pricing and location as well. Interestingly, customers prefer *Ar-Rahn* shop located farer or probably away from their housing areas as they probably don't want to be seen by their neighbors. Undoubtedly, people have positive views towards the *Ar-Rahn* operations and as such, this could be another important source of micro financing not only for the Muslim community but also for all segments of communities.

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# Accounting Profitability and Firm Market Valuation: A Panel Data Analysis

**Mohd. Haseeb Ur Rahman\***

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia.*

*Email: haseebbaboo@yahoo.com*

**Mohd. Yussoff Ibrahim**

*Department of Management and Humanities, Universiti Teknologi PETRONAS, Malaysia.*

**Ayoib Che Ahmad<sup>3</sup>**

*School of Accountancy, University Utara Malaysia, Sintok, Kedah, Malaysia.*

*\*Corresponding Author*

## **Abstract**

**Purpose:** The relationship between accounting and market measures of firm financial performance is rarely investigated and produced incongruent results in the past. Therefore, this paper aims to investigate the relationship by examining the impact of profitability on firm market value. The profitability ratios like EPS, ROE, and ROA represent accounting while firm market signifies market measures of firm financial performance.

**Design/methodology/approach:** The study selected stratified random sample of 320 non-financial Malaysian listed companies for a period of five years from 2010-2014. The paper used pooled OLS with robust standard errors for 1600 observations of the panel data.

**Findings/ highlights:** The study found that ROE has significant while ROA has an insignificant positive association with firm market value. Moreover, the relationship between EPS and firm market value is negative and statistically significant.

**Practical implications:** The results of the study show that investors give value to the firms which maximize return on their equity. Based on these findings, investors, banks, insurance companies, financial institutions can deploy their economic resources.

**Originality/value:** The paper contributes to inconclusive limited literature. Also, the paper provides important insights for shareholders, management of the firms, and other stakeholders.

**Keywords:** Earning per Share, Return on Equity, Return on Assets, Firm Market Value, Malaysian Listed Companies.

**Keywords:** EPS, ROE, ROA, Firm Market Value

## **Introduction**

The conventional principal-agent relationship implies that the former cannot monitor the latter at the micro level but their resultant output at the end. However, as the firms operate for longer and infinite period of time, therefore, it is impossible for principals to wait until the end. The principals require gauging the efficiency of the firms and agents in short intervals. This gave birth to calculating and circulating firms' accounting profits for a period of one year in mid of the nineteenth century. Since then, the accounting profits or profitability ratios are simple and common tools to be used for evaluating the efficiency of the firm and management (Hax, 2003). The profitability ratios are not only analyzed by shareholders but all those stakeholders like creditors, banks, and financial analysts who have an interest in firms' financial health. The ratios explain firms' overall earnings' efficiency on the basis of sales, assets and capital employed. These also hint growth, success, risk and future prospects of the firm. Based on this explanation, the question arises whether firms' accounting measures or profitability ratios have any significant relation to firm market value as shareholders are interested in the maximization of their wealth reflected by an increase in firm market value (Baker and Anderson, 2010; Irungu, 2007). The arguments and findings regarding the relationship between accounting and market measures are mixed and incongruent. Some researchers argue that as accounting measures represent short while market measures represent long-term firm financial performance; thus, there is no relation. Others argue that shareholders never believe in the continuity of firms' current financial performance. They assume that firm's good or poor financial performance will change soon in future. Therefore, there is an inverse relation between firms' current accounting measures or profitability ratios and firm market value (Chakravarthy, 1986; Combs, Crook, and Shook, 2005; Keats, 1988; Lama, Tibbits, and Puttee, 2012).

However, in contrast, it is argued that if the current financial performance of a firm is good, the shareholders and market expect the same or even better performance in future and vice versa. Similarly, shareholders rank firms and assign them value on the basis of their current financial performance. Therefore, there is a significant positive association between firms' accounting measures or profitability ratios and its market value. The signaling theory also endorses the positive association between firm accounting and market measures by postulating that firms' better financial performance attracts investors which increase firm market value (Baker and Anderson, 2010; Modigliani, 1980; Vishnani and Shah, 2008). Based on these contrasting arguments, this paper further investigates the relationship between accounting and market measures of firm financial performance. The paper selected EPS, ROE, and ROA as accounting measures in relation to firm market value representing market measures of firm financial performance. The paper used pooled OLS regression for investigating the relationship in a sample of 320 companies listed on Bursa Malaysia for 5 years from 2010 to 2014. Rest of the paper is organized as the following two sections present overview of the previous literature and development of hypotheses respectively. The fourth section of this paper discusses selection and size of sample, control variables and econometric modeling of the study in research design. The fifth and sixth sections show univariate and multivariate analyses and their interpretations respectively. The last section deals with conclusion and directions for future research in the area.

**Objective of the Study**

This study aims to investigate the nature of the relationship between accounting and market measures of firm financial performance by examining the impact of profitability ratios on the market value of Malaysian non-financial listed companies.

**Literature Review**

The accounting measures or profitability ratios represent firm financial performance are simple and easily understood. Being audited and based on facts and figures, these are reliable and thus, widely used by shareholders and other stakeholders. In contrast, market measures are based on shareholders' expectations and projections rather than actual performance (Aliabadi and Dorestani, 2013; Combs et al., 2005; Hoskisson, Hitt, Wan, and Yiu, 1999). The proponents of market measures argue that accounting measures are based on historical book values and thus unable to capture a true picture of firms' financial health. The peculiarities of accounting systems do not allow accounting measures to account for current market trend which affects their validity and applicability (Shin-Ping and Tsung-Hsien, 2009). The ignorance of inflation, relying on historical costs, differentiation between capital and revenue expenditures and using different methods for calculating depreciation and inventory are those other issues which affect the accuracy and reliability of accounting measures (Aliabadi and Dorestani, 2013; Chakravarhy, 1986). Therefore, market measures are preferred on account of considering all factors and information which may affect firm market value (Bromiley, 1999; Lubatkin and Shrieves, 1986; Shin-Ping and Tsung-Hsien, 2009).

In the start of management research, the researchers mostly focused on the use of accounting measures or profitability ratios like EPS, ROE, and ROA for measuring the efficiency of management. However, after the evolution of finance theories and shareholders' activism in the 1990s, the use of market measures became popular after their introduction in 1980s (Hoskisson et al., 1999). Subsequently, the use of market measures in finance research diverted the attention of academia towards its relation with accounting measures. However, the arguments and findings in this regard are also mixed and inconclusive. Some studies negate (Chakravarhy, 1986; Combs et al., 2005; Keats, 1988; Lama et al., 2012) while others evidence the relationship by documenting positive (Baker and Anderson, 2010; Modigliani, 1980; Vishnani and Shah, 2008) or negative association between accounting and market measures of firm financial performance (Chan, 1988; Zarowin, 1989). The proponents of no relationship argue that accounting measures represent firm financial performance in short while market measures represent investors' expectations in the long run. As firms' objectives in the short and long run are contradictory, therefore, there is no relationship between accounting and market measures of firm financial performance. Moreover, accounting measures are based on historical costs while market measures account for current trend and information in the market (Chakravarhy, 1986; Keats, 1988). Therefore, due to the difference in calculation methods, there is no relation between accounting and market measures (Combs et al., 2005). Firm market value is determined by investors' perception and market assessment instead of managements' ability (Lama et al., 2012). Thus, firms might be under or overvalued particularly in an imperfect and inefficient market which indicates no relationship between the two measures

(Aliabadi and Dorestani, 2013). Some researchers argue investors do not believe that firms current performance whether good or poor is long lasting. Firm performance changes soon in future and thus, there is a negative relation between accounting and market measures of firm financial performance (Chan, 1988; Zarowin, 1989).

In contrast, it is argued that despite different methods of computations, accounting and market measures are strongly correlated (Khanna and Zyla, 2010; MacNeil and Li, 2006; Rowe and Morrow, 1999). According to signaling theory, accounting measures signal important financial information to the outsiders which affect firms' market value (Vishnani and Shah, 2008). Similarly, agency theory postulates that investors are interested in the maximization of their wealth (Baker and Anderson, 2010; Rahman, Ibrahim, and Ahmad, 2015a, 2015b). Therefore, better financial performance and profitability of the firms attract investors which increase firm market value by increasing share market price (Khanna and Zyla, 2010; MacNeil and Li, 2006). Share market price which is an influential factor in the determination of firm market value accounts for all information that might affect firm reputation in the market (Sharma, 2011; Shin-Ping and Tsung-Hsien, 2009). The assumption of "market efficiency" implies that market translates any new information in share market price which determines firms' true market value (Bromiley, 1999; Fama and French, 1992, 1995; Gentry and Shen, 2010). Many empirical studies endorse these theoretical postulations by documenting that accounting information regarding firms' better financial performance increases firm market value (Aliabadi and Dorestani, 2013; Eritmur, Livnat, and Martikainen, 2003; Khanna and Zyla, 2010; MacNeil and Li, 2006). Firms' current or previous financial performance help projecting its efficiency in future which determines the firm market value (Chan, Jegadeesh, and Lakonishok, 1996; Foster, Olsen, and Shevlin, 1984; Hoskisson et al., 1999; Shin-Ping and Tsung-Hsien, 2009). It is evidenced by the significant positive association between accounting (ROA, ROE, ROI and Return on Sales) and market measures (market-to-book value ratio and overall market return) (Gentry and Shen, 2010). Modigliani, (1980) endorsed these findings by arguing that earning power of firms' assets determines its market value.

### **Hypotheses Development**

Based on inconclusive literature as discussed in the previous section, there is a dearth of further research to investigate the nature of the relationship between accounting and market measures of firm financial performance. To probe the matter, this paper investigates the relationship between profitability ratios and firm market value by establishing the following hypotheses on the basis of signaling theory.

- H1: Firm accounting measure of financial performance (EPS) has a positive relation with firm market value.
- H2: Firm accounting measure of financial performance (ROE) has a positive relation with firm market value.
- H3: Firm accounting measure of financial performance (ROA) has a positive relation with firm market value.

### **Research Design**

***Sample selection and data collection***

The paper selected a stratified sample of 320 non-financial listed companies on Bursa Malaysia. The sample represents companies from all sectors except banking and insurance. Financial ratios of EPS, ROE, ROA, firm size and market value of the sample companies extracted from DataStream for 5 years i.e. from 2010 to 2014. The paper employed pooled OLS for panel data of the study composed of a total of 1600 observations.

***Control Variables***

Following previous literature, many studies in the area control the effect of firm size. It is because investors have high confidence in large as compared to small firms. Therefore, this study controls the potential effect of firm size (Sembiring 2008 as cited in (Nur’ainy, Nurcahyo, Kurniasih, and Sugiharti, 2013). In addition, based on a significant positive association with firm market value, the study also controls for corporate governance reforms (MCCG 2012) (Baker and Anderson, 2010; Bhagat and Bolton, 2009; Gompers, Ishii, and Metrick, 2003; Lama, 2013; Vo and Phan, 2013; Young, 2003).

***Econometric Modeling***

Finally, after including control variables, the following is the econometric model of the study.

$$MV_{it} = \beta_0 + \beta_1 EPS_{it} + \beta_2 ROE_{it} + \beta_3 ROA_{it} + \beta_4 Fsiz + \beta_5 Cod + \epsilon_{it} \dots \dots \dots \text{Model}$$

Where;

MV = Market Value

EPS = Earnings per Share

ROE = Returns on Equity

ROA = Return on the Assets

Fsiz = Firm size

Cod = MCCG 2012

$\epsilon$  = Error term

***Measurement of Variables***

**Variables Measurement**

Firm market value (MV) = Share market price multiplied by total number of outstanding shares

Earnings per share (EPS) = Net income / Number of shares outstanding

Return on equity (ROE) = Net income / Average shareholders' equity

Return on Assets (ROA) = Operating income/ total assets

Firm size (Fsiz) = Log of total assets

CG reforms = 1 after MCCG 2012 and 0 otherwise

Figure. 1. Measurement of Variable

**Univariate Analysis**

This section reports univariate analyses i.e. descriptive statistics and Person’s correlation matrix of the study. Descriptive statistics describe nature of the data by explaining minimum and

maximum limits along with mean values of the variables. The correlation matrix shows the simple correlation among all variables of the study.

**Descriptive Statistics**

Table 1 Descriptive Statistics

Variables	Obs.	Min	Max	Mean	St. Dev.	Frequency	%
MV	1600	0.89	4.73	2.353	0.71104	-	-
EPS	1600	0.00	3.0	0.150	0.2400	-	-
ROE	1600	-1.85	3.70	0.065	0.21854	-	-
ROA	1600	-1.09	6.34	0.055	0.23732	-	-
Fsiz	1600	4.07	7.36	5.590	0.58886	-	-
Cod	1600	-	-	-	-	640	40
		-	-	-	-	960	60

Table 1 shows descriptive statistics for firm market value (MV), earning per share (EPS), return on equity (ROE), return on assets (ROA), firm size (Fsiz) and corporate governance reforms (cod). The log of firm market value shows a mean of 2.353 with a minimum 0.89 and maximum 4.73. Similarly, EPS has an average value of 0.15 with a minimum 0.00 and maximum 3.00. The mean for ROE is 0.065 in the range from -1.85 to 3.70. The statistics for ROA shows an average of 0.055 with minimum -1.09 and maximum 6.34. The negative ROE means the inclusion of firms in the sample which sustained losses during the period of study. The negative ROA indicates that firms pouring too many resources for yielding less return on assets. The control variable of firm size measured by the log of total assets shows an average of 5.590. The other control variable i.e. CG reforms show enactment of the code for the last three years after introducing MCCG 2012 in March 2012.

**Pearson Correlation Matrix**

Table 2 Pearson Correlation Matrix

Variables	MV	EPS	ROE	ROA	Fsiz	Cod
MV	1					
EPS	0.070**	1				
ROE	0.103**	0.224**	1			
ROA	0.026	0.150**	0.326**	1		
Fsiz	0.248**	0.371**	0.236**	0.046	1	
Cod	0.045	0.029	-0.017	-0.021	0.051*	1

\*\*\*, \*\*, \*. Correlation is significant at the 0.10, 0.01, 0.05 level (2-tailed) respectively.

The Pearson’s correlation matrix reported in Table 2 shows significant association among most of the variables. None of the correlation is above the threshold (0.8) and thus, there is no issue of multicollinearity (Kumari, 2008). The table shows a significant positive correlation of EPS and ROE with firm market value (MV). It implies that profitability has a significant role in the determination of firm market value. However, ROA has an insignificant positive relation with a

firm market value which explains inefficiency of management in generating a significant return on assets to increase firm market value. The significant positive correlation between firms' size as a control variable with firm market value indicates that market gives weight to the value of assets in the valuation of the firms. The corporate governance reforms (MCCG 2012) shows insignificant positive correlation with firm market value. This might be due to an early investigation of the relationship.

### **Multiple Regression**

Before running the regression, the data diagnosed for heteroscedasticity, endogeneity, and serial correlation. The P value  $< 0.05$  of Breusch-Pagan/Cook-Weisberg Test for heteroscedasticity indicates equal variance or no heteroscedasticity and vice versa. The results ( $\chi^2(1) = 19.16$  and Prob.  $> \chi^2 = 0.000$ ) of the test confirm no equal variance and thus, heteroscedasticity in the data as reported in Table 3. Similarly, the P value  $< 0.05$  for each of Durbin and Wu-Hausman statistics indicate no endogeneity. The significance value of 0.848 and 0.848 for Durbin (score)  $\chi^2(1) = 0.037$  and Wu-Hausman  $F(1, 1593)$  confirm no endogeneity (Table 3). The Wooldridge test for autocorrelation has an  $F(1, 319) = 342.915$ , and Prob.  $> F = 0.05$ . The P value  $< 0.05$  of the test indicates that error terms of two time periods are correlated and thus there is a serial correlation as reported in Table 3 (Baltagi, 2005; Mehmood and Mustafa, 2014; Wooldridge, 2002). To investigate cross-sectional dependence, Pesaran test employed. The result of the test 8.221, is significant (Pr. = 0.000) that evidence cross-sectional dependence. Keeping in view the results of diagnostics tests, this paper selected Pooled OLS with robust standard errors for estimation (Hoechle, 2007).

Table 3 shows the regression results for the relationship between accounting and market measures of firm financial performance. The results show that EPS has significant negative relation with firm market value. The result is interesting as increasing in earning per share has an inverse relation with firm market value. It might have two different plausible explanations. First, the investors and market do not rely much on the value of EPS due to the probability of its manipulation by management. Firms might increase the figure of EPS by decreasing or buying back the number outstanding shares. Second, investors have their expectations regarding the amount of EPS. Therefore, any value of EPS below their expectations decreases the confidence of investors. It negatively affects the behavior of investors that decreases the firm market value by decreasing share market price (Emeni and Ogbulu, 2015). The findings are consistent with Nazir, Rakha, and Nawaz, (2012) who found a significant negative relation between EPS and the firm market value measured by market capitalization. Based on this, the negative findings which reject first hypothesis H1 of this study is justified.

Table 3: Regression Results

Variables	MV
EPS	-0.103*** (0.037)
ROE	0.170*** (0.032)
ROA	0.011 (0.080)
Firm Size (Fsiz)	0.298*** (0.015)
Cod (MCCG 2012)	0.051*** (0.007)
Constant	0.662*** (0.077)
Observations (320 * 5 years)	1600
R Square	6.58%
chi2(1)	19.16
Prob. > chi2	(0.000)
DW-Statistics	1.97
Durbin (score) chi2 (1)	0.037
p-value	0.8477
Wu-Hausman F (1,1593)	0.037
p-value	0.848
Auto Correlation F (1, 319)	342.915
Prob. > F	0.000
Pesaran's cross section independence	8.221
Pr.	0.000

Standard errors in parentheses, \*\*\* p < 0.01, \*\* p < 0.05, \*p < 0.10

The findings reported in Table 3 shows the significant positive relation between ROE and firm market value. The findings indicate that efficient utilization of shareholders' equity ensures better returns to shareholders. It enhances the confidence of shareholders which increases firm market value. Unlike EPS, the ROE is more powerful and reliable as both of values i.e. net income and shareholders' equity for its calculation comes from the income statement and balance sheet respectively. The findings which support H2 of this paper are consistent with Gentry and Shen, (2010).

ROA explains operating and financial efficiency of the firm. It shows the ability of management to create economic benefits on firms' assets for shareholders. Therefore, the insignificant relationship between ROA and firm market value (Table 3) indicates that investors have no confidence in the firms' ability to generate a good return on assets with low costs. The findings

indicate that firms are unable to mark any significance in this regard. The results which do not support H3 are consistent with many previous studies (Gill and Obradovich, 2012; Hamid, Akash, Asghar, and Ahmad, 2011; Inyama, 2015).

The control variable of firm size shows a significant positive relationship with firm market value. It indicates that market assigns a value to the firm on the basis of its assets. The positive impact of MCG 2012 indicates that the code has improved CG practices that enhanced firm market value.

### **Conclusion and Recommendation**

The findings of this paper support H2 and reject H1 and H3 respectively. The mixed nature of findings shows that accounting measure of EPS has a significant negative while ROA has an insignificant positive relationship with firm market value. Only ROE has a significant positive relation with firm market value. The paper suggests including further accounting ratios in the studies carried out in future. The paper also proposes to increase the time span of investigation to ten years. Moreover, the paper proposes to consider research and development expenditure and slack resources of the firms as control variables in the studies conducted in future.

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# Innovation Diffusion: Farmers' Perception towards New Green Fertilizer in Granary Paddy Fields in Malaysia

**Shahrina Md Nordin\***

Center of Social and Innovation  
Universiti Teknologi PETRONAS  
Seri Iskandar, Perak, Malaysia

*Email: shahrina\_mnordin@petronas.com.my*

**Ammar Redza**

Center of Social and Innovation  
Universiti Teknologi PETRONAS  
Seri Iskandar, Perak, Malaysia  
Email: redzarizal@yahoo.com

**Mohd Shamsuri Md Saad**

*Universiti Teknikal Malaysia Melaka, Malaysia*

Email: shamsuri@utem.edu.my

*\*Corresponding author*

## **Abstract**

**Purpose:** The study conducted to investigate the challenges that are faced in innovation diffusion effort of new green technology specifically on green urea

**Design/methodology/approach:** The study adopted a quantitative method employing survey technique

**Findings:** The paper will discuss the research findings that provide an insight into farmers' readiness to accept new green technology fertilizer, the extent of involvement in using green fertilizer, their perception on new fertilizer management and the role of agricultural extension officers.

**Originality/value:** The paper shall highlight areas for further improvement of strategic communication strategies for new green technology leading to effective diffusion of innovation for adoption.

**Keywords:** Innovation diffusion; communication strategy; green technology; fertilizer; agriculture

**Paper type:** Research paper

## **Introduction**

Environmental concerns have encouraged the development of new green technology in various industries worldwide. In 2012, according to the International Energy Statistic, more than 32 billion tons of CO<sub>2</sub> were released throughout the world (Anon., n.d.). World's efforts are geared

towards reducing CO<sub>2</sub> released activities, technology shift to green innovation and adapting to the climate change. Despite the extensive new green technology being developed, Malaysia still lags behind in terms of implementing these technologies particularly in agriculture industry.

Some of the local farmers in Malaysia are still practicing conventional fertilizer technology. The continuous application of conventional fertilizer damages the soil in a long run and increases greenhouse gases release. Chemical based fertilizer instils toxic elements into fruits and vegetables. Different from conventional fertilizer, green fertilizer is produced through economical processing method which provides sufficient nutrient without degrading soil mineral, and entails lenient management while boosting crop productivity without diminishing its quality. The farmers are however unaware of green fertilizer technology advantages in comparison to the conventional plant fertilizer. These farmers seem to have low concern towards the environment preservation efforts (Ahmad, et al., 2011).

In response to the arising crisis, government has put forth various effort to reduce the technology barriers in the farming community. These include the establishment of Malaysian Agriculture Research & Development (MARDI), Malaysian Cocoa Board (MCB), Rubber Research Institute of Malaysia (RRIM) and Malaysian Palm Oil Board (MPOB). The main idea of these agencies is to elevate the living standard of farmers for a better quality life. Consequently, increases productivity and lift up agriculture sector economy at par with other industries through development and adoption of new agricultural technologies. However, the struggles of these agencies to develop new technologies resulting only slight technology adoption in reality.

On the other hand, Global Food Crisis in 2007/08 had triggered Malaysia to increase the production of its own food supplies through the establishment of paddy granaries. The primary initial step was to increase the production of the country's staple food which is rice. An increase of paddy rice field is not an effective method due to additional land is required for the plantation hence more labor to cover the entire paddy field. Instead, government initiate the opportunity to develop agriculture through innovation of green fertilizer technology. The introduced new fertilizer technology alone however does not increase the paddy rice production as anticipated. This is because the crop productivity does not only affect by improvise fertilizer but also effectiveness of communication strategy to reach out to the farmers towards innovation adoption.

Effort towards successful diffusion innovation of new green technology is however not an easy task. There is a need for an effective communication strategy to bridge the farmers' existing knowledge and the new technology. The study reported in this paper hence investigated the challenges faced in diffusing information and disseminate knowledge about a new innovation of green fertilizer technology. The study was conducted particularly in the context of Malaysian paddy farming society. A comparative analysis between selected paddy granaries had been conducted to obtain an insight in understanding the paddy farmers' perception towards new green fertilizer in Malaysia. This paper shall highlight the findings that reflect the farmers' knowledge, their perception and readiness towards new green fertilizer adoption, the different roles of the relevant agencies and the extension officers.

### **Literature Review**

Agriculture sector has remained to play a major role in Malaysian economy till today. Since the global economic crisis in 1997, the government has been placing strategic intervention initiatives to encourage the development of agriculture sector to reduce expenses in the food import. Department of Statistics Malaysia (DOSM) recorded that agriculture sector has maintained its momentum of the annual average growth rate at 2.4% from 2010 to 2015 with support of the modernization of the agro-food and industrial commodity subsector. Further increase of productivity by 2020 with annual growth rate at 3.5% is expected through innovation

as well as research and development of agro-food sector efforts (Anon., n.d.). Growth in the green effort does not only increase productivity but is also aligned with the 11th Malaysia Plan (RMK-11) which is to ensure minimal impact on nature. The development of green fertilizer therefore is one of the ways forward for economic growth in the agriculture sector since quality and quantity of the agro-based product relies almost completely on the fertilizer and nutrient consumption.

The vital nutrient for healthy plant consists of nitrogen, phosphorus and potassium (NPK) especially for paddy. Each stage of the cultivation process requires different amount of nutrients. Conventional fertilizer such as urea, ammonium sulphate, ammonium nitrate, phosphate, superphosphate and potassium chloride are deemed sufficient for productive crop. However, issues pertaining soil degradation, chemical pollution and crops contamination had driven the farmers to find alternatives. Recent organic fertilizer, for example Indigenous Micro-organisms (IMO) technology, decreases the cost of production by up to 30% compared to conventional technology (Zakaria, 2006). In fact, latest research and development of new biological fertilizer proves to be cost effective, enhancing soil quality, significant CO<sub>2</sub> emission reduction and increase in crops productivity compared to chemical fertilizer (Vaneckhaute, et al., 2013). Present green technology available in market includes soil enhancers in microbial inoculant form and effective microbes (EM). However, these green fertilizer technologies are still not widely adopted by the farmers potentially caused by ineffective communication strategy for innovation diffusion.

#### *Diffusion of Innovation Theory*

The most cited Diffusion of Innovation (DOI) theory is introduced by Everett Rogers in 1962. According to Rogers in third edition of Diffusion of Innovation, there are four factors that influence the diffusivity of the innovation: “*Diffusion is the process by which (1) an innovation (2) is communicated through certain channels (3) over time (4) among the members of a social system*” (Rogers, 1983). First, the innovation, new idea or technology must be beneficial and provide most advantages than the conventional system that is already adopted by the community or organization. These new ideas must be superior in term of either productivity, quality, lenient management, accessibility or good environmental impact. Second, strategic communication is required to disseminate and broadcast the knowledge of new technology either through mass-media channel or interpersonal channel. Good communication is defined as the exchanges of information between two individuals or organizations to reach mutual understanding which later encourage positive behavioral and social change. Third, time is an important factor for innovation-diffusion since an individual or organization will go through time-ordered series of knowledge: persuasion, decision, implementation and confirmation stages (Rogers, 1983). In decision making phase, information-seeking on the innovation will determine either the idea is adopted or rejected. If the decision phase result in adoption, the end result will be determined in confirmation stage after the implementation phase which is either continuation or discontinuance of the adopted technologies. Lastly, social system has its own norms in their structure. Very often the norms are the result of leader behavioral attitude which are later exemplified by the others in the system. Hence, the leadership in the social system will influence other individuals’ attitude towards the new technology in achieving the desired goal. The individual who attempt to influence innovation-decision of client is known as change agent. Exemplary displayed and aide by the change agent without a doubt will increase the adoption rate of the new technology.

#### *Initiatives and Communication Strategy*

Continuous efforts implemented by the government towards adoption of green technology can be perceived through financial aid, providing leading edge machinery, and agriculture educational institution. Incentives towards development of agriculture sector are through the enactment of policy and construction of development plan for technology transfer in farmers’

community. Skim Organik Malaysia (SOM), Malaysian Good Agriculture Practices (myGAP) and Rice Check are some of the recent implementation programme introduced by Department of Agriculture (DOA) and Ministry of Agriculture and Agro-Based Industry (MOA). The underlying idea of the scheme and practice is to encourage green technology and healthy practices in agricultural activities for environmental preservation as well as farmers' safety. Moreover, there are fertilizer subsidies to promote the application of new green fertilizer technology such as SIPP, SBPKP and DJBMN (Anon., n.d.). Suppliers are also encouraged by the government to market fertilizer in smaller packages so that farmers could afford the fertilizer in less quantities. Another government's grand initiative includes establishment of National Agricultural Skills Training Program which provides formal education through learning institution such as Farming Institute in several regions (IPS, IPKL, IPBL, etc.) and MADA Rice Training Centre (MRTC) for the future generation (Anon., n.d.).

Communication channels if optimized wisely offer a huge potential in dissemination of knowledge. The current communication channels used by the government include broadcast media, print media and digital media. Studies show that farmers' preference in the usage of communication channels are in the following order (from most favor to less favor sequence): television, newspaper, radio, journal and internet (Hassan, et al., 2010). Hence, various TV programmes, advertisements, radio broadcast programmes, articles, brochures and websites concerning latest knowledge of green technology are attempted. Internet however came at the fifth most popular media in the farming community. Despite the lack of preference, effort on communications via internet has been vast.

As the world is moving toward digitized realm, various organizations and government bodies perceive internet as an effective way to communicate with the mass. It is believed that the latest knowledge on green fertilizer technology will be at one's fingertip since smartphones, computers, tablets and other networking devices are widely used even in the rural regions. Among the farming entrepreneurs, more than 90% use phone, 54% for computers, and 5.6% own PDA (al, 2009). As part of the government's initiative on rural development, '1 Malaysia Wireless Village Internet' has implemented. According to Omar (Omar, et al., 2016), survey shows more than 70% of the village resident now can benefit from this move.

Another effort to reach out to the farmers is through the intensive extension officer programme. With the establishment of the Center for Extension, Entrepreneurship and Professional Development (APEEC) of Universiti Putra Malaysia (UPM), Malaysia had hosted International Conference on Agricultural Extension (AGREX'10) in 2010. The event emphasized the importance of extension officers in Malaysia.

The process of dissemination, training, and provision of resources and incentives is typically centrally managed and in the case of agriculture in Malaysia, the processes are managed by the Ministry of Agriculture through its appointed Extension Officers. The DOA extension service has three main objectives which are: to increase farm productivity through effective technology transfer and research findings; to effect attitudinal change amongst farmers to be responsive to new technology and participate actively in agricultural development; and to increase the contribution of the agricultural sector to national economy through the promotion and development of specific crops (A.F, n.d.). The extension programs include technology transfer activities from research activities to extension agencies, farmers and investors. Oyaro (Oyaro, 2008) asserts that the extension officers are the connector between the researchers in Research and Development (R&D) and the farmers. On a similar ground, Ramaru et al (Ramaru, et al., 2009) argue that the extension officers will be able to be effective if sufficient exposure to scientific knowledge, new products and technology development are given.

The role of extension officers is pertinent to help the farmers especially in technology transfer supporting services including fertilizer application. Sufficient information needs to be relayed

to the farmers on the importance of selecting high quality fertilizer for higher yield and to maintain the nutrients in the soil for a longer period of time. The extension officers however need to realize their important role in helping the farmers make decisions. Khalil et al (Khalil, et al., 2008), for example emphasize on the importance of leadership, competencies and commitment that extension officers need to poses. Their findings suggest that the Ministry of Agriculture should incorporate leadership characteristics besides competencies to increase organizational commitment and at the same time farmers' productivity. Continuous assessments need to be conducted to gauge the impact of agriculture extension on production and adoption rate of new technology disseminated by the extension officers (Dinar & Keynan, 1998). Statistics demonstrate the total extension staff in Malaysia as of 2010 is 1,355 which more than 70% of the total are extension staff on field-level (Qamar & Swanson, 2013).

Farmers are usually informed through mass media but they find information on technology as hard to understand. This could be due to their level of formal education received. Research shows that 47% of the farmers in Selangor have only basic primary education; 43% with secondary education qualification while only 4% of the farmers have tertiary education and 3.5% have no formal basic education (Alam, et al., 2010).

### **Methodology**

The study had adopted a quantitative approach through survey. This paper reports a part of the overall research findings that was conducted in three major granary areas: MADA, KADA and IADA Barat Laut Selangor. Hence this paper shall only present descriptive findings of the study. The sample for this research was gathered using Homogenous Sampling Scheme with Convenient Sampling as it technique. Sekaran stated that convenient sampling is appropriate for studies where getting respondents is difficult due to factors such as regional geophysical investigations and responses. The list of farmers was supplied by the management board of MADA and KADA.

The distribution of respondents for this study are as per below 462 for MADA, 202 for KADA and 144 for IADA Barat Laut. A questionnaire was developed as the data collection research instrument. The dimensions used in this study were adapted from (Rizal & Nordin 2013). The following are the dimensions that were used in this study: Knowledge and Information of Farmers; The role and Involvement Farmers in Innovation; Innovation Management and the Role of Agricultural Extension Officer

Findings from this study were analyzed using Statistical Package of Social Science (SPSS) version 16.0 for descriptive analysis of each of the dimensions in the questionnaire. The analysis had also indicated the internal consistency of the items through computation of Cronbach's Alpha. Cronbach's Alpha allows the estimation of reliability for each dimension in quantitative means. The satisfactory reliability measurement is between 0.6 and 1 (Sekaran, 2006). Any items in the dimension that shows less than 0.6 or more than 1 is considered inconsistent or the respondent does not fully understand the question being asked. Descriptive analysis was also conducted to compute the average mean score for each dimension.

### **Result and Discussion**

The questionnaire consists of four dimensions which are; *knowledge and information of paddy farmers, the role and involvement of paddy farmers, innovation management and the role of agricultural extension officer*. Based on Table I, the highest reliability coefficient comes from dimension of *role of agriculture extension officer* with 0.85, followed by *the role and involvement of farmers* (0.77). Dimension of *knowledge and information of farmers* has the

same score of reliability as fertilizer *innovation management* which is at 0.74. The findings show that all the instruments used for this study were internally consistent. The dimensions, number of items and reliability for each dimension are summarized in Table 1.

Table 1: Reliability Coefficient of Dimensions

Dimensions	No. of Items	Reliability
Knowledge and Information of Farmers (ca1-10)	10	0.74
The role and involvement of Farmers (cc1-6)	6	0.77
Innovation Management (cd1-9)	9	0.74
The role of Agricultural Extension Officer (ce1-13) no c6	12	0.85

The descriptive analysis for the first dimension reveals that the farmers in KADA has the highest mean score for knowledge and information on innovation for fertilizer (3.69). The mean score for IADA is also considerably high (3.64) but is only moderate in MADA (3.46). The paddy farmers in MADA seem to not have gained ample knowledge pertaining to the advantages, uses and accessibility of the new fertilizer technology especially on the new types of fertilizer in the market (2.42). The farmers in MADA seem to prefer not to share their experience on fertilizer usage with other farmers (2.74). On a contrary the farmers in MADA indicate that they are quite heavily influenced by their friends on the use of fertilizer in their paddy field (3.87). Such influence is also found in IADA granary area, as friends have substantial influencing factor (3.83) on the usage of fertilizer but they are also not keen to share their experience with others (3.11).

One of the lowest mean score for KADA is on obtaining information about new fertilizer from extension officers (3.34). As mentioned in the earlier part of this paper extension officers is one of the communication channels that is important in disseminating information (QAMAR & SWANSON, 2013). They are also not well informed about the latest fertilizer technology products (3.24). This calls for a more intensive effort on innovation diffusion for technology dissemination.

Table 2 illustrates the details of the mean scores for the knowledge and information obtained by farmers on MADA, KADA and IADA.

Table 2: Dimension 1 - Farmers' knowledge and information on new fertilizer technology

Dimensions	Mean		
	MADA	KADA	IADA
I have heard about the various types of fertilizer new products	3.69	4.02	3.71
I have been told by extension officers about new fertilizer for paddy planting	3.84	3.34	3.56
I have always been informed about the latest technology related to fertilizer products	3.58	3.24	3.67
I hope I will get more information on the latest development about fertilizers technology	3.74	3.98	3.96
I have a good knowledge on the types of fertilizers that are suitable for paddy	3.53	3.79	3.42
I am knowledgeable and aware of the appropriate amount of fertilizer	3.57	3.78	3.71
I receive enough information about the suitable types of fertilizer for paddy	3.62	3.39	3.53
I am influenced by my friends in deciding on the way of using fertilizer	3.87	3.91	3.83
I obtain a good information about the new types of fertilizer in the market	2.42	3.48	3.86
I always share my experience about fertilizer effectiveness with my friends	2.74	4.00	3.11
<b>Total mean score</b>	<b>3.46</b>	<b>3.69</b>	<b>3.64</b>

Table 3 illustrates the results of the second dimension which is on the role and involvement of farmers in fertilizer innovation. The findings reveal that the total mean score for MADA, KADA and IADA are 3.61, 3.40 and 3.69 respectively. Majority of the respondents perceive that have adequate opportunity to provide feedback or their views based on their experience to the government agencies (MADA=4.05, KADA=4.32 and IADA=4.21) for betterment in paddy planting.

Hardly have the chance except IADA, MADA and KADA demonstrate infrequent of fertilizer manufacturing companies to seek farmer's opinion (3.40, 3.22 and 3.80). However, the farmers from MADA, KADA and IADA agree that agricultural institutes should seek the farmer's thought in order to boost the effectiveness of fertilizer (3.63, 3.82 and 3.79). Another factor that brings the total mean score of KADA lower than the rest of the group is because the farmers rarely shared their experience on fertilizer and its effectiveness with the agricultural institutions. Perhaps the words from the farmers could not reach the operators or the individual has low attitude towards innovation of fertilizer efforts. Overall, two way communication is necessary for the fertilizer innovation adoption among paddy farmers. This way, the institutions or manufacturing companies could optimize and further boost the effectiveness of paddy fertilizer according to feedback obtained from the farmers on field.

Table 3: Dimension 2 - The role and Involvement of farmers in fertilizer innovation

Dimensions	Mean		
	MADA	KADA	IADA
I am often asked by government agencies to provide advice on effective and appropriate fertilizer for paddy	4.05	4.32	4.21
Operators / fertilizer production companies often seek the opinion of the farmers in order to boost the effectiveness of fertilizer	4.11	4.29	4.22
Agricultural institutes and operators of fertilizer should seek the opinion of the farmers in order to boost the effectiveness of fertilizer	4.03	3.99	4.17
I frequently share my experiences on fertilizer use and effectiveness with the agricultural institutions	3.98	4.27	4.15
I have brilliant ideas to be conveyed to the relevant parties for the improvement of fertilizer	3.95	4.00	4.07
My experience able to improve research like fertilizer should be given the opportunity to express an opinion	3.95	3.91	4.01
<b>Total mean score</b>	<b>3.61</b>	<b>3.40</b>	<b>3.69</b>

Table 4 illustrates the findings of the innovation management of new fertilizer. The overall mean scores for MADA, KADA and IADA are 3.57, 3.33 and 3.63 respectively. The findings indicate moderate scores in their perception about innovation management. The respondents moderately believe that agricultural institutions encourage the farmers to use newly introduced fertilizers available in the market (MADA=3.77, MADA=3.46 and IADA=3.62).

The farmers feel that they do have to wait for instructions from the relevant institutions in the decision to use a new fertilizer products introduced in the market (MADA=3.66, KADA=2.86 and IADA=3.49). This reflects their good initiative and attitude towards new fertilizer. They generally do not have much problems in the use of new fertilizer products (MADA=3.29, KADA=3.07 and IADA=3.18)

However, the farmers in KADA strongly believe that structured program is essential to help better understanding of the innovation in new fertilizer usage (4.02). KADA farmers also feel that guidance from the government is insufficient for the adoption of innovations/new fertilizer products (3.27). They also do not get full satisfaction on the channels used to convey the latest information on fertilizer technology (3.45).

Table 4: Dimension 3 - Innovation management

Dimensions	Mean		
	MADA	KADA	IADA
Agricultural institutions encourage me to use the new fertilizers in the market.	3.77	3.46	3.62
I have to wait for instructions from the relevant institutions in the decision to use a new fertilizer products.	3.66	2.86	3.49
I am frequently encouraged to try out a new type of fertilizer.	3.61	3.42	3.94
I am satisfied with the approach undertaken by agriculture extension officers in providing exposure about new fertilizer.	3.88	3.33	3.93
I am given an incentive when using new fertilizer products.	3.46	3.12	3.74
I need a structured program to help to understand fertilizer innovation.	3.11	4.02	3.96
I think the guidance from the government is sufficient for the adoption of innovations/new fertilizer products.	3.59	3.27	3.28
Farmers have problems in the use of new fertilizer products.	3.29	3.07	3.18
Channels used to convey the latest information on fertilizer technology are effective.	3.78	3.45	3.54
<b>Total mean score</b>	<b>3.57</b>	<b>3.33</b>	<b>3.63</b>

The final dimension in the study is on the effectiveness of extension officers in dissemination of fertilizer innovation. The overall mean score for MADA, KADA and IADA are 3.70, 3.61 and 4.02 respectively, which are considerably high. The overall findings in this dimension indicate a degree of agreement on effectiveness of extension officers are important in innovation dissemination especially in IADA Barat Laut.

All respondents believe that the language used by the agriculture officer that is easy to understand (MADA=3.99, KADA=3.69 and IADA=4.03). They also believe that extension officers play an important role in influencing farmers to receive new innovation fertilizer products (MADA=3.99, KADA=3.78 and IADA=3.96). Extension officers can also help to improve farmers' skills in using a new fertilizer product (MADA=3.88, KADA=3.75 and IADA=4.19). However there is a need for the extension officers to improve on their communication in transferring knowledge about the new fertilizer innovation (MADA=2.54, KADA=3.51 and IADA=3.21). In addition, farmers particularly in MADA and KADA face difficulties in their discussion with agriculture officers about new fertilizer product (MADA=2.75, KADA=3.40).

Farmers particularly in IADA Barat Laut Selangor however believe that extension officers give good cooperation in the process of adopting a new fertilizer product (4.24) and providing ideas (4.13). Results are shown in Table 5.

Table 5: Dimension 4 - The effectiveness of extension officers in new fertilizer dissemination

Dimensions	Mean		
	MADA	KADA	IADA
Language used by extension officers is easy to understand.	3.99	3.69	4.03
Extension officers can influence farmers to receive a new fertilizer product.	3.99	3.78	3.96
Extension officers can improve the skills of farmers in using a new fertilizer product.	3.88	3.75	4.19
Extension officers can cooperate together with farmers in the process of adopting a new fertilizer product.	3.91	3.60	4.24
Extension officers can provide ideas in planning to use a new fertilizer product.	3.88	3.74	4.13
Extension officers can understand the needs and expectations of farmers.	3.81	3.58	4.08
Extension officers listen to problems faced by farmers in their effort to adopt the new fertilizer product.	3.83	3.74	4.01
Extension officers can assist to identify a new fertilizer product appropriate for farmers.	3.91	3.56	4.13
Extension officers can convince farmers in using a new fertilizer product.	3.94	3.59	4.11
Extension officers and farmers have a good communication.	3.91	3.45	4.01
Extension officers can discuss well about a new fertilizer product.	2.75	3.40	4.12
Extension officers chooses a good communication approach for knowledge transfer.	2.54	3.51	3.21
<b>Total mean score</b>	<b>3.70</b>	<b>3.61</b>	<b>4.02</b>

## Conclusion

The overall findings indicate a high level of openness amongst the farmers in accepting newly introduced innovations of fertilizer in cultivation of paddy. The farmers have made their own initiatives in seeking information on new technologies in fertilizer. There is however a lack of information provided to them by the official sources. Most of the information about new technology development or products would largely come from amongst the farmers themselves, informal networking, who are mostly active in soliciting information on their own. Slightly more than half of the respondents have attended relevant courses, seminars and trainings, however the hunger for more information and knowledge is evident in the findings indicating an area for improvement in the communications amongst the producers, regulators, government agencies and the farmers. The role of the extension officers needs to be fully utilized to disseminate knowledge and further strengthened as their function is crucial especially in transfer of technology. Extension services need to focus more on raising awareness and providing knowledge to the farmers on the choices they have and keeping themselves abreast with newly developed technologies. Manufacturers and distributors from the private sector should also play

a primary role in disseminating knowledge about new technologies and products in the fertilizer industry. A coordinated effort between the government extension officers and liaison officers from the manufacturing companies in providing extension services through communications, joint trainings and preparation of extension materials would be very beneficial. In the case of new technology development and diffusion of innovation, the attitude of the farmers shall not be an obstacle for technology adoption.

However, the communications in creating awareness and building knowledge could pose an obstacle as the system for social networking to channel the information needs further strengthening. More education programs should be conducted focusing on fertilizer usage, however alternative channels for knowledge dissemination with the farmers should also be further explored. Zhou (Penafort 2010) for example suggested technical training for fertilizer traders to disseminate information on fertilizer use to farmers. An efficient link between research, technology development and extension to the farmers is crucial in innovation diffusion. Farmers' experience must be channeled back to research and development. Future studies should also look into the overall process of innovation-decision in implementing innovations on the different stages of knowledge dissemination, persuasion communications, decision-making, implementation and confirmation of adoption. Another dimension to adoption of innovation that requires probing is the extent of willingness amongst the farmers to pay for high-end fertilizers. Financial liquidity constraint has always been referred to as an important determinant in decisions on fertilizer use (Matassan 2008). Malaysia used to import fertilizer however through the downstream activities, its national oil company, PETRONAS, had built its own urea manufacturing company to produce urea fertilizer. Unfortunately, the 1.2 million ton per year of urea is largely exported because of its high price due to its premium grade in quality. The Malaysian farmers prefer and tend to buy urea fertilizer at a cheaper price produced by other countries such as Indonesia and China. A study on the financial aspect could provide empirical data to indicate the likelihood of innovation adoption amongst farmers besides communications for persuasion

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# The Innovative Society: A Comparison Study of Innovation Diffusion among Farmers in Malaysia Two Major Granary Area

**Ammar Redza\***

*Center of Social and Innovation  
Universiti Teknologi PETRONAS  
Seri Iskandar, Perak, Malaysia  
Email: redzarizal@yahoo.com*

**Shahrina Md Nordin**

*Center of Social and Innovation  
Universiti Teknologi PETRONAS  
Seri Iskandar, Perak, Malaysia  
Email: shahrina\_mnordin@petronas.com.my*

**Mohd Shamsuri Md Saad**

*Universiti Teknikal Malaysia Melaka, Malaysia  
Email: shamsuri@utem.edu.my  
\*Corresponding author*

## **Abstract**

**Purpose:** The study conducted to investigate the challenges that are faced in innovation diffusion effort of new green technology specifically on green urea

**Design/methodology/approach:** This study had involved 400 farmers in MADA and KADA as the respondents

**Findings:** The result of the study found that there are significant differences in all dimensions studied between the two granary areas.

**Originality/value:** The paper shall highlight areas for further improvement of strategic communication strategies for new green technology leading to effective diffusion of innovation for adoption.

**Keywords:** Communication; Innovation; Farmers; Rice; Malaysia

**Paper type:** Case study

**Introduction**

In the Tenth Malaysia Plan (RMK-10) which was launched by the government in 2010, the Malaysian government has initiated the moves to transform the agricultural sector into a developed and sustainable farming system (Penafort 2010). The ongoing transformation requires enculturation in the use of technology among farmers in the country.

Various methods have been used to increase the yield of rice in Malaysia. The government is generally very committed to transforming rice cultivation sector towards a more modern, dynamic, innovative and competitive sector. Through the Economic Transformation Plan (ETP) and the National Key Result Areas (NKEA), the government aims to increase the rice productivity in the country's granary areas.

The country's rice industry is targeted to generate a gross domestic product (GDP) growth of RM 1.37 billion by 2020 (Anon 2013). The Malaysian Government has outlined various initiatives to achieve this goal. These include the introduction of transformation and innovation in the management structure with the aim to resolve any administration delays and to facilitate the farmers and the rice cultivation processes. Despite such measures, there are still problems faced by farmers. It is reported in the local newspapers that farmers expressed dissatisfaction due to failure of the relevant parties such as government agencies to inform them periodically of any updates. Recently, farmers in Tanjung Karang reported losses due to the cancellation of rice seed certification schemes (Anon n.d.).

Previous studies showed that there were communication problems between farmers and agricultural extension officers (Nordin et al. 2014). The findings show that there is certain information, particularly with regards to innovation and improvement that is not transmitted or diffused to the farmers. This issue is one of the factors leading to the delay in acceptance of the technology by the farmers. Communication leads to the understanding of information which is the key dimension in an innovation. Understanding of information allows farmers to know more about an innovation and hence enabling them to compare the relative advantage of an innovation. This step is the core concern in the diffusion of innovation and the acceptance of latest technology (Rogers 2010). Without the use of appropriate communication, the acceptance of information will not happen which will inhibit innovation diffusion process.

Communication plays an important role in helping the diffusion of innovation. This innovation diffusion is also experienced by the agricultural sector. The poultry and palm oil plantation sectors are among the sectors that have witnessed the rapid development of technology and latest innovation. Involvement of a major capital investment enables the formation of a comprehensive communication channel which facilitates the diffusion of innovation (Lammers 2011).

**Background of the Study**

Areas under the management of Muda Agricultural Development Authority (MADA) and Kemubu Agricultural Development Authority (KADA) are the two main granary areas of Malaysia. MADA manage an area of 126,000 hectares of lowland that produces nearly 40% of the country's rice output. Meanwhile KADA is an initiative by the Malaysian government in 1972 to improve the economic structure of rural communities in the districts of Kota Bharu and its surrounding areas. To date, there are more than 9,000 farmers under KADA management. Both of the granary areas have been directly benefited from the growth of innovation in the rice sector in Malaysia. They not only received massive fund from the government, but they have also been exposed to the collaboration with other research agencies (e.g. IRRI, universities, private companies (Penafort 2010). Through these contributions and research, some significant outcomes have been produced. Among those outcomes is the Ladang Merdeka (independent

farm) system that has been developed by KADA in 1991 (Penafort, 2010). The Ladang Merdeka operates in a similar way with palm oil plantations through vast estates system. The Ladang Merdeka concept has resulted in a more efficient management system.

It is imperative to conduct an empirical study to compare the dimensions of communication and innovation in both areas. Firstly, it enables an in-depth understanding of the differences in innovation dimension that may exist in these two different locations. The differences in innovation dimension can unravel whether there is a problem in terms of communication or the significant differences are due to homophile and proximity factors. As described by Rogers (Rogers, 2010), the homophile or common interests and proximity or similarity location dimensions may explain the differences in the rate of innovation adoption and effectiveness of communication in innovation. The findings of this research will not only help bridge the gap in the literature on innovation in Malaysia but also able to assist policymakers in evaluating the effectiveness of the policy they have established in both areas.

The agricultural sector is one of the sectors that faces a lot of challenges to diffuse innovation among its participants. Rogers (Rogers, 2010) described the various factors that may contribute to this situation. Firstly, it is caused by the strength of heritage education in this sector. Education through family tradition refers to the technical or agricultural science inherited from one generation to another within the family structure. Typically, the heritage education has caused misinterpretation on the concept of technology as well as the practice of inefficient and uneconomical techniques (Rogers, 2010). In his study on the use of latest pesticides among the farmers, Rogers found that many farmers are reluctant to adapt the latest technology since they are accustomed with the existing practices which they inherited for generations. In Malaysia, the traditional practices also influence the acceptance of latest innovations. Khatam in his report stated that the *Rancangan Buku Hijau* (Green Book Policy), which was introduced by Malaysian second Prime Minister, Dato Seri Abdul Razak Hussein, faced difficulties due to the existence of conservative barrier that hindered the acceptance of new technologies that were introduced through the policy (Khatam et al. 2013). However, through the development of information technology and the passage of time as well as generational change, the farmers became increasingly aware of the latest agricultural technology.

Farmers often rely on internal communication network with other farmers. It will be easier for them to adapt the technologies if they see the effectiveness and benefits of those technologies (Nordin et al. 2014). This situation corresponds to the concept of relative advantages presented by Rogers (Rogers, 2010) in the diffusion of innovation theory.

### **Research Objectives**

The objective of the study is to compare the dimensions of innovation between the two main granary areas of Malaysia, namely MADA and KADA. The results of this study allow the analysis on the aspects of innovation in the paddy sector. Furthermore, the rice cultivation sector gets special attention in the ETP and NKEA where MADA and KADA are the major focus as they serve as the backbone of Malaysia's paddy sector. Studies on the MADA and KADA also provide an overview on the implementation and communication of innovation in two different locations with different social structures and infrastructure in Malaysia.

### **Literature Review**

An increase in demand for food or cash crops around the world has contributed to the increase in fertilizer worldwide (Redza et al. 2012). Along with the agricultural sector, the fertilizer industry has progressed in terms of new technology development to meet the high demand for agricultural products. With an annual production of two million metric tons, the fertilizer

industry in Malaysia is considered as competitive. Malaysian fertilizer companies are competing with others around the world to improve the technology in the industry (Redza et al. 2012; Matassan 2008). These companies have created new technology to develop fertilizer products that fulfil specific demands from certain plants.

The development of new technologies in the fertilizer industry has an impact on the development of the rice cultivation sector. Rice sector like other sectors of food crops and other commodities is dependent on effective fertilization system. According to the Food Agriculture Organization (FAO), an organization under the United Nations, Malaysia is using at least 1.8 million tons of urea per year for the use of plants in the country (Food & Nations 2006). Innovation in rice cultivation is not only limited to the development of technology in the fertilizer industry. Although fertilizer is an essential agricultural inputs for rice cultivation, the use of pesticides and machinery is also important in ensuring a high return (Rizal 2015). The use of such technologies have proven to work in improving agricultural output compared to the previous techniques. For example, the integration between the MR 220 genes and toxins Clearfield system has led to the introduction of CL220 rice breed. CL220 is able to increase revenue and reduce the cost of weed control (Anon n.d.). Even though the use of innovation is proven to increase revenues and farmers' income but agricultural extension officers still faced problems in ensuring that farmers accept the new technology.

There is reluctance among farmers to accept ideas and suggestions from agricultural extension officers regarding effective agricultural pest control (Heong 2009; Penafort 2010). Difficulties in the application of innovation and new technologies have caused problem to the development of agriculture and rice cultivation technologies. Problems in development and adoption of technology in the agricultural sector as well as other sectors are not only faced by developing countries and third world countries. According to Rogers (Rogers, 2010), developed countries also face the problem to diffuse innovation and new technologies. For example, in 1986, Toshiba's senior engineer, Mizoguzhi, face opposition from the executive boards in his efforts to raise funds in developing a laptop, an innovation at that time (Rogers, 2010). Rogers describes the state of technology adoption depends on several factors, including the compatibility, relative advantage, communication channels, social structure, time and few other things that will be discussed further in the next section.

### *Innovation Diffusion*

Diffusion of innovation is a process in which new findings are disseminated to the public who are members of social systems (Rogers & Shoemaker 1971). Diffusion of innovations according to Rogers is divided into four key areas which are the innovation process itself, communication channels, time and social structure. Innovation process looks at the individual's perception in accepting an innovation. Factors like relative advantage, complexity, comparison with existing technologies play an important role in this aspect. Communication channels look at the diffusion of innovations using the correct channel. According to Rogers, an individual is often heterophilic in nature, thus the use of appropriate channel is important to establish an equation so that innovation can be easily diffused (Rogers, 2010).

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often heterophilic in nature, thus the use of appropriate channel is important to establish an equation so that innovation can be easily diffused (Rogers, 2010).

### Research Concept and Methodology

This study is a comparative study to identify the types of innovation that are used by farmers in MADA and KADA granary areas. The focus of research includes the impact of communication on the application of innovation or expansion of rice cultivation. The sampling was selected from the two granary areas. There are several factors that influence the development of rice cultivation, namely communication between farmers and the government departments and the private sector, the involvement of funding to stimulate innovation, and the effectiveness of training to make farmers more innovative. However, the main focus of this study is on communication between farmers and the government departments and the private sector and the extent to which the communication impact on rice farming innovation among the farmers.

This research focuses on studying the factors that affect the use of innovation in the rice cultivation system for the two granary areas of KADA and MADA. The sample for this research was gathered using Convenient Sampling technique. Hair and colleagues (Hair et al. 2006) states that convenient sampling is appropriate for studies where getting respondents is difficult due to factors such as regional geophysical investigations and responses. A total of 200 farmers were selected from each granary areas for this research. The list of farmers was supplied by the management board of MADA and KADA. The number of respondents is determined based on the areas involved which represent the whole area with farmers and paddy fields. Table 1 shows the number of respondents involved.

Table 1: Distribution of Respondent Based on Granary Areas

Area	Number of Respondent
Muda Agricultural Development Authority (MADA)	200
Kemubu Agricultural Development Authority (KADA)	200
<b>Total</b>	<b>400</b>

A questionnaire was developed as the data collection research instrument and was used to analyse data in terms of the use of innovation, communication strategies, socio-economic and income generation. The results were analysed to determine the effectiveness of the dimensions used. The dimensions used in this study were adapted from the dimensions of the study by Shahrina *et al* (2014). The followings are the dimensions that were used in this study.

- (1) The role and involvement of Farmers
- (2) Knowledge and Information of Farmers
- (3) Innovation Management
- (4) The role of Agricultural Extension Officer

The findings were then analysed using independent T-Test analysis. This analysis allows the comparison of the same dimensions or variables on the two different groups (Hair et al. 2006). It then allows conclusions to be made whether there is any significant statistical difference between MADA and KADA in terms of the communication dimension in innovation.

## Research Findings

Communication is an important dimension in ensuring the information and knowledge that the investigator or any technology and new innovation creator have been well received by the users (in this context, the farmers). Communication among farmers were assessed through multiple dimensions namely:

- (1) The farmers' role and involvement
- (2) The farmers' Knowledge and Information
- (3) Innovation Management
- (4) The role of Agricultural Extension Officers

Respondents were asked to provide feedback on instruments based on Likert response scale of 1-5 where 1 is strongly disagree and 5 is strongly agree. In addition, data on farmers' net income per season are also recorded using the same instruments. Data were analysed using Independence T-Test analysis using the SPSS software. This analysis enables every dimension to be compared between farmers from MADA and KADA. The significant differences between the two groups were recorded. The mean score, reliability and standard deviation were first calculated prior to the content analysis. Table 2 presents the average score and the reliability values for MADA and KADA farmers.

Table 2: Average Scores and Standard Deviations for MADA and KADA Farmers

No	Dimension	Area	Average Score	Standard Deviations	Reliability Value
1	Role and Involvement of Farmers	MADA	3.611	.5630	0.752
		KADA	3.403	.5051	0.859
2	Knowledge and Information of Farmers	MADA	3.469	.4732	0.720
		KADA	3.692	.5099	0.759
3	Innovation Management	MADA	3.573	.4436	0.820
		KADA	3.333	.6144	0.736
4	Role of Agricultural Extension Officers	MADA	3.709	.4632	0.816
		KADA	3.626	.4266	0.803

### *The Role and Involvement of the Farmers*

An independent T-Test analysis was performed to examine and make a comparative analysis on the role and involvement of farmers between MADA and KADA. This dimension seeks to understand the extent to which farmers are involved in the innovation process. The process typically comprises of proposal process, debate and decision making. All of the elements have been forwarded to the respondents through the questionnaires used. Based on the findings of the study as shown in Table 3 below, there is a significant difference in the extent of farmers' role and involvement of farmers in MADA ( $\mu = 3.61$ ,  $SD = 0.56$ ) and farmers in KADA ( $\mu = 3.40$ ,  $SD = 0.51$ ),  $p = <.000$ . MADA may require a bigger role played by their farmers

compared to farmers in KADA. This situation may be explained by the existence of collaboration between the regional farmers' organizations (PPK) in MADA with other private companies. This involved the establishment of several local mini laboratories and field test areas in MADA (Penafort, 2010). Through the creation of infrastructure such as this, farmers are able to engage and experience the innovation themselves in choosing the best for their crops. By practicing certain aspects of innovation, the farmers have greater capacity to express their opinion on the improvements needed (Rogers, 2010). In MADA, the number of cooperatives of farmers' organizations is larger than KADA (Rizal & Nordin 2013), enabling more involvement of farmers as cooperative members. Cooperative members also have a voice in discussing the future direction of their cooperation, including innovation in rice farming. The existence of the infrastructure and facilities may ponder an insight to the significant difference in the extent of farmers' involvement in innovation process between MADA and KADA.

Table 3: Independent T-Test Analysis on the Role and Involvement of Farmer Dimension

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Average Difference	Std. Error Difference
Role and Involvement of Farmer	Equal variances assumed	.839	.360	4.474	400	.000	.20834	.04656
	Equal variances not assumed			4.667	395.606	.000	.20834	.04464

*Knowledge and Information of the Farmers*

The respondents were also asked to assess and evaluate the extent of their knowledge on innovation. This includes the latest innovations in the market. Their perception on the importance of knowledge in accepting innovation is also examined in this dimension. Table 4 explains the details of this analysis. There is a significant difference between the mean scores in the dimension of knowledge and information between MADA farmers ( $\mu = 3.47$ ,  $SD = 0.47$ ) and KADA farmers ( $\mu = 3.69$ ,  $SD = 0.51$ ),  $p = <.000$ . KADA management is aware on the presence of unsystematic work culture among farmers in the area. Unsystematic work culture would create a barrier in the effectiveness and efficiency of diffusion of innovation. The unsystematic situation affects the distribution of information which in turn hinder the acceptance of innovations (Rogers, 2010). KADA management took various initiatives to address these issues, one of them was by creating 'Ladang Merdeka (Independent Farm)' in 1991 (Penafort, 2010). Ladang Merdeka combined individual farmer's land into one larger parcel of land and are cultivated together. The Ladang Merdeka concept requires the cooperation between all farmers involved. Through this method, farmers need to have knowledge of managing the paddy field which encompasses the systems, technology, rules and other related matters. Until 2009, the Ladang Merdeka area covers 740 hectares of paddy fields compared to 380 hectares in MADA under the concept of mini estate (similar concept with

Ladang Merdeka). Hence, farmers in KADA have the advantage of a common platform for sharing knowledge and information on innovation than farmers in MADA.

Table 4: Independent T-Test analysis on Farmer’s Knowledge and Information Dimension

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Average Difference	Std. Error Difference
Farmer’s Knowledge and Information	Equal variances assumed	6.251	.013	-5.441	400	.000	-.22299	.04098
	Equal variances not assumed			-5.284	356.862	.000	-.22299	.04220

### *Innovation Management*

Innovation management refers to the aspects of approach, management and issues related to innovation diffusion. The views and perceptions of farmers towards the structure that facilitates their acceptance of innovation are also included in this dimension. Based on Table 5 below, there are significant differences in the dimension of innovation management among MADA farmer groups ( $\mu = 3.57$ ,  $SD = 0.44$ ) and a group of KADA farmers ( $\mu = 3.33$ ,  $SD = 0.61$ ),  $p = <.000$ . MADA has an advantage in terms of the number of Regional Farmer Associations (PPK) and cooperatives. Both institutions are fundamental to the strength of the financial structure of the farmers in MADA. Finance is one of the important element to the acceptance of innovation. A sound financial structure contributes to the effectiveness of the distribution of information by increasing the number of communication channels which include mass media and pamphlet (Miller 2004). It is reported that until 2012, there are 27 cooperatives comprising of PPK fund shares worth RM 13.85 million (Rizal 2015). This financial strength provides advantages in terms of innovation management to farmers in MADA.

Table 5: Independent T-Test Analysis on Innovation Management Dimension

	Levene's Test for Equality of Variances			t-test for Equality of Means				
	F	Sig.		t	df	Sig. (2-tailed)	Average Difference	Std. Error Difference
Innovation Management	Equal variances assumed	60.271	.000	5.613	400	.000	.23933	.04264
	Equal variances not assumed			4.951	389.457	.000	.23933	.04834

### The Role of Agricultural Extension Officer

The perceptions and views of respondents towards the agricultural extension officers were solicited in the final section of the instrument. These include the effectiveness of agricultural extension officers, communication channels used and the assistance given by them to the farmers. There are significant differences in the dimension of the role of agricultural extension officers among farmers in MADA ( $\mu = 3.70$ ,  $SD = 0.44$ ) and farmers in KADA ( $\mu = 3.63$ ,  $SD = 0.43$ ),  $p = .031$ . Agricultural extension officers play an integral element in the rate of acceptance of innovation and communications relating thereto (Kamarudin et al. 2015). They are not only deemed to be an agent of change but also act as 'opinion leaders' in matters related to innovation in rice cultivation. The role of this component is not only seen as accelerating the diffusion of innovation but also in certain circumstances to be also able to trigger innovations (Matassan 2008; Rogers 2010; Rogers & Shoemaker 1971). Agricultural extension officers should not only act on the basis of his profession but also to socialize and be part of the social structure of the community. This will ensure their suggestions and views related to innovation or reform will be heard by the farmers (Nordin et al. 2014; Muhammad et al. 2013). Such situation exists among agricultural extension officers in MADA but not in KADA. According to reports by Penafort (Penafort, 2010), the agricultural extension officers in MADA were seen as more committed, motivated, innovative and have a range of initiatives to help develop the farmers. Details on the score is on Table 6 below.

Table 6: Independent T-Test Analysis on the Role of Agricultural Extension Officer Dimension

	Levene's Test for Equality of Variances		t-test for Equality of Means					
	F	Sig.	t	df	Sig. (2-tailed)	Average Difference	Std. Error Difference	
The Role Of Agricultural Extension Officer	Equal variances assumed	.002	.969	2.161	400	.031	.8313	.03847
	Equal variances not assumed			2.233	373.074	.026	.8313	.03723

## Conclusion

MADA and KADA are the two main granary areas of the country. Both of the irrigation schemes are contributing nearly 54% of the total rice production in the country (Penafort 2010). The focus on Economic Transformation Plan (ETP) and National Key Result Areas (NKEA) is a reflection of the importance of both granary areas. Apart from the aspects of rice production, MADA and KADA represent two different locations (MADA on the West Coast, KADA on the East Coast), have a different social structure and infrastructure. As an example, majority of irrigation in MADA depends on dams while irrigation for KADA rely on the existing rivers in Kelantan. Infrastructure differences are clearly visible. Hence, this study was conducted to assess the key aspects that lead to progress in the rice industry which is communication in the adoption of innovation. This study has identified differences in dimensions related to communication in the acceptance of innovation.

Based on these findings, there were significant differences in all dimensions of the study. These include the role of farmers, farmers' knowledge, innovation management and the role of agricultural extension officers. MADA has significant advantages in terms of the role of farmers, farmers' knowledge and the role of agricultural extension officers. It gives the impression that the advantages of the infrastructure, management systems and financial management innovation works to help improve communication among the farmers (Rogers 1976). Furthermore, previous study done by Khatam *et al*, stated that extension officers could secure cooperation from farmers through close contact and frequent engagement (Khatam et al. 2013). These dimensions are considered as agents of change by Rogers in his theory of innovation diffusion (Rogers, 2010). But if we look more closely, the existence of the mini management body such as PPK assists in the diffusion of these innovations. PPK is not only responsible for representing farmers in communication with outside agencies, but they also have a system of systematic presentation of information to farmers (Rizal & Nordin 2013). The advantages of PPK must be adapted by any policy makers in rice industry in order to ensure on the effective diffusion of innovation. If not, there might be leakages of the resources that will cause losses to the country.

This study also contributes to the development of the rice industry related literature and the diffusion of innovation by making comparison on communications in innovation between the two main granary areas of the country. The results of this comparison showed significant room for improvement as well as the broader research for what is considered as a sunset industry. Model management and infrastructure can be adapted to obtain better results. Future studies may be able to see the comparison between the granary areas and non-granary areas. Means of communication through a mechanistic understanding of communication can also be applied to obtain the results from the micro aspects of communication. Future research may also focus on agricultural extension officer and understand the character and the elements necessary to obtain effective communication between them and the farmer.

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# Innovative Environmental Policy in Promoting the Green Concept of Japanese Electronics Industry

Azhan Hasan\*

21-03-08 Department of Management & Humanities,  
Universiti Teknologi PETRONAS, 32610 Perak Malaysia.

Email: [azhan\\_hasan@utp.edu.my](mailto:azhan_hasan@utp.edu.my)

Environmental Policy Research Centre (FFU),

Freie Universitaet Berlin, 14195

Berlin Germany

Email: [azhanhsn1602@zedat.fu-berlin.de](mailto:azhanhsn1602@zedat.fu-berlin.de)

\*Corresponding author

## Abstract

**Purpose:** The purpose of this research is to identify the role of innovative environmental policy (eco-innovation policy) to 'green' the electronics industry in Japan. Eco-innovation refers to all forms of innovation that creates to creation and development of new business opportunities and benefits the environment by preventing or reducing their impact, or by optimizing the use of natural resources. Eco-innovation is closely related to the development and use of environmental technologies and also to the concepts of eco-efficiency and eco-industries.

**Design/methodology/approach:** The framework of this research is based on Porter's Hypotheses which stated that the well-designed environmental policy will contribute to the environmental performance (reduction in CO2 emission) as well as business (economic) performance (number of patent patented by the firms or industry). An analytical framework based on the Porter's Hypotheses is presented to understand and provide step-by-step strategies for interpreting the results for practical and effective environmental policy application. The research project involves a screening interview where stakeholders, for instance, electronics firms, academics, governmental agencies and the ministries together with environmental non-governmental organizations (NGOs) were interviewed in order to understand and analyze the effectiveness of innovative environmental policy and acceptable approaches for greening the Japanese electronics industry in order to fulfil their commitments to various international environmental treaties or agreements.

**Findings:** The results showed that, there is no single regulation can green the Japanese electronics industry. In other word, the success rate of green electronics industry in Japan would require a combination of numerous regulations as stated above and good stakeholder participation. The policy recommendations for overcoming these barriers including developmental support and well-suited incentives electronics sector and engaging high-impact stakeholder.

**Originality/value:** Future direction of this research should examine resource efficiency, sustainable consumption and production in addition to rebound effects of electronics industry in regards to the relationship between economic development and environmental protection to recognize the gaps in the area of waste recycling and design for environment (DfE).

**Keyword:** Environmental Policy in Japan; Regulation and Governance; Eco-Innovation; Ecological Political Economy; Sector Analysis; Policy Solutions

**Paper Type:** Research Paper

**Introduction**

Eco-innovation is a core element of Japan’s environmental policy and part of the government’s strategy to contribute to economic growth and social progress. Japan is a world leader in environment- and climate-related technological innovation, and is a pioneer in some new green technologies, such as green information and communication technologies. Government expenditure for environment- and climate-related R&D increased considerably during the various period. However, it still represents a relatively low share of the public R&D budget; by extending directs public investment in basic R&D, the government would share the risk of developing new technologies with the private sector and further accelerate innovation. The private sector, especially the electronic manufacturing industry, is considered a driver of eco-innovation. Performance targets, such as the Top Runner Program, have contributed to technological improvement, especially in electronics sector in Japan.

They are at least 75 diverse definitions of e-waste available world-wide. On the other hand, the classes of electronic devices and electrical equipment that incorporated in government-particular regulations vary between nations, with a few standards embracing a wide cluster of electronics products like EU, for instance, Japan and China. For instance, United States concentrated on a more modest subset of devices. Table 1 below was exemplified the variety of definitions that took into action in the international environmental arena since 2005.

Table 1: Overview of Selected Definitions of WEEE/E-waste

Reference	Definition
EU WEEE Directive (EU, 2002a)	“Electrical or electronic equipment which is waste...including all components, sub-assemblies and consumables, which are part of the product at the time of discarding.” Directive 75/442/EEC, Article 1 (a) defines “waste” as “any substance or object which the holder disposes of or is required to dispose of pursuant to the provisions of national law in force.”
Basel Action Network (Puckett and Smith, 2002)	“E-waste encompasses a broad and growing range of electronic devices ranging from large household devices such as refrigerators, air conditioners, cell phone, personal stereos and consumer electronics to computers which have been discarded by their users.”
OECD (2001)	“Any appliance using an electric power supply that has reached its end-of-life.”

SINHA (2004)	“An electrically powered appliance that no longer satisfies the current owner for its original purpose.”
StEP (2005)	E-waste refers to “...the reverse supply chain which products no longer desired by a given consumer and refurbishes for other consumers, recyclers or otherwise processes wastes.”

(Source: Widmer, Oswald-Krapf et al., 2005)

Although there is no governmental strategy that exclusively addresses eco-innovation, Japan considers that eco-innovation should lead its innovation strategy and the concept has been referred in several innovation documents such as the recently revised New Economic Growth Strategy (investment in resource efficiency) and the —Innovation 25| Guidelines (strategies for social system reform) (METI, 2010). Various measures have been taken by Japan government in their efforts in promoting eco-innovation strategy into the environmental regulation that will discussed in this paper.

### Literature Review

There are many studies that linked the capability of environmental regulation to the positive outcome on the environmental performance and competitiveness. The literature have been reviewed and analyzed to understand the significance of relationship between environmental regulations as well as competitiveness.

#### *Environmental Policy and Environmental Performance*

Regulations has additionally already been seen as a crucial determinant of the environmental advancement (together with factors of technological innovation push, industry take and also firm-specific factors with market-pull, technology-push and also company specific factors) from the evaluation of advancement studies and also is referred to as the “regulatory push/pull effect” (Rennings, 2000) and overcome the two times externality dilemma (van der Bergh, 2008). Moreover, source factors play a crucial function. Regarding the determination of best places discover R&D products, source factors such as access to local controlled and also design sources have acquired improving magnitude within the last many years (Horbach, 2008). And as well company specific factors impact the innovation decision, for example know-how transport mechanisms and also effort with communities (Rehfeld et al, 2007). It is usually figured some sort of complexness of technological innovation push, market pull, specific company policy factors impact on the advancement determination of companies (Horbach, 2008).

#### *Environmental Policy and Competitiveness*

Environmental policy has been acknowledged as a significant driving force for innovation with environmental benefits through better competitiveness due to environmental regulation (Porter and van der Linde, 1995), patent applications (Lanjouw and Mody, 1996) and energy efficiency

innovations (Newell et al., 1998). This positive finding on innovation that derived from environmental regulations, however, is not fully supported by few scholars. There are no major impact of regulatory compliance costs on patent applications (Jaffe and Palmer, 1997) and technology adoption whatsoever (Snyder et al., 2003). Regulation has been recognized as a crucial determinant of environmental innovation on “regulatory push/pull effect” innovation (Rennings, 2000), regulation pressure and corporate image (Del Rio Gonzalez, 2005), encouragement on green research and development (R&D) (Arimura et al., 2007) and national regulation driven innovation decisions by the companies (Popp, 2006). Flexibility concerning the compliance methods, dissimilarities in the obligations enforced on different sectors including electronics industry and its compliance time periods contributing for inspiration and motivation to adopt the best-suited technology application for eco-innovation programs to take place (Ashford, 2000).

#### *Environmental Policy and Public Pressure*

Horbach suggested that customer demands and public pressure are essential drivers of eco-innovations (Horbach, 2008). On the other hand, as compared to general innovation, customer motivations for eco-innovation are distressed by government regulatory systems through environmental policies, for example, taxes (Oltra 2008) and policies (Belin, Horbach, & Oltra, 2009). Conversely, Porter et al (1995) argued that properly designed environmental regulation can activate innovation that neither fully offset the costs of complying with them as referred to ‘Porter Hypotheses’. As Regulation can trigger innovation offsets through substitution of less costly materials or better utilization of materials in the process but regulation and policy need to change with demand (Porter and van der Linde, 1995). It is contended that non-prescriptive market based innovation policy such as taxes and tradable permits are more convincing than prescriptive regulation, for instance, technology based controls and performance standard to encourage innovation (Johnstone, Hascic, & Kalamova, 2010).

#### **Theoretical Framework**

The causal relationship between (strict) environmental regulations and policies and environmental performance have been analyzed based on Porter Hypothesis in electronics industry in Japan as shown in the Figure 2 below. Porter and van der Linde in their study in 1995 on the capability of environmental regulations to enhance the economic competitiveness, elaborated this schematic relationship, if well designed by the policy maker, will enable the environmental regulations in resulting the “innovation offsets” which will improve environmental performance for the company and country.

#### *The Link between Environmental Regulation and Environmental Performance as well as Competitiveness*

The research framework have been constructed to examine and investigate the relationships between environmental regulations and environmental performance and competitiveness. Global environmental issues such as global warming, climate change, environmental degradation and pollutions have been identified as a main drivers or motivators that stimulate to the need of regulation’s implementation. The ability of environmental regulations to influence the level of environmental performance and competitiveness is depends on the efforts to promote innovation through environmental R&D program in the country. This efforts later will stimulate the advancement of environmental-related technology, for instance, pollution control devices, process change, product reformulation and new product creations that have capable to minimize the ‘bad’ environmental impact. This effect-relationship have been elaborated in the Figure 2 below.

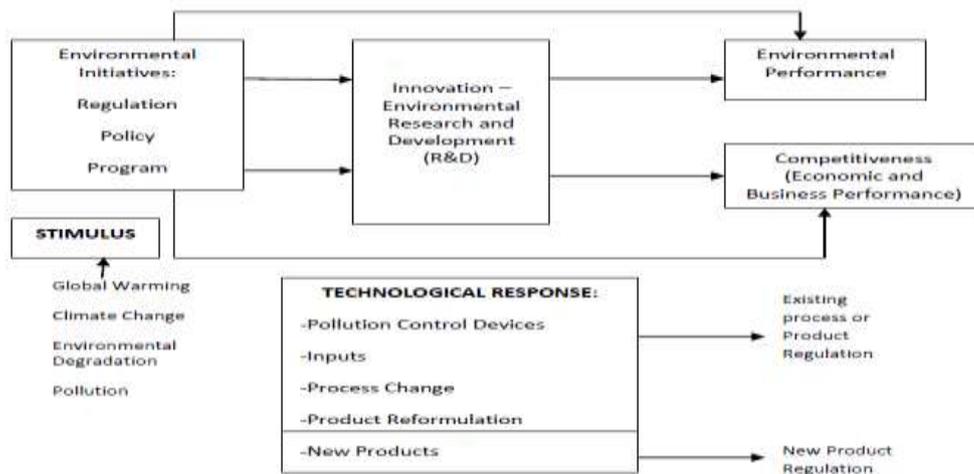


Figure 2: Research Framework on Various Environmental Initiatives and Desired Performance

(Source: Lanoie, P. et al., 2011 & Ashford, N. A., 1993)

## Research Methodology

### *Data sources*

#### *Data*

A combination of documentary sources, quantitative data, and personal interviews are used as a source of data. Documentary sources include industry databases, professional/trade journals, research project summaries, patent databases, company reports, and regulatory documents. Descriptive statistics about individual companies, industries, and countries are available from company financial reports, industry associations, and government agencies. Phone or live interviews were conducted with individuals in industry, government, NGOs, and academia/research who have been involved with at least one of the regulatory cycles.

#### *Documentary*

Primary documents are a rich source of information about public and private behavior and decisions. Most documentary resources that obtained for my research are through public channels, such as government agencies, company websites, or public-private research projects.

#### *Quantitative data*

Quantitative data can also be seen as another form of documentary source for this research, as they are distinct in that they are the result of collected numerical data that must be processed further for genuine usefulness. Quantitative data, such as financial data, demographic data, and air quality measurements that have been gained through this research and interview are helpful in understanding corporate financial performance, market conditions, and public and private outcomes.

#### *Interviews*

The purpose of the personal interviews is to build upon the information gathered from documentary sources and quantitative data, and to explore organizational and individual perceptions of technology and regulatory decisions. Interviews uncover motivations and concerns that are not revealed or even contradictory from the other sources. The selection of potential interviewees was based on their depth of involvement in a given regulatory cycle(s)

and their organizational affiliation. Table 3 is shown the category of data and their sources that have been collected.

Table 3: Research Methodology and its Source

<b>Categories</b>	<b>Type(s)</b>	<b>Source</b>
Documentary Research	Government regulatory document; Corporate press release; NGOs report	MOEJ, METI, KEIDANREN, JEMA, AEHA, electronics company such as Toshiba, Panasonic, Sony, Hitachi, Sharp & Fujitsu, Greenpeace
Quantitative Research	Financial data; Industry data; Country or regional demographics	Electronics company, OECD, UNEP, CRIEPI, think-tank & research centres
Interview (Qualitative Research)	Industry; Government; Environmental NGO; Academic & Research Centres	Electronics company, MOEJ, METI, KEIDANREN, Greenpeace, University-Keio, Tokyo & Waseda, CRIEPI

(Source: Own compilation)

## Research Findings

### *Waste Collection*

In FY2013, approximately 12.73 million units of the four designated types of waste home appliances were collected in total at the designated collection sites. As for the breakdown, there were approximately 2.96 million air conditioners, approximately 2.04 million CRT TVs, approximately 700,000 LCD and plasma TVs, approximately 3.43 million refrigerators and freezers, and approximately 3.60 million clothes washers and dryers. This result has been exemplified in Table 4 below. In addition, in FY2013, a total of approximately 12.04 million units (up by about 6.2% from the previous year) of the four designated types of waste home appliances were transported to home appliance recycling plants. The recycling rates of these waste home appliances must meet the legally required levels.

Table 4: Number of waste home appliances collected at the designated sites across Japan in FY2013

	<b>Number of collected appliances (thousand units)</b>	<b>Ratio (approx.; %)</b>	<b>Year-to-year basis (%)</b>
Air conditioners	2,961	23.3	+ 25.5
CRT TVs	2,042	16.0	- 10.6
LCD and plasma TVs	698	5.5	+ 41.6
Refrigerators and freezers	3,433	27.0	+ 17.6
Clothes washers and dryers	3,600	28.3	+ 14.5
Total for four designated types	12,733	—	+ 13.7

(Source: [http://www.meti.go.jp/english/press/2014/0624\\_02.html](http://www.meti.go.jp/english/press/2014/0624_02.html))

According to Association for Electric Home Appliances (AEHA) study, Home Appliance Recycling Law (HARL) was successfully increased the collection by the designated assembly site especially for CRT-type TV set and refrigerators as well as freezers as exhibited in Figure 5 below.

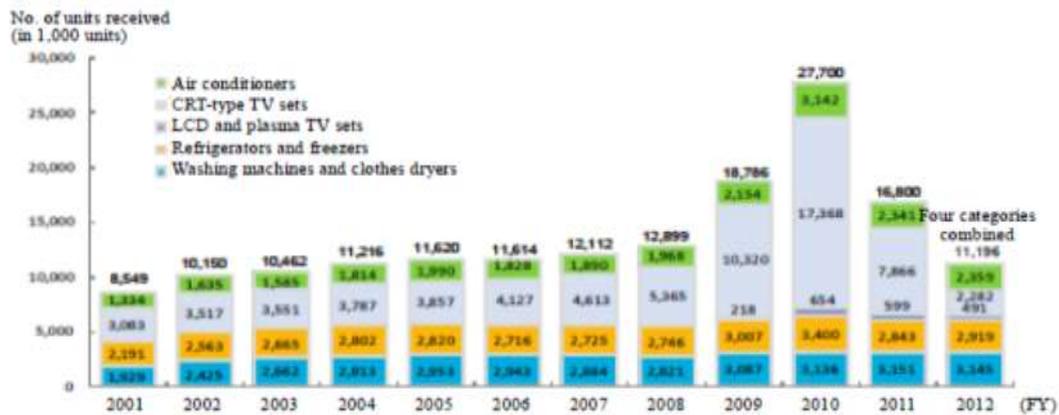


Figure 5: Number of units received by designated collection sites after the enforcement of the Home Appliance Recycling Law  
 (Source: AEHA, 2012)

*Waste Recycling*

The recycling rates for the four types of designated waste home appliances were as follows: 91% (against a legal requirement of 70%) for air conditioners; 79% (against 55%) for CRT TVs; 89% (against 50%) for LCD and plasma TVs; 80% (against 60%) for refrigerators and freezers; and 88% (against 65%) for clothes washers and dryers. These results show that FY2013 marked another year of success for companies in achieving recycling rates greater than the legal requirements as shown in Table 6 and Figure 7 below.

Table 6: Recycling rate (achievements in the last three years)

	FY2011 (%)	FY2012 (%)	FY2013 (%)
Air conditioners	89	91	91
CRT TVs	79	82	79
LCD and plasma TVs	83	87	89
Refrigerators and freezers	79	80	80
Clothes washers and dryers	87	86	88

\*LCD/plasma TVs and clothes dryers were added as designated appliances in FY2009.  
 (Source: [http://www.meti.go.jp/english/press/2014/0624\\_02.html](http://www.meti.go.jp/english/press/2014/0624_02.html))

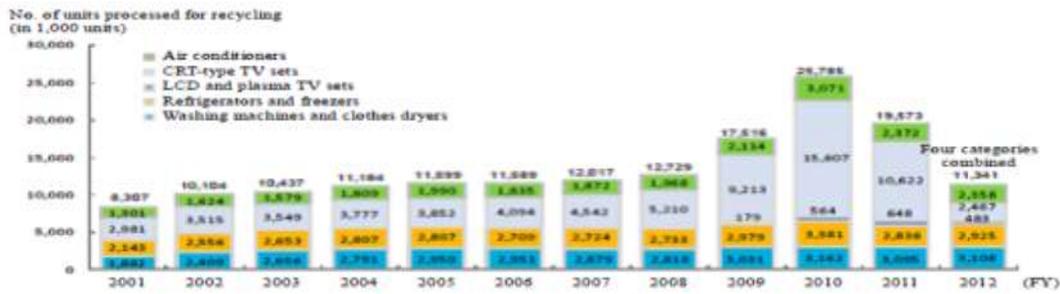


Figure 7: Number of units processed for recycling  
 (Source: AEHA, 2012)

AEHA study also revealed that air conditioners and LCD/ plasma TVs are leading the recycling rates respectively since 2001 as presented by Figure 8 below.

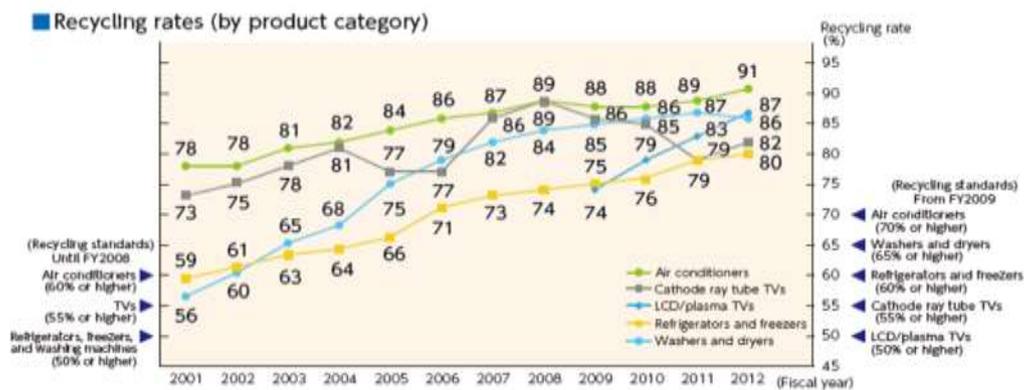


Figure 8: Recycling rates by product category  
 (Source: AEHA, 2012)

*Performance of the Environmental Regulations*

Regarding to the performance of the environmental regulations, all of the regulations that studied in this research shown a ‘significant and satisfactory’ result in achieving better environmental performance. The regulations able to increase the recycling rate for most of electronics products, stimulate the development of eco-friendly products, promote research and development (R&D) for diffusion of the environmental technology and improve energy efficiency for the electronics goods.

The Fundamental Recycling Plan have been established to scrutinize the development of a sound material cycle society in Japan. This plan characterized 3 indicators that represent different dimensions of the material flow, namely, resource productivity (entrance), final disposal amount (exit) and cyclical use rate (circulation). These indicators as illustrated in Figure 9 below reveal steady improvement and the goals set in the second Fundamental Plan for fiscal year 2015 for the recycling and final disposal amount have been achieved prior to the target year (Yolin,, 2015).

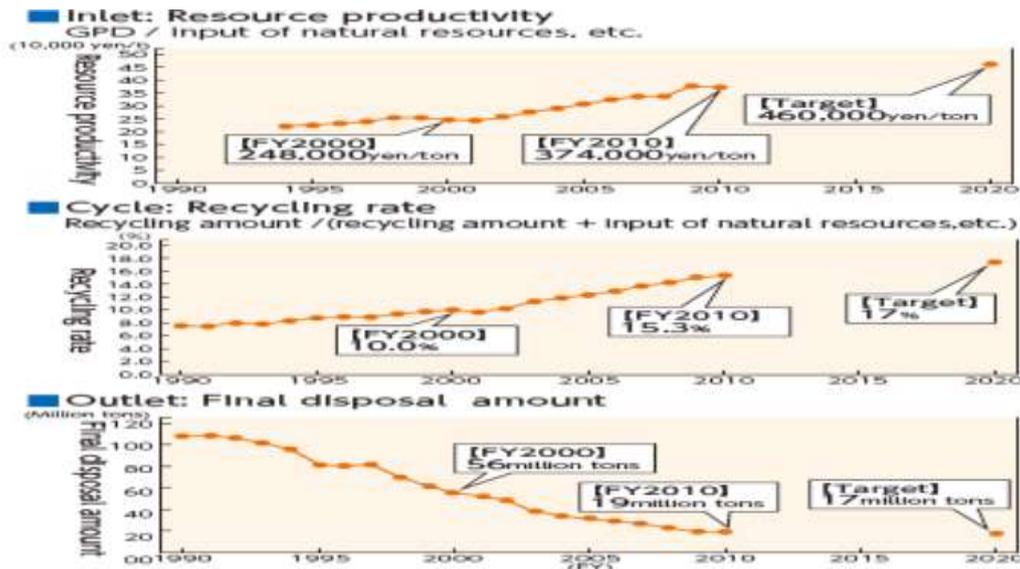


Figure 9: Material Flow Diagrams

(Source: AEHA, 2012)

*Establishment of Design for the Environment (DfE)*

Product Assessment Manual for Electric Home Appliances issued by Association for Electric Home Appliances (AEHA), available as a directive for product’s design with a lower environmental burden. This manual with specific categories as illustrated in Table 10 below is regularly updated and upgraded, allows Manufacturers to evaluate progress in the Design for the Environment (DfE) made by their new products. Home appliance manufacturers are working to improve the recyclability (disassemblability) of their products. Information sharing between recycling plants and manufacturers has been instrumental in improving such disassemblability (Hotta, 2014).

Table 10: Key considerations for environmentally-conscious design

Category	Steps to be taken
Reducing weight/volume	<ul style="list-style-type: none"> <li>• Making the products lighter with a thinner casing with the help of CAE (computer-aided engineering)</li> <li>• Making the product construction more compact to save natural resources</li> <li>• Reducing the use of rare materials</li> <li>• Reducing the number of parts</li> </ul>
Facilitating manual disassembly and separate processing	<ul style="list-style-type: none"> <li>• Unifying materials (using fewer types of materials)</li> <li>• Reducing the number of parts; organizing the parts into units</li> <li>• Improving the structure of the product and its parts</li> <li>• Labeling parts according to the type of material</li> <li>• Putting a recycling symbol on the product and its parts</li> </ul>
Using the recovered materials	<ul style="list-style-type: none"> <li>• Using recycled plastics</li> </ul>
Extending the product life	<ul style="list-style-type: none"> <li>• Improving the durability of parts and materials; improving the exchangeability of consumables</li> <li>• Facilitating maintenance and repairs</li> </ul>
Improving packaging	<ul style="list-style-type: none"> <li>• Reducing the volume of packaging; simplifying packaging</li> <li>• Using recovered materials</li> <li>• Labeling packaging to identify the types of materials used</li> </ul>

(Source: AEHA, 2012)

### Summary and Conclusion

By using an Attitude-Facilitator-Infrastructure Framework (AFI Framework) in policy analysis, the meaningful and important factors that contributed to the achievement of the 4 selected environmental regulations have been mapped out. As conclusion, the accomplishment

of the environmental regulations in Japan through in-depth and comprehensive investigation is because of:

- a. Japanese society have a right attitude and clear understanding on the importance of environmental protection and preservation
- b. Many mechanisms have been introduced and enforced to motivate and facilitate the best behavior of the stakeholders or society in Japan
- c. Best and appropriate facilities or infrastructures have been implemented, mainly by Japanese government, to achieve the best outcome from the environmental regulations that have been discussed above.

Nevertheless, there are some concerns that need the attention of environmental policy makers in Japan in the efforts to sustain the electronics industry in regards to the environmental performance in Japan. Four (4) highlighted issues that need to address for further research are:

- a. Illegal export and unacceptable or inappropriate management of e-waste overseas (HARL), dealt by establishing a set a guidelines on recycling, reuse and issuing the ministerial notices and strict enforcement of the Management Act and the Basel Act
- b. Increase in product price accumulated by improving energy efficiency is not clearly considered or ambiguous as well as lack of life-cycle analysis in their target setting (TRP)
- c. Right systems and mechanisms to stimulate the effective use or utilization of resources which combine the activity of recycling, renewable energy and natural environment conservation (LPEUR)
- d. Harmonization of the criteria of eco-labelling schemes between regions when the environmental impacts of the whole life cycle of the products are highlighted (TRP)

As conclusion, Japan's environmental policy have been regarded and perceived as successful in governing their environmental performance with effective and well-integrated stakeholder's participation that have been discussed in my paper. To address the future challenges for the benefits of next generations, I am suggest the following aspect for further study by the interested scholars in environmental politics and social sciences:

- a. The capability of the environmental regulations in promoting better design and production of eco-friendly products for the sake of future generation
- b. The best method and thought in environmental science in stimulating and fostering advanced technology for better resource recycling with minimum costs
- c. The environmental regulation's procedure that can standardize and increase the awareness for better and efficient 3R-deliberated design across border and region

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# Exploring the Mindsets and Well-Being of Rural Secondary School Students in Perak, Malaysia

**Zullina H. Shaari\***

*Department of Management and Humanities  
Universiti Teknologi PETRONAS  
Bandar Seri Iskandar, Perak, Malaysia  
Email: zullina\_shaari@utp.edu.my*

**Amzairi Amar**

*Department of Management and Humanities  
Universiti Teknologi PETRONAS  
Bandar Seri Iskandar, Perak, Malaysia  
Email: amzair\_amar@petronas.com.my*

**Azamudin Badri Harun**

*Department of Management and Humanities  
Universiti Teknologi PETRONAS  
Bandar Seri Iskandar, Perak, Malaysia  
Email: Azamudin\_harun@petronas.com.my*

**M. Radzi Zainol**

*Department of Management and Humanities  
Universiti Teknologi PETRONAS  
Bandar Seri Iskandar, Perak, Malaysia  
Email: mradzi\_zainol@petronas.com.my  
\*Corresponding author*

## **Abstract:**

**Purpose:** Using the two key trust identified by the state government of Perak, Malaysia i.e. mindsets and wellbeing, this paper aim to explore the critical factors that may have significant influence to the psychological condition (personal growth) of low achievers rural areas in the state of Perak, Malaysia.

**Design/methodology/approach:** The data were collected using close-ended survey and a purposive sampling method. With the assumption that not all school leavers be able to participate productively in the communities on their own, the participating students represent the students with below average academic performance and they are perceived as less likely to further academic endeavor after finishing secondary education than the average students.

**Findings:** The findings are presented based on profiles, mindsets, and personality types of low achievers.

**Originality/value:** It is crucial to understand the youth intelligence especially those school leavers who are non-academically inclined so that it will be able to inform the policy makers on the suitable programs and activities to equally equip them with the necessary participatory skills.

**Keywords:** mindsets; personality; youths; achievers; intelligence; psychology

**Paper Type:** Research paper

### **Introduction**

Perak Amanjaya, the state government of Perak, Malaysia has developed seven key thrusts for structural and non-structural development. Two key thrusts for the non-structural development intend to develop future human capital that is, having skilled, ethical and knowledgeable society and participative youth and social harmony.

Skilled, ethical and knowledgeable society equip each citizen with the right capabilities to participate effectively and sustainably in economic activities with high growth potential. Meanwhile, participative youth and social harmony is meant to safeguard the well-being of youth and the society irrespective of race and religion. This can be achieved through making quality opportunities available for active participation in socio-economic activities that will lead to social unity.

- The two key thrusts advocate the inclusivity of all community members in Perak ranging from school children to adults. Youth represents the most critical human capital to be developed. Such capability development often starts from schools. The inclination of youth to be academic or non-academic is often affected by a number of factors including mindsets and psychological well-being. Youth should be guided to be productive participants in the community as they are the successors of the current and aging generations.
- Up to January 2013, about 80 per cent of school leavers in Perak have opted not to pursue their education at tertiary level (IDR, 2013). The lack of interest in pursuing tertiary education among school leavers suggests that these school leavers are likely forced into the labor market as young as 18 years old. However, not all of them are equally equipped with the necessary skills. This scenario calls for non-academic programs should be available to these school leavers.

### **Research Objectives**

With the assumption that not all school leavers be able to participate productively in the communities on their own especially the low achievers, the research aims

- a. To identify the mindsets and psychological well-being of low achievers at secondary school students in the rural areas of Perak.
- b. To unravel the psychological needs of these low achievers to be participative youth in the community.
- c. To provide strategic direction in leveraging current mindsets and psychological conditions of low achievers at rural areas to be participative youth in the community.

### **Studies on Mindsets and Well-Being**

Mindsets (M) refer to a set of assumptions, methods, or notations held by one or more people or groups of people that is so established that it creates a powerful incentive within these people or groups to continue to adopt or accept prior behaviours, choices, or tools. A similar set of assumptions also exist about individuals' basic qualities (i.e. intelligent, personality and characters). Individuals with fixed mindset believe their qualities are carved in stone and have the urgency to prove themselves over and over whilst those with growth mindset believe their basic qualities are things they can cultivate through their efforts and are open to accurate information about own current abilities, even if it's unflattering.

According to Dweck (2012), individuals who believe their success is based on innate ability, have a "fixed" theory of intelligence (fixed mindset). They dread failure because it is a negative statement on their basic abilities. Others, who believe their success is based on hard work, learning, training and tenacity, have a "growth" or an "incremental" theory of intelligence (growth mindset). They improve their performance and learn from failures. Dweck (2012) argues that the growth mindset will allow a person to live a less stressful and more successful life. Students with fixed mindset believe their basic abilities, their intelligence, their talents, are just fixed traits. They pursue the goal of being look smart all the time and never look dumb. Students with growth mindset understand that their talents and abilities can be developed through effort, good teaching and persistence. They believe everyone can get smarter if they work at it.

A study on mindsets among returning-to-school adults revealed that striving for competence improvement had a positive impact on learning activities and outcomes, whilst striving to demonstrate competence or had a negative influence on learning and achievement.

Well-being (WeB) refers to the condition of an individual or group in five typical domains, namely, physical (medical), social, economic, psychological, and spiritual. High well-being is associated with positive experiences of individuals, whilst low well-being is associated with negative happenings. This research focuses on Ryff and Keyes' (1995) sub-domain of the psychological WeB, that is, personal growth. The research explores the critical factors that may have significant influence to the psychological condition (personal growth) of low achievers rural areas in Perak. The psychological condition of individuals represents the mental condition in which the qualities of a state are relatively constant even though the state itself may be dynamic. Such a mental condition is reflected in individuals' preferences which over time often develop into mindsets.

In psychology, preference refers to an individual's attitude towards a set of objects, typically reflected in an explicit decision-making process (Lichtenstein & Slovic, 2006). The process often involves two main psychological functions: judging and perceiving. Each main function has two sub-functions. The sub-functions of judging (J) are thinking (T) and feeling (F) and the sub-functions of perceiving (P) are sensation (S) and intuition (N). Keirsey (1988) posited that individuals have preferences in applying these functions [9]. Such preferences are manifested through how individuals communicate (abstract versus concrete words) and how they accomplish their goals (cooperative versus utilitarian tools). Abstract individuals are analogical, fictional, schematic, theoretical, general, categorical, symbolic, and figurative, whilst concrete personalities are indicative, factual, detailed, empirical specific, elemental, signal, and literal. Cooperative people get where they want to go by getting along with others, whilst utilitarian persons go after what they want in the most effective ways possible.

As illustrated in Figure 1, individual preference over words and tools can be associated with Myers' (1962) personality types known as Myers-Briggs Type Indicator (MBTI). Instead of leaving the personality types as four combinations of psychological sub-functions, Keirsey (1998) labeled the personality types (i.e. the configurations of inclination and habit) as artisan, guardian, idealist, and rational.

		<b>Words</b> (ways of expressing thoughts)	
		<i>Abstract</i>	<i>Concrete</i>
<b>Tools</b> (ways of pursuing goals)	<i>Cooperative</i>	Idealist (NF)	Guardian (SJ)
	<i>Utilitarian</i>	Rational (NT)	Artisan (SP)

Figure 1: Keirsey’s (1988) Four Personality Types

Each personality type can be differentiated based on seven factors namely language, intellect, interest, orientation, self-image, value, and social roles. The configuration of these factors in any individuals is called intelligence, that is, how well individuals act in given roles, namely, tactical, logistical, strategic, and diplomatic intelligence as summarized in Table 1.

Table 2: Four Intelligence

<b>Intelligence</b>	<b>Description</b>
tactical	being able to make smart moves that better one’s position
logistical	being smart in handling goods and services
diplomatic	ability to work well with people
strategic	ability to figure out complex ways and means to accomplish well-defined goals

In the order of high to low preference (see Figures 3 and 4), Keirsey (1998) theorized that idealists prefer being diplomatic, strategic, logistical, and tactical, whilst artisans tend to be tactical, logistical, strategic and diplomatic. Similarly, rational individuals are strategic, diplomatic, tactical and logistical, but guardians are likely being logistical, tactical, diplomatic and strategic. High preference of a particular intelligence over the other types of intelligence indicates an individual’s dominant temperament which has been highly developed at a particular development stage. The dominant temperament is often related to a mindset.

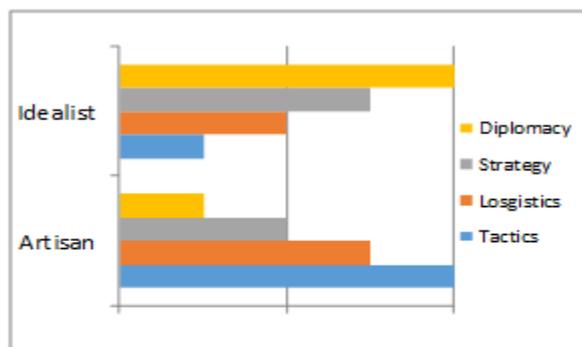


Figure 3: Intelligence of NF & SP

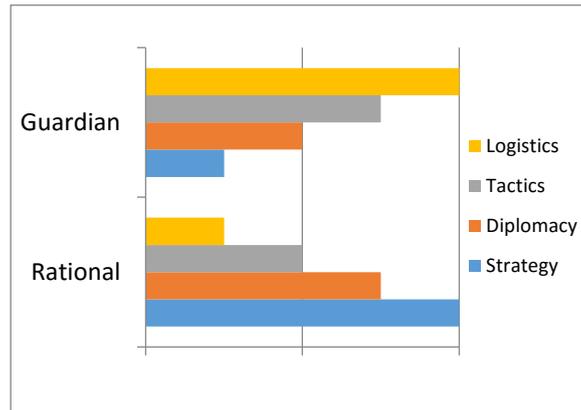


Figure 4: Intelligence of SJ & NT

### Methodology

The data collection involved a close-ended survey and a purposive sampling method.

The survey represented the self-administering paper-based questionnaires (37 items) divided into three sections: participant profile (11 items), personality types (16 items) and mindsets (16 items). The items of the personality types were adopted from the simplified version of Keirsey's (1998) Temperament Sorter (KTS) and of the mindsets were adapted from Dweck's (2006) Online Mindset Test. The items which were originally in English were translated in Malay by two independent persons and the meanings were cross-checked against the original items twice by the researchers.

The long version of KTS has been reported as having the internal reliability adequate for research purposes (Dodd et al., 2007; Waskel, 1995). The KTS has also been validated to measure similar dimensions of the Myers-Briggs Type Indicator (MBTI) which was commonly used in the US (Tucker & Giles, 1993; Quinn et al., 1992) and with non-clinical populations (Myers, 1987; Myers & McCaulley, 1985). The internal reliability of the Mindset Test was tested. The Cronbach alpha coefficient for the eight-item fixed mindsets has the Cronbach alpha coefficient reported of .65 while the Cronbach alpha coefficient for the eight-item growth mindset was .79. The coefficients suggest that the measures for the fixed mindsets have low intercorrelations whilst the measures for the growth mindsets have high intercorrelations. Both coefficients indicate that the measures have internal consistency for the given sample size (i.e.  $n = 858$ ) and the given number of items for each construct (less than 10).

### Procedures

Perak has a number of universities such as Universiti Perguruan Sultan Idris (UPSI) in Tanjung Malim, Universiti Teknologi MARA (UiTM) in Seri Iskandar, Universiti Teknologi PETRONAS (UTP) in Tronoh, UNIKL in Manjung, UiTM in Tapah and UTAR in Kampar. These universities are located in the two districts or regions, namely, Batang Padang and Perak Tengah with 40 secondary schools in the vicinity.

The two regions represent the rural areas in Perak. These two regions have the presence of at least two institutions of higher education in vicinity. For examples, Perak Tengah has two universities—Universiti Teknologi MARA (UiTM) Seri Iskandar and Universiti Teknologi PETRONAS (UTP), Tronoh—and Batang Padang has three universities—Universiti Perguruan Sultan Idris (UPSI), Tanjung Malim, UiTM, Tapah, and Universiti Tuanu Abdul Rahman (UTAR), Kampar. The participating students represent the students with below

average academic performance. They are perceived as less likely to further academic endeavor after finishing secondary education than the average students.

Permissions to conduct the research were granted between July to October 2013 from the relevant entities/departments namely, Ministry of Education (Kementerian Pendidikan Malaysia), Perak Education Department (Jabatan Pendidikan Perak) and two District Education Departments (Pejabat Pendidikan Daerah Batang Padang and Perak Tengah). The actual data collections started in the mid of October until the early of November 2013.

About 900 sets of questionnaires were distributed among form four students at 28 daily secondary schools (Sekolah Menengah Kebangsaan) in two regions (Perak Tengah = 11; Batang Padang = 17) as illustrated in Table 5.

Table 5: Secondary Schools in Two Regions of Perak

	<b>Perak Tengah</b>		<b>Batang Padang</b>
1	SMK Seri Iskandar , Seri Iskandar	1	SMK Sri Tapah, Tapah
2	SMK Dato' Abdul Rahman Yaakub, Bota Kanan	2	SMK Tapah, Tapah
3	SMK Layang-Layang Kiri,	3	SMK Bidor , Bidor
4	SMK Changkat Lada , Kg. Gajah	4	SMK Hamid Khan, Tapah
5	SMK Sungai Ranggam, Teluk Intan	5	SMK Chenderiang , Temoh, Tapah
6	SMK Iskandar Shah, Parit	6	SMK Buyong Adil, Tapah
7	SMK Sultan Muhammad Shah , Parit	7	SMK Khir Johari, Tg. Malim
8	SMK Sultan Muzafar Shah 1, Lambor Kanan	8	SMK Bandar Behrang 2020, Tg. Malim
9	SMK Lambor Kiri, Lambor Kanan	9	SMK Dato' Zulkifli Muhammad, Slim River
10	SMK Dato' Seri Maharaja Lela, Kg. Gajah	10	SMK Syeikh Abdul Ghani, Bidor
11	SMK Sultan Abdul Jalil Shah , Kg. Gajah	11	SMK Dato' Panglima Perang Kiri, Tapah Rd
		12	SMK Slim, Slim River
		13	SMK Air Kuning, Kampar
		14	SMK Sungkai, Sungkai
		15	SMK Sungai Keruit , Sungkai
		16	SMK Trolak Selatan, Sungkai
		17	SMK (Felda) Besout, Sungkai

### Finding and result

Of 922 questionnaires collected, only 858 were usable. The findings are presented based on profiles, mindsets and personality types of the low achievers.

*Profiles*

Tables 6 to 8 show the summary of respondents' profiles. The majority of the respondents were female (61%), Malay (89%), Muslims (83%) with the maximum household income of RM3000 and dual parentage (90%) with either parent has completed, at least, the secondary education (77%).

Table 6: Gender, Race and Religion of the Low Achievers

Gender			Race			Religion		
	%	#		%	#		%	#
Male	36	331	Malay	89	702	Muslim	83	709
Female	61	527	Chinese	2	34	Buddhist	3.7	32
			Indian	6	57	Christian	4	35
			Others	3	65	Hindu	6	52
						Others	3	27
						Unknown	0.3	3
<b>Total</b>		858			858			858

Table 7: Household Income and Parentage of the Low Achievers

Household Income			Parentage		
	%	#		%	#
≤ RM1000	46	398	Single	5	45
RM1001 to RM2000	30	257	Dual	90	768
RM2001 to RM3000	10	87	Guardian	4	35
RM3001 to RM4000	4	37	Unknown	1	10
> RM4000	8	63			
Unknown	2	16			
		858			858

Table 8: Parents' or Guardians' Highest Education

Parents'/Guardians' Highest Education								
	Single		Dual		Guardian		Total	
	%	#	%	#	%	#	%	#
≥ Diploma	< 1	4	14	50 (+72)	< 1	2	15	128
Certificate	< 1	4	13	73 (+42)	< 1	3	14	122
Secondary	3	24	50	334 (+93)	< 1	8	53	459
Primary	< 1	8	7	45 (+12)	1	9	9	74
Unknown	< 1	5	7	57	2	13	9	75
		45	91	778		35		858

### Mindsets

The mindsets of the low achievers at rural secondary schools are showed in Table 9 below.

Table 9: Mindsets of the Low Achievers at Rural Secondary Schools

		Male	Female	Total
<b>Fixed</b>	Count	170	288	458
<b>(proving basic qualities over and over)</b>	%	20	33	53
<b>Growth</b>	Count	145	196	341
<b>(cultivating basic qualities through efforts)</b>	%	17	23	40
<b>Neutral/Balance</b>	Count	16	43	59
	%	2	5	7
<b>Total</b>	Count	331	527	858
	%	39	61	100

Among the low achievers in rural schools of Batang Padang and Perak Tengah, the results suggest that the number of low achievers with the fixed mindset is higher than of those with the growth mindsets. Within each of the two mindset categories, female low achievers represent a higher number compared to male low achievers. Less than 10 percent of the low achievers appear to have a neutral or balance mindset.

### Personality Types

The personality types of the respondents are displayed in Table 10.

Table 10: Personality Types of the Low Achievers

	Types	Male		Female		Total		Interpretation: Intelligence (ability)
		%	#	%	#	%	#	
1	Artisan (A)	11	98	14	115	25	213	Tactical (working with equipment: Operators who promote & craft; Entertainers who perform & compose)
2	Idealist (I)	9	77	21	179	30	256	Diplomatic (Working with personnel: Mentor who teach & counsel; Advocates who champion & heal)
3	Guardian (G)	7	60	10	88	17	148	Logistical (working with material: Administrators who supervise & inspect; Conservator who provide & protect)
4	Rational (R)	8	67	12	101	20	168	Strategic (working with systems: Coordinators who arrange & conceive; Engineers who invent & architect)
5	A + either I or G or R	1	12	3	22	4	34	Tactical plus diplomatic, logistical or strategic
6	I + either G or R	1	12	2	14	3	26	Diplomatic plus logistic or strategic
7	G + R	< 1	4	< 1	5	1	9	Logistic and strategic
8	A + R + either I or G	0	0	< 1	2	< 1	2	Tactical and strategic plus diplomatic or logistical
9	I + G + R	< 1	1	< 1	1	< 1	2	Diplomatic, logistical and strategic
	Total		331		527		858	

About 39 % (335) of the low achievers with fixed mindset have the three personality types (i.e. Artisan, Idealist, Rational with one dominant intelligence (i.e. tactical, logistical, strategic), respectively. With the fixed mindsets, they likely prefer brushing up their existing intelligence, instead of developing other intelligence. For example, Artisans are likely interested in working with equipment and prefer to prove such skills over and over again; Idealists are likely to work well with people; Rationals are interested proving their skills working with systems.

Among the low achievers with growth mindset about 22% (183) of have two personality types (i.e. Artisan and Idealist). With the growth mindset, they have the potential to develop the next stage of Artisan and Idealist intelligences (see Figure 3), namely, diplomatic intelligence (i.e. working with personnel) and strategic intelligence (i.e. working with systems).

### Limitations, Future Research and Conclusion

- Currently, Perak has 10 regions with nine regions have daily secondary schools. The findings therefore do represent the mindsets and psychological well-being of the low achievers for the whole state. In 2011, six of the 28 daily secondary schools in the rural areas have been reclassified as urban schools (Jabatan Pendidikan Perak, 2012). This current study did not

discriminate the schools according such classifications since the study focused on gazette districts. Nonetheless, future studies should replicate this study to other regions and compare the mindsets and psychological well-being of rural and urban school students. Understanding the youth intelligence especially those school leavers who are non-academically inclined will inform the policy makers on the suitable programs and activities to the two key trust identified by the state government.

### **Acknowledgement**

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# Issues in Retrofitting Low Carbon Solutions for Residential Homes: A Critical Review

**M Radzi Zainol\***

*Management and Humanities Department  
Universiti Teknologi PETRONAS,  
Perak, Malaysia  
Email: mradzi\_zainol@utp.edu.my*

**Zullina H. Shaari**

*Management and Humanities Department  
Universiti Teknologi PETRONAS,  
Perak, Malaysia  
Email: zullina\_shaari@petronas.com.my*

**See Tho Wai Keng**

*Management and Humanities Department  
Universiti Teknologi PETRONAS,  
Perak, Malaysia  
Email: WaiKeng.SeeTho@finisar.com*

**Nurnazerah Julayhe**

*School of Business  
Universiti Teknologi Brunei,  
Brunei Darussalam  
Email: nazerahfaisal@gmail.com*

*\*Corresponding author*

## **Abstract**

**Purpose:** Residential buildings have been reported as the main contributor of carbon dioxide (CO<sub>2</sub>) emission worldwide. Existing homeowners most nations are either made to meet the zero mandatory or voluntary standards of such emission. One way of addressing this issue, they are encouraged to retrofit their residential properties with low carbon (LC) features.

**Design/methodology/approach:** This paper reviews researches related to LC retrofits in Residential Homes within the last 15 years (i.e. from 2000 to 2015).

**Findings:** The review reveals that LC housing studies have two primary focuses: methods and frameworks of implementing LC retrofit. Other aspects also include benefits, challenges, and sustainability assessment. The findings suggest that a variety of research on renovations/retrofits to reduce energy and CO<sub>2</sub> emissions for existing housing residential stocks has been conducted, but most of them pay little attention to consumer behavior. Minimal research has been done on how homeowners make decision in retrofitting their residential property with LC solutions.

**Originality /value:** This paper is to understand how the consumers make choices instead of the solving problem.

**Keywords:** Low Carbon; Retrofitting; Housing; Residential; Sustainable Retrofits; Reducing Carbon Emissions

**Paper Type:** Literature Review

### **Introduction**

*“We drastically need to cut emissions from all sectors, but the built environment offers the best cost effective opportunity to do that. We have the technology and the know-how in the industry, but we haven’t managed to mainstream these yet. So, the drive to cut carbon emission, quest for sustainability has put new challenges to engineers (i.e. doing more with less)”. Paul King, chief executive of the UK Green Building Council cited by Bhuiyan et al., 2015.”*

#### *The International Carbon Dioxide (CO<sub>2</sub>) emission fiasco*

Energy efficiency and climate change are topical issues over the world. Climate change has been a worldwide issue over the recent decades with substantial increase in global temperatures and extreme weather conditions (Nelson et al., 2010 cited in Low et al., 2014). For example, in the UK, the domestic building sector contributes about 23% of the national greenhouse gas emissions (Allen et al., 2008). Elsewhere, buildings contribute up to 40% of the use of energy and materials in Sweden (Byggsektorns, 2001; OECD, 2003). In China, buildings consume about 28% of the national energy consumption (Chen et al., 2012), with 95% of the existing buildings are categorized as high-energy buildings (Xu et al., 2013). It has been estimated that buildings provide the greatest potential for climate change mitigation (Pachauri et al., 2007; McKinsey, 2009).

Many countries and politicians worldwide are now taking actions to fight global warming and remedy its adverse consequences. This includes embarking on sustainable development. The construction of green and sustainable homes is one of the focus areas of sustainable development to improve the quality of living (Ezeanya, 2004; Tan, 2012; Tan, 2013). Houses are considered ‘green’ when they use environmentally friendly materials for construction such as recyclable timber products, recyclable roof systems, recyclable kitchen cabinets, certified energy efficient appliances, compact fluorescent lamps and light-emitting diode lighting system (Tan, 2013). According to WHO (2010), housing will have four characteristics: physical entity, provide facilities and feeling of home to occupants, its surrounding environment, and a feeling of neighborhood. ‘Healthy Housing’ means a quality housing itself, which necessarily need not to be designed with special care in residential setting, but meets the occupants’ preference and expectation (Bhuiyan et al., 2015).

The construction industry appears to be one main contributor to the emissions of CO<sub>2</sub> given that it consumes a large amount of energy (Marsonoa et al., 2015). The construction of buildings and their operation contribute to a large proportion of total energy end-use worldwide (Ma et al., 2012). In the building sector, most energy is consumed by existing buildings while the replacement rate of existing buildings by the new-build is only around 1.0–3.0% per annum. A building has a very long life-span, sometimes more than 100 years. During such a long period, a lot of repairs must be done or else the building will become dilapidated (Gustafsson, 2001).

Currently, residential buildings represent 65% of the global total sectorial emissions, and 35% for commercial buildings (Zaid et al., 2015; Baumert et al., 2005). However, the occupants of the residential building may not be conscious of their existing residential building impact on the environment. Since the replacement rate of existing buildings only around 1.0-3.0% per annum (Ma et al., 2012). Upgrading properties through sustainable retrofit can reduce energy use and carbon emission of existing residence (Swan et al., 2013). Sustainable retrofit is adopted to address the three energy-policy aims of the UK government; climate change, fuel poverty and energy security (Department for Trade Industry (DTI), 2006, 2007; Swan et al., 2013).

In the scholarly literature, modernization, retrofit and refurbishment are used interchangeably (Bell and Lowe, 2000; Hong et al., 2009; Kelly, 2009; Jenkins, 2010; Reeves et al., 2010; Swan et al., 2013) to describe the upgrade of a property's physical characteristics to improve its environmental performance. In this research, such upgrading refers to sustainable retrofit that includes upgrades to the fabric or systems of a property that may reduce energy use or generate renewable energy. The Building and Construction Authority (BCA) (2010a) defines "retrofitting" as "the provision, extension or substantial alteration of the building envelope and building services in or in connection with an existing building" (cited in Low et al., 2014). Retrofitting an existing building has shown its positive impact on the environment (energy savings in particular) (Ardente et al., 2011; Dong et al., 2005; Castleton et al., 2010), economic (Dong et al., 2005; Verbeeck and Hens, 2005) and social aspects (Neal and Tromley, 1995).

However, there are several barriers to reducing carbon emissions of the existing building. Retrofitting is not an easy action as it has complexity to perform as Gentoo Retrofit Reality Project (2010) stated that Retrofit is not simple, each house is different and every person behaves differently within their home (Stafford A et al., 2011). As from the previous studies, retrofitting has barriers and challenges. Such as, barriers that focus on policy, financial, knowledge and client demand factors (Hakkinen and Belloni, 2011). Moreover, according to Ma et al. (2012), the main challenge encountered is that there are many uncertainties, such as climate change, services change, human behaviour change, government policy change, all of which directly affect the selection of retrofit technologies and hence the success of a retrofit project.

Jenkins et al. (2010) posited that that the main challenge is the capital cost. A lot of money needs to be spent over the years. Many times, the owner of the building only looks at the direct building cost and tries to build as cheap as possible, even if this will result in high operating and maintenance costs in the future (Gustafsson, 2001). Furthermore, another barrier could be time where it may take a while before housing developers build homes using full-blown energy sustainability capabilities with recyclable materials, carbon neutral emission or water harvesting features (Tan, 2013).

#### *Malaysia's situation on CO<sub>2</sub> emission*

Between 1990 and 2004, Malaysia's carbon emissions grew by 221 percent (+221%). Such increase in energy demand from industrial and transportation sectors, was considered the fastest growth rate in the world (Zaid et al., 2015; Al-Jazeera, 2007; Watkins, 2007). By 2009, the demand increased by 210.7% from 1990, which led to carbon emissions growth by +235.6% (Energy Commission, 2011; IEA, 2011). Pursuant to this worrying trend, Malaysia had announced at the 2009 United Nations Climate Change Conference in Copenhagen (COP-15) a voluntarily commitment to reduce 40% of its greenhouse gas (GHG) emissions (from 1990 levels) by year 2020 (Department of Environment, 2010). Based on the findings of previous

studies, both new and existing buildings are estimated to have the potential in reducing energy consumption up to 80% using proven and commercially available technologies and with net profit during their lifespan (IPCC, 2007; UNEP, 2009). Enforcing energy performance requirements in building codes has been argued to be the most cost-effective strategy in reducing GHG emissions from both existing and new buildings (UNEP, 2009). In 2007, GHG emissions from Malaysian buildings accounted for approximately 4% of national emissions related to energy, at 3,947 Gigagram of carbon dioxide (GgCO<sub>2</sub>) or approximately 0.004 Giga-tonnes of carbon dioxide (GtCO<sub>2</sub>) (Malaysia Energy Centre, 2007; Zaid et al., 2015).

However, though in 2009, Prime Minister of Malaysia, Datuk Seri Najib Razak announced that Malaysia would cut 40% of the carbon emission intensity by 2020, the CCPI ranking has shown no improvement since 2005. In fact, Malaysia's ranking dropped slightly from 52nd in 2009 to 55th in 2013 (Marsonoa & Balasbaneh, 2015). The challenges include "lack of environmental considerations in the exploitation, development and management of resources as well as lack of control of pollution resources" (Hussein & Hamid, 2008; Zaid et al., 2015). In addition, Bhuiyan et al. (2015) mentioned another challenge is insufficient information and uncertainty in the building structure enable refurbishment (AzlanSha., 2010) such as physical condition of load bearing members, cracks, infiltration, or uncertainty in the whole construction project which may cause contingency cost allocation (Rayers and Mansfield, 2001).

With all these, minimizing carbon emission from new and existing buildings is vital for the abatement of climate change. Buildings that are designed and engineered to have low levels of carbon emission over their lifetimes are called low-carbon buildings (Sartori and Hestnes, 2007; Williams, 2010). Development of new buildings and retrofit of existing buildings to become LC buildings can significantly contribute towards the mitigation of climate change (Chen et al., 2011; Heinonen et al., 2011; Farhan et al., 2014). The market for retrofit green residential building in Malaysia is expected to grow from RM 13.82 million in 2011 to RM 16.34 million by 2016, growing at a CAGR of 3.4% from 2011 to 2016 (Tenaga Expo & Forum, 2015). It has been observed that the major driver for the market will likely be the regulations and initiatives by the Government of Malaysia to increase the awareness of energy efficiency as well as increase in product certifications standards by the government. It is estimated that consumption in both new and existing buildings could be reduced significantly by applying existing technologies, design, equipment, management systems and alternative solutions (Levine et al., 2007). Malaysia clearly has to make significant and urgent changes in its policy, economy, industries and lifestyle if it is to reduce its contribution to climate change. Without emissions mitigation and conservation policies, Malaysia is unlikely to meet its emissions reduction targets (Zaid et al., 2013). However, little is done to understand the issues related to retrofitting low carbon solutions for existing residential properties. This paper aims to highlight issues discussed in previous research since 2000 up to 2015.

## Method

The references and sources of information are varied; the author searched papers that relevant to the LC retrofits in residential homes. Most of the information are from the conference papers, and journal articles. Keyword entries "low carbon", "retrofitting", "housing" and "residential" are used to conduct the search and the fields selected for the placement of the keywords are "Title" and "Abstract". The authors also refer to a number of other articles obtained from the citations in the articles that appeared in the search results.

## Results

For nearly 30 years, research related to the LC retrofits in residential homes have been a topic of interest from various backgrounds. In this section, the author will elaborate more in details on the reviews of the previous studies. There are about six aspects and issues were found regarding to the LC retrofits in residential homes, namely: methods and framework; technical, economic and environmental implications; benefits or motivates; challenges; sustainability assessment; and lastly decision making. Table 1 summarizes the previous studies that focused on different aspects.

Table 1: Research Works on Low Carbon Retrofits of Residential Homes

<i>Issues</i>	<i>Literature Review</i>	<i>Freq</i>
Methods and Framework	Gorgolewski 1995; Gustafsson & M.Bojic 1997; Gustafsson 2001; Goodacre et al 2002; Zakaria 2007; Bernstein 2007; Stovall 2007; Dietz et al 2009; Conner 2009; Kavgic et al 2010; Hens 2010; Booth et al 2012; Stafford et all 2011; Xing et al 2011; Nabinger & Persily 2011; Boait et al 2011; Ma 2012; Abidin et al 2013; Lojuntin 2014; Wagner 2014; Judson & Maller 2014; Fawcett et al 2014; Low et al 2014; Marsonoa & Balasbaneh 2015.	24
Technical, Economic, and Environmental Implications	Goldman et al 1988; Cohen et al 1991; Mursib 1999; Al-Ragom 2003; Mahlia et al 2005; Dietz et al 2009; Muhammad-Sukki et al 2011; Al Yacouby 2012; Shekarchian et al 2012; M.Crilly et al 2012.	10
Sustainability Assessment	Jaggs & Palmer 2000; Alanne 2004; Zavadskas et al 2008; Zhao et al 2009; Barry, 2011; Bin & Parker 2012; Wagner, 2014; Charoenkit & Kumar 2014.	8
Benefits / Motivations	Conner 2009; Jenkins 2010; Preval et al., 2010; Dodoo et al 2010; Swan 2013.	5
Challenges	Conner 2009; Davies & Osmani, 2011; UNDP 2011; Stafford, Gorse & Shao 2011; Hori, 2013.	5
Decision Making	Bhuiyan, Jones, and Wanigarathna, 2015.	1

#### *Methods And Framework*

A study (Boait et al., 2011), on Carbon, Control and Comfort (CCC) project aiming at developing techniques for reducing carbon emissions (CO<sub>2</sub>e) for houses while maintaining desired comfort levels, using action research and user-centred design approaches to access the effects of both improved control technology and social issues surrounding control systems. Meanwhile, Goodacre et al. (2010) used a cost-benefit analysis (CBA) framework to assess the potential scale of some of the benefits from the comprehensive upgrading of heating and hot water energy efficiency in the English housing stock. The paper outlines the steps involved in the appraisal and sets out the underlying assumptions at its root. However, Hens (2010) mentioned about using a methodology based on EN ISO 13790 for calculating of energy use for heating, in this case specifically measurement for the two-stories houses. Another study mentioned various types of planning in the processes and steps that should be taken in order to proceed the residential development that could be beneficial to the society towards the LC solutions (Zakaria, 2007). The author suggested sustainable development in terms of, sustainability and planning concepts; sustainable housing design and development process; and the housing and indoor environmental quality.

Within European Union, there is an energy assessment tool for residential housing where, application of an Energy Demand Certificate (EDC) for new residential buildings and an Energy Performance Certificate (EPC) for existing residential buildings is the current practice (Wagner, 2014). The researcher focused on the adaptation and implementation of the EPC for tropical country in South-East Asia (SEA). The tool is implemented with an easy to understand scientific tool kit to measure CO<sub>2</sub>, including emissions, insulation, thermal comfort and cost. Another group of researchers proposed on a new approach to minimize the effects of CO<sub>2</sub> emission for buildings as well as to improve their structural stability for a longer lifespan. In this case, it encouraged the use of wood components as the materials for their residential building construction (Marsonoa et al., 2015),

A series of experiments performed by Stovall et al. (2007) to examine wall retrofit option including the retrofits cladding, insulations and methods for replacement windows were applied to a model to estimate whole-house energy impacts for multiple climates. Similarly, Hens (2010) discussed the renewable materials that, in the end relates to the energy efficient retrofits. Stafford et al. (2011) suggest fabric performance is fundamental to achieving significantly reduced energy consumption while maintaining acceptable levels of thermal comfort. Many basic insulation measures, such as loft insulation and cavity wall insulation (CWI) are relatively inexpensive and offer payback periods, which make them economically viable.

Kavgic et al.'s (2010) research described the methods and modelling techniques and discussed the bottom-up and top-down approaches regarding the energy consumption in the housing stock. The comparative analysis for the bottom-up building physics based on the residential stock models was aimed to establish the long-term targets related to housing stock energy consumption and associated CO<sub>2</sub> emissions. Similarly, Booth et al.'s (2012) study examined the different sources of uncertainty involved in housing stock models and proposes a framework for handling these uncertainties. The study mentioned that housing stock models could be useful tools in helping to assess the environmental and socio-economic impacts of retrofits to residential buildings. Another similar study done by Nabinger et al. (2011) summarized the measurement techniques and instrumentation used in the test house. The paper evaluated the impacts of air tightening retrofits on ventilation rates and energy consumption in a manufactured home.

Judson et al. (2014) examined to what extent low energy and other environmental concerns come into play in renovations when they are conceptualized as social practices. A practice theory approach is adopted to analyze the intersection of renovations/retrofits with homeowners' practices. The analysis highlights the disparity between policy intentions for energy efficiency and everyday life. It also suggested that among other interventions, those policies to reduce the environmental impact of housing should be reframed around.

In summary, the review revealed that the methods and frameworks focused on the process or methods of retrofits (Zakaria, 2007; Wagner, 2014; Kavgic et al., 2010; Booth et al., 2012; Nabinger et al., 2011), the materials for the residential homes (IEA, 2013) as well as the cost, for renewable material (Marsonoa et al., 2015; Goodacre et al., 2002; Stafford et al., 2011; Bernstein, 2007) and energy conservation and efficiency (Goodacre et al., 2002; Hens, 2010; Kavfic et al., 2010; Nabinger et al., 2011; Conner, 2009).

*Technical, Economic, and Environmental Implications*

A study done by Bernstein (2007) conducted to assess the impact of retrofitting old buildings with the energy conservation measures. It mentioned that, the highly subsidised cost of electricity imposes on the government and, if the government would seriously consider retrofitting all old residential buildings, the initial cost of retrofitting could be recovered in 6 years. After the sixth year, government can provide annual national revenue from the energy consumption. Similarly, according to Mahlia et al. (2005), the study projects electricity savings, cost-benefit analysis and emission reduction of lighting retrofits in Malaysia residential sector. The CBA is determined as a function of energy savings due to retrofit of more efficient lighting system. It found that this strategy save a significant amount of energy and consumers money. Moreover, the total potential monetary savings are more if the percentage of retrofits is high.

Muhammad Sukki et al. (2011) analysed the past activities related to solar energy in Malaysia, in terms of research and developments (R&D), the implementations used as well as the national policies for the past 20 years which have pushed the installation of PV in the country. It also discussed about the positive impact of the Feed-In Tariffs (FiTs) (Wagner, 2014; Muhammad-Sukki et al., 2011) in terms of economic, political, social and environmental (Muhammad-Sukki et al., 2011; Mendonca et al., 2010). However, paper by Crilly et al. (2012) argues that an exclusive focus on just one of technical, economic or social aspects of retrofit is inadequate. Depending on the fuel resources, fuel prices and future policies of Malaysia, the best combination of absorption and compression cooling systems can be chosen by policymakers. Other factors that can affect decision for retrofitting of cooling systems are inflation rates, initial costs, maintenance costs and emission production by each system that been mentioned in the study of Shekarchain et al. (2012). Another study done by Dodoo et al. (2010), the energy implications of building, specifically residential building retrofitting need to be considered in a life cycle, primary energy perspective, rather than focusing solely on final operating energy.

In summary, in the studies above are concerned about the cost saving (Shekarchain et al., 2012) from the tariff (Muhammad-Sukki et al., 2011), and the income for the society (Mahlia et al., 2005) and the government (Jaggs et al., 2000).

*Sustainability Assessment*

A study done by Jaggs et al. (2000) developed an evaluation tool to assess the condition of apartment buildings, carry out an energy audit of the building and assess the living conditions of occupants under the umbrella of one evaluation tool. The researchers developed the Energy Performance Indoor Environmental Quality Retrofit (EPIQR) assessment to explore the potential of reducing energy use. The results suggested the EPIQR could assess cost effective energy-related improvements for apartment buildings refurbishment and the EPIQR has become a marketable computer based multi-media program usable by a wide range of building professionals. Another proposed assessment tool has been the multi-criteria “knapsack” model to help designers conceptualize select the most feasible renovation actions of a renovation project (Alanne, 2004). A case study which highlighted the advantages and disadvantages of the decision-support method, was conducted in dealing with the retrofit project of a residential building.

In the Woodbine Project, the researcher emphasized the challenges faced when addressing the residential housing stock in a systematic, standardized approach (Barry, 2011). The project highlighted the necessity of using actual historical utility data when examining residential energy use and identified hazards or challenges to a retrofit, and gave an estimated amount of material required through providing square footage, house style, etc. Meanwhile, another group

of researchers combined material, energy and carbon emission studies that covers the life cycle of the house, including the direct and indirect consumption of material and energy, and concomitant carbon emissions during its stages of material extraction, transportation, construction, operation, and demolition (Bin et al. (2012) The study revealed the Residential Energy Efficiency Project (REEP) House had a typical impact on the environment when it was built and even when it was renovated for energy efficiency. Another study by Charoenkit et al. (2014) on sustainability assessment tools for urban projects including housing development found that nearly 20 tools were available, but compared the design-stage assessment of those internationally accepted and have open-source access namely, BREEAM-Community; LEED for Neighborhood Developments (LEED-ND); CASBEE-Urban Development and SBTool. In general, these previous studies have evaluated different types of tools for sustainability assessment regarding to LC retrofits in residential homes.

### *Benefits / Motivation*

It is reasonable that retrofits brought benefits to various components in this world, such as for the individual, society, country, and of course towards the environment. A study done by Preval et al. (2010) stated that benefits included reductions in wheeze, colds and flu, savings in admissions to hospital for respiratory conditions, and energy use and associated carbon dioxide savings (Howden-Chapman et al., 2007). On their studies, they carried out the CBA of Housing, Heating and Health Study and found that, the ratio of benefits to costs was close to 2:1, a highly favourable outcome (Howden-Chapman et al., 2007). In this case, they were studied the effect of retrofits whether it brings a good health or not to the society. Retrofitting a building to passive house standard reduce energy use, and Dodoo et al. (2010) stated the passive house standard is increasingly suggested to give a beneficial solution from both energy and economic perspectives (Passive House Institute, 2007).

Meanwhile, Jenkins (2010) study investigated two problems-- the lack of information and product performance, and proof of reliability-- to highlight an approach that could be mutually beneficial. Jenkins (2010) stated that by using one approach, the Rogers model for technology adoption (Geroski, 2000) would be to focus on the "willing-to-pay" sector; generally, households with significant disposable income and, in this case, ambitions towards achieving greater energy efficiency and reduced CO<sub>2</sub>. Similar findings-- the adoption and effectiveness of technology-- were revealed by Swan et al. (2013). The technology adopted comprised the low-technology fabric solutions: loft insulation, cavity wall insulation, doors and windows and draught stripping. As mentioned by (Jenkins (2010) cited in Swan et al. (2013)), a number of authors have identified the kinds of carbon savings that might be achieved through the application of different technologies. However, another study done by Swan et al. (2013) revealed that the drivers and barriers for sustainable which include social housing providers, the broad pattern of policy, regulation, clients, knowledge and finance.

### *Challenges*

A study by Davies et al. (2011), discussed different aspects of LC housing refurbishment challenges such as financial and business, design and technical, legislative, and environmental and cultural challenges. The main aspects of the financial and business challenges were the high cost of micro-generation technology and unequal VAT difference between new build and refurbishment as a major challenge. A major design and technical challenge represents the complexity of the existing housing stock. Besides, the diversity in housing tenure and build

type is most difficult features to overcome (Jenkins, 2010; Davies et al., 2011). Davies et al. (2011) also found that the lack of skilled site personnel as a critical challenge, followed by the lack of a uniform approach for applying sustainable strategies.

The lack of a housing refurbishment regulatory framework comparable to the Code for Sustainable Homes is a major legislative challenge (Davies et al., 2011). Under the environmental and cultural challenges, it was highlighted that there is a current incremental increase in public awareness, which helps create more sustainable developments. Also, it mentioned that the problem lies mainly within the private sector and the lack of government incentives (Davies et al., 2011).

Hori et al. (2013) had supported that it is difficult to control household energy consumption through regulation. It is particularly challenging to promote household energy-saving actions and identify the factor that influence people's energy-saving behaviors. More, the study identified the factor that possibly affecting energy-saving behaviors: global warming consciousness as knowledge, social interaction, environmental behavior, and demographic variables (income, age).

In summary, there is complexity of performance-effective and cost-effective retrofit intervention. In fact, retrofitting for energy performance is always a balance between the benefits and challenges (Stafford et al., 2011).

### *Decision Making*

Bhuiyan et al.'s (2015) study aiming at exploring possible reasons for the low uptake and presenting a theoretical model of the key decision points that influence the refurbishment process in social housing identified the importance of economic and social drivers alongside technical solutions in designing effective refurbishment interventions. The study presents the model in the form of a decision tree which will help built environmental professionals better understand the refurbishment process and develop effective business models that contribute towards sustainability by reduced energy consumption, improved thermal comfort. The study helps closing the performance gap by balancing the adaptation and mitigation measuring impacts. Although a wide range of software tools and retrofit technologies are readily available, methods to identify the most cost-effective retrofit measures are still a major technical challenge, there is still a lack of implementing quality and performance management techniques. This paper identified the poor business cases as the reasons of slow uptake of building refurbishment. To overcome the weakness a decision tree was developed from the literature that is based on business cases. The steps for the decision tree: firstly, identify the needs; next, find root cause where collect the information what makes the problems arise; then, need to gather all the key point indicators (KPI) or key success indicators (KSI); develop solution, where create and structure the possible strategies to solve the problems; lastly, evaluate solution and implementation.

### **Conclusion**

With the reference of previous studies, the investigations on the issues that related to the LC already had been done since 1988, however, the review only concentrates on the papers that had been published within the last 15 years (i.e. from 2000 to 2015), and there are various countries involved in doing research that related on LC for Residential Homes. For instance, United Kingdom (UK), United States of America (USA), Canada, Swede, Belgium, Australia,

New Zealand, Singapore, Thailand and Malaysia. Based on critical review of previous researches on low carbon retrofits, generally, most of the researchers on low carbon housing focused on retrofit methods and framework of implementing low carbon retrofits. Few studies have explored the technical, economic and environmental implications of existing building green retrofits. Very few studies have conducted on what motivates public and private building owners to pursue green and green building design initiatives. Research on how current residential home owners make decision in retrofitting low carbon solutions to their homes is rare, which is represented by the study in the UK Bhuiyan, et al. (2015). This suggests that investigating the how consumers make choices of low carbon solution can be a worthwhile quest in supporting the vision of achieving low carbon living.

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# **A Preliminary Study on Potential Homebuyers' Attitude and Acceptance of Green Homes in an Emerging Economy**

**Azamudin Badri-Harun\***

*Management & Humanities Dept.  
Universiti Teknologi PETRONAS Perak, Malaysia  
Email: azamudin\_harun@petronas.com.my*

**Zullina H. Shaari**

*Management & Humanities Dept.  
Universiti Teknologi PETRONAS Perak, Malaysia  
Email: zullina\_shaari@petronas.com.my*

**Nurain Shafiqah M. Jaafar**

*Management & Humanities Dept.  
Universiti Teknologi PETRONAS Perak, Malaysia  
Email: shashira48@gmail.com*

**Nurnazerah Julayhe**

*School of Business  
Universiti Teknologi Brunei  
Brunei  
Email: nazerahfaisal@gmail.com*

*\* Corresponding Author*

**Abstract**

**Purpose:** This paper aims to present a non-structural study of green homes in an emerging economy among end users. The study focuses on potential homebuyers' attitude and acceptance using an extended technology acceptance model (TAM)

**Design/Methodology/Approach:** The targeted respondents of the present study were residents within the proximity of the region with low carbon green growth agenda in an Asian emerging economy. Data were collected through self-administered questionnaire and analysed statistically. Twenty-five sets of questionnaire distributed among the academic staff of a public university closed to that region that were perceived as potential green homebuyers as dwellings or investments.

**Findings:** The findings gave insights for future research in assisting the front users (i.e. policy makers and industry players) on how to promote the adoption of green homes towards achieving sustainable living in an emerging economy.

**Originality/Value:** Although green or smart homes represent green growth agenda in the emerging economy, little has been done to investigate the demand in the marketplace. Therefore, it is vital to empirically investigate customers' attitudes and acceptance towards green homes and how they influence the adaptation intention.

**Keywords:** green; homes; acceptance; attitude; homebuyers; sustainability

**Introduction**

Growing concerns to have a sustainable living have spurred the need to have environmentally friendly built development. Of the development, residential buildings is one of the main contributors of carbon dioxide emissions. Green Buildings refer to buildings that are capable of reducing the negative effects of real estate development on the environment and human health with the aim of promoting sustainable life (Addae-Dapaah, Hiang, & Sharon, 2009). They are redefining and revolutionising building practice and emerging as a response to growing concern over pollution and environmental damage, increasing awareness and acceptance of climate change, decreasing natural resources, increasing energy cost, and increasing demand for sustainability in building design and construction (Aliagha, Maizon, Sanni, & Kherun, 2013). According to Jian & Zhen-Yu (2014), green buildings help improve the urban biodiversity and protect the eco-system by means of sustainable land use, and from maintenance perspective, green buildings perform better than conventional counterparts in terms of energy efficiency, water efficiency and cost efficiency. In other words, energy use, water use, indoor environmental quality, material selection and the buildings' effect on site will be the considerations of green building (Kriss, 2014).

Buildings are expected to consume as much electricity as industrial and transport sectors combined in a developing country like Malaysia (Shing & Tick, 2011). They have been particularly implicated as the major culprits for about 38% - 50% of the greenhouse gas emissions, but green buildings have been proven able to reduce 35% of carbon dioxide emissions compare to the conventional buildings (USGBC, 2003). However, Malaysian housing developers are still weighing the costs and benefits of building environmentally sensitive homes as many of them are concerned that there is not enough demand for these homes (Tan, 2012). Houses are considered green when they use environmentally friendly materials for construction such as recyclable timber products, recyclable roof systems, recyclable kitchen cabinets, certified energy efficient appliance, compact fluorescent lamps, and light emitting diode lighting system (Tan, 2012)

In order to promote sustainability in built environment, Malaysia has also created the country's very own green building rating tool known as the Green Building Index (GBI). GBI was developed specifically for the Malaysian tropical weather, environmental and development context, cultural and social needs (Green Building Index Organization, 2009). The rating of buildings based on GBI is centred on six major areas vis-à-vis indoor environment quality, energy efficiency, materials and resources, sustainable site planning and management, water efficiency and innovation (Aliagha, Maizon, Sanni, & Kherun, 2013). GBI is a rating system providing comprehensive framework for building assessment, which is similar to BREEAM in UK, LEED in USA, Green Star in Australia and Green Mark in Singapore (Shing & Tick, 2011). United Kingdom was the earliest country that started the green building rating system in 1990, followed by United States in 1998, and thereafter Australia in 2003, Singapore in 2005 and Malaysia in 2009 (Mona, Megat, Ibrahim, & Ting, 2013).

The critical success factors to achieve green building fall into three (3) categories, i.e. technical, managerial and behavioural (Jian & Zhen-Yu, 2014). This shows that it is important to raise the level of awareness of all stakeholders on concepts of sustainable development and green buildings, which explains the behavioural aspect of green building. Green homes are not just about the physical house being green, but the concept of a green home requires fundamental shift in attitudes and change in our habits (Tan, 2012).

However, in Malaysia, the developed GBI appears to focus on the structural aspects of the commercial and residential buildings with varying rating for a number of dimensions such as energy efficiency (EE), indoor environmental quality (EQ), sustainable site planning and management (SM), materials and resources (MR), water efficiency (WE) and innovation (IN). Although there was already a total of 271 GBI certified residential projects, (Green Building Index, 2015), lack of knowledge is a worrying barrier that hinders the growth of green home in Malaysia (Zainul Abidin, Yusuf, & Awang, 2012; Samari, Godrati, Esmaeilifar, Olfat, & Mohd Shafiei, 2013). A previous study found that the main problem of green home in Malaysia is the respondents' low level of acceptance towards green home (Alias, Sin & Aziz, 2010) and the purchase intention of green homes was not investigated (Tan, 2012).

The most recent study among Malaysian homebuyers using an extended theory of reasoned behaviour (TRB) revealed that attitude, perceived behaviour control, and perceived self-identity positively affected behavioural intention (Tan, 2013). However, the study did not specify the CAB components of attitude –affective, behavioural and cognitive. This suggests that a closer understanding of consumer behaviour is needed to predict market acceptance of environmentally sustainable innovation (Axel & Daniel, 2011). At the same time, these previous studies appear to investigate the non-structural dimensions of green homes separately from the structural dimension such as the importance of home features. Interestingly, a recent review on the factors influencing homeowner adaptation intention of green residence suggests that both dimensions—attitude, socio-economic, structure or design, and personality—may play a role in such intention (H. Shaari, in press), but each dimension may not equal degree of effects. Therefore, it is vital to investigate what is the attitude and the level of acceptance towards green homes among Malaysians, how they influence the adaptation intention and what degree of effect other dimensions have on behavioural intention.

This research used Technology Acceptance Model (TAM). In marketing, TAM has been used to investigate consumer behavioural intention in online business since its first introduction by

Davis (1989). For sustainable household technology, the product attributes and consumer characteristics significantly predict adoption intention (Ahn et al., 2016). The model has been employed to study user intention of green transportation (Chen and Lu, 2016). The rationale of incorporating TAM in the present research is that the study aims to investigate the respondents' acceptance or beliefs towards green home technology. The theory is made up from the elements of perceived usefulness (U) and perceived ease of use (E) and cognitive attitude. In psychology, the cognitive attitude represents the beliefs, thoughts, and attributes associated with an object.

To date, there were still limited research that studies the perceived ease of use and usefulness of green home technology. The TAM explains that perceived ease of use (E), perceived usefulness (U), and usage information are important in influencing attitude toward using a technology. The U represents enhanced performance through using the technology, while E represents effortless of using the technology. However, in order to promote green homes to potential buyers, the end users must have perceived value of using the technology. The equation to create value is represented as benefits minus costs. Since the idea of green homes or smart homes is still in the infancy stage in Asia (Panasonic, 2016), the value is considered as perceived value or importance (V). Therefore, the researchers propose that PU and PEU will influence the cognitive attitude towards using (A) which eventually affects the behavioural intention to use (BI). However, the relationship between A and BI is likely be moderated by V. The conceptual framework of the research is as in the Figure 1.

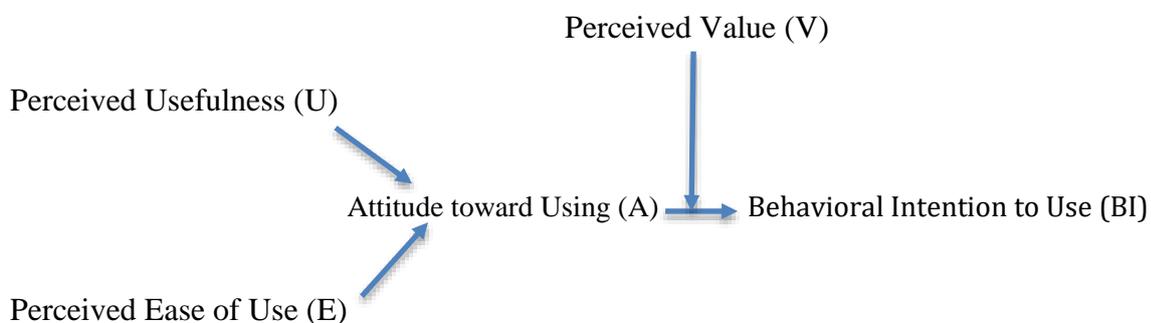


Figure 1: Conceptual framework for the present study.

### Method

In this preliminary study, the U, E and V were gathered using close-ended questionnaire. The questionnaires were made up of 4 sections i.e. Section A, B, C and D respectively. Section A contain questions on the respondents' knowledge on local property i.e. - "most properties in Malaysia are environmentally friendly", "property constructions materials are recyclable", "rainwater can be harvest for domestic use", "used water cannot be recycled", "most electricity is Malaysia is used for cooling", "Electricity in Malaysia is only generated at a power station by generators", and "energy efficiency helps to reduce carbon being released in the atmosphere". Section B was made up of questions on the perceived value (V) of green home features. The responses were measured using 7 point Likert scale, from 1- not important to 7- very important. The third section which is Section C, six questions on perceived usefulness (U) and seven questions on perceived ease of use (E) were asked. The items in Section C were adopted from Davis (1989). Responses for both U and E were using 7 point Likert scale, from 1- extremely unlikely to 7- extremely likely to allow researchers to capture deviations of the respondents' opinion.

The targeted respondents of the present study were residents within the proximity of the region with green focused agenda in the southern part of peninsular Malaysia (Ibrahim, 2013). Twenty-five sets of questionnaire among the academic staff of the management faculty at the national public university in that region. These respondents were perceived as potential green buyers as dwellings or investments.

### **Results and Discussion**

This section represents the descriptive statistics of the respondents' demography, and two independent variables (U, E) and a moderating variable (V). The respondents were mainly Malay (96%), female (68%) and within the age of 40 to 50 years old (60%) with postgraduate education (88%) and between RM5,001 to RM10,000 monthly income level (72%).

Among the items representing the two independent variables i.e. U and E, about 44% of the respondents perceived green home will extremely likely to allow them to experience a healthy environmental friendly residence and 52% of the respondents perceived green home systems are flexible to interact with, respectively. However, about 4 % of the respondents perceived that it will be likely easy to get green home systems to do what they want it to do. These results suggest that the idea of green homes has yet to receive widespread acceptance. Even among educated community members who were in proximity to the low carbon green development region, the acceptance appears to be limited.

The moderating variable, V, is reflected in the respondents' perceived importance of green home features. The top four out of 22 features were ranked as very important house features are indoor air quality control (48%), thermal comfort (44%), sound insulation (40%) and cooling system (32%). This suggests that two of the GBI elements (i.e. EE and EQ) were the main values that potential green homebuyers are looking for in purchasing green homes.

Since barely 50 percent of the respondents perceived the benefits of green homes, the promotion of the ideas should be more aggressive to create awareness before measuring the cognitive attitude among potential homebuyers. Meanwhile, although half of the respondents believed that the green home systems allows to interact easily, but most of them were sceptical on the reliability of the systems. These may indicate the dilemma of among potential homebuyers in determining the value of investing in green homes.

Meanwhile, since some GBI elements such as energy efficiency and indoor air quality were highly valued by end users, the green homes development should focus on them at its infancy stage. These elements could be the moderators for end users' behavioural intention to purchase green homes.

### **Conclusion**

The concept of green home requires a fundamental shift in cognitive attitudes among end users through knowledge and experience gathered from the front users especially the developers' marketing teams. Such shift can also be enhanced through personal experience in using green homes. The experience can be made available through actual demonstrations while visiting green homes exhibitions and show houses.

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# Identifying Factors that Influence Homeowner Adaptation Intention of Green Residence: A Review

**Zullina H. Shaari**

*Management and Humanities Department  
Universiti Teknologi PETRONAS, Perak, Malaysia  
Email: zullina\_shaari@utp.edu.my*

**Azamudin Badri @ Harun**

*Management and Humanities Department  
Universiti Teknologi PETRONAS, Perak, Malaysia  
Email: azamudin\_harun@petronas.com.my*

**Amzairi Amar**

*Management and Humanities Department  
Universiti Teknologi PETRONAS, Perak, Malaysia  
Email: amzairi\_amar@petronas.com.my*

**Mohamad Radzi Zainol**

*Management and Humanities Department  
Universiti Teknologi PETRONAS, Perak, Malaysia  
Email: mradzi\_zainol@petronas.com.my*

**Nurnazerah Julayhe**

*School of Business  
Universiti Teknologi Brunei,  
Brunei  
Email: nazerahfaisal@gmail.com*

*\*Corresponding author*

**Abstract**

**Purpose:** Low carbon infrastructure has gained attention across the globe since 2006. In built environment, a number of challenges have been identified to convince homeowners to support low carbon initiatives in a community. Some research conducted in developed and developing countries suggest that homeowners have positive attitude towards low carbon or green residence, but the adaptation intention of such residence may subject to homeowner socio-economic status and lifestyle. However, little is known what other factors influence the adaptation intention of green residence, which factors have the main influence on the intention and which factors mediate such influence.

**Design/methodology/approach:** This study reviews scholarly literature on consumer behaviors to present identified factors that influence adaptation intention and presents the conceptual framework to investigate the relationship among those factors in influencing homeowners to purchase green residence or to retrofit current residence.

**Findings:** The findings provide some insight on the non-structural dimensions of built environment and the framework will be investigated and validated in subsequent research works.

**Originality/value:** The study is to identify factors influencing homeowners' adaptation intention of green residence.

**Keywords:** green; intention; residence; attitude; homeowners; environmental

**Paper Type:** Literature Review

**Introduction**

In the context of built environment, several indexes have been introduced to recognize green or low buildings. For example, in developed countries, Building Research Establishment Environment Assessment Method (BREEAM) developed by the UK in 1990 has been used as the basis for developing new building assessment tools in Canada and Australia (Ding, 2008) while in the Leadership in Energy and Environmental Design (LEED) founded by the US has been adopted in 135 countries (Reed et al., 2009).

In the Asian region, an equivalent assessment tool has been introduced by Japan since 2001 for green building certifications (Fauzi and Malek, 2013). Similarly, in developing countries such as Malaysia, Green Building Index (GBI) was introduced in 2009 to promote sustainability in the built environment and to raise awareness among members of project teams, building owners, developers and other interested parties about environmental issues (GBI, 2015). This assessment tool represents an environmental rating system for buildings constructed in a tropical country and comprises six criteria, namely, energy efficiency (EE), indoor environmental quality (EQ), sustainable site planning and management (SM), materials and resources (MR), water efficiency (WE) and innovation (IN).

At moment, GBI gives varying emphasis on each criterion subject to two main categories of constructions: residential and non-residential and its use is yet to be made mandatory. For new residential properties to be considered as green buildings, the GBI places highest emphasis on SM followed by EE and equal priority on EQ, MR and WE, but consider IN to be the least contributor to green construction. Meanwhile, for new non-residential buildings, the GBI values EE the most, followed by EQ, SM, MR, WE and IN. Since these criteria with varying emphases are recommended for new constructions, the same emphasis may not be applicable to existing buildings. As suggested by the GBI website, existing buildings require retrofit to improve their overall quality.

While the GBI has a noble intention, the criteria appear to be bias for assessing the structural dimension of the green homes while a minimal focus on the non-structural aspect that is human related factors. Human-related factors often influence the EE dimension. However, little is known about what are the numerous possible structural and non-structural dimensions that influence homebuyers and homeowners to either purchase green residence or retrofit their current residence to achieve the green building status. Though some studies have revealed that consumer socio-economic status (Hu et al., 2014) and lifestyle (Haines and Mitchell, 2014) are part of the influencers, they have not specified which factor(s) of socio-economic is (are) the main influencer(s) which contribute to achieving one of the key criteria of GBI, that is, EE. This paper intends to present factors identified in the academic literature that influence consumer behaviors and present the conceptual framework to investigate the relationships among those factors for homebuyers and homeowners.

### Method

Since the GBI place high emphasis on EE, the study retrieved articles from scholarly publications, since 2001 until 2015. Using the keyword “green consumers”, “sustainable homes” and “green building”, 23 articles were retrieved from a number of journal publication as summarized in Table 1.

Table 1: Scholarly Publications Reviewed

<i>No.</i>	<i>Scholarly Publications</i>	<i>No. of Articles</i>
1.	Journal of Marketing Management (JMM)	1
2.	Journal of Consumer Behavior (JCB)	5
3.	Journal of Consumer Marketing (JCM)	1
4.	Journal of Marketing Studies (JMS)	1
5.	Journal of Consumer Affairs (JCA)	1
6.	International Journal of Consumer Studies (IJCS)	1
7.	Journal of Marketing Theory and Practice (JMTP)	1
8.	International Journal of Business Administration (IJBA)	1
9.	Journal of Business Management and Economics (JBME)	1
10.	Contemporary Management Research (CMR)	1
11.	International Journal of Management (IJM)	1
12.	Mediterranean Journal of Social Sciences (MJSS)	1
13.	Journal of Building Performance (JBP)	1
14.	Asian Social Science (ASS)	1
15.	Environment and Behavior (EB)	2
16.	Organization Environment (OE)	1
17.	Urban Studies (US)	1
18.	Building Environment (BE)	1
Total number of articles		23

### Results

In this section, the authors elaborate more in details on the review of the journals listed in the section II. The articles have been classified into four common concepts: attitude; socio-economic and demography; structure; and Personality as summarized in Table 2.

Table 2: Factors that Influence Homeowner on Green Residence

<i>Concept</i>	<i>Literature Review</i>	<i>No.of Articles</i>
<b>Attitude (cognitive, affective and behavioral)</b>	Laroche 2001; Mohr & Webb 2005; Mostafa 2007; Tantawi et al 2009; Han et al 2010; Jansson et al 2011; Kautish & Soni 2012; Polonsky et al 2012; Tan 2013; Averdung & Wagenfuehrer 2014; Dagher & Itani 2014; Schuitema & de Groot 2014; AbuAmer & Boolaky 2015; Al Nahdi et al; 2015	15
<b>Socio-economic and Demographic</b>	Hoffman & Henn 2008; Alias et al 2010; Jansson et al 2011; Anvar & Venter 2014; Hu et al 2014	5
<b>Structure</b>	Younebtob & Hostetler 2005; Hoffman & Henn 2008; Chau et al 2010; Noiseux & Hostetler 2010	4
<b>Personality</b>	Fraj & Martinez 2006	1
Note: The number total number of articles in Tables 1 and 2 differs since one article presented two factors.		

#### *Attitude*

A study done in Canada identified a profile of consumers who were likely to pay more for environmentally friendly products and elaborated marketing strategies arisen from an improved understanding of the profile of this segment of consumers (Laroche et al., 2001). From 907 respondents residing in a large North-American city, the study indicated that attitudes, values and behaviors had impacts on consumers' willingness to pay more for environmentally friendly products.

A later study conducted in the US, investigated the impact of consumer social responsibility (CSR) on consumer responses in the context of price differences (Mohr and Webb, 2005). The study discussed how external (or stimulus) factors affect consumer responses; discussed the impact of personal trait factors that were internal to consumers. An experiment with randomized full factorial design with eight treatment groups and two control groups was constructed to test the hypotheses. Using random sampling, a set of questionnaire were distributed to 1,997 adults through mail. The results indicate that CSR in both the environmental and philanthropy domains had a significant positive effect on evaluation of the company and purchase intent evaluates the company and their purchase intentions. Furthermore, a low price did not appear to compensate for a low level of social responsibility. These results indicated that many American consumers value CSR and may use it as a purchasing criterion even when there is not a product parity situation.

Among Egyptian consumers, a study in Kuwait investigated the influence of three cognitive and attitudinal factors on gender differences in green purchase behavior (Mostafa, 2007). The study analyzed gender differences in terms of environmental knowledge; environmental concern; and green purchase attitudes. A survey has been developed and administered across Egypt among 1093 respondents The findings confirmed the influence of consumers' ecological knowledge, concern and attitude on gender differences in green purchase behavior. Consistent with previous studies, this study found that women appeared to be less aware of environmental issues compared with men. Other studies conducted in the West, men showed more environmental concern and more positive outlook towards green purchase compared with women. The study discussed how the present findings may help policy makers and marketers alike to fine-tune their environmental and marketing programs.

Another study that was also done among 122 Egyptian consumers has a similar predicament to most developing countries in preventing pollution and preserving natural resources and is just

at the stage of green awakening empirically investigated the attitude of Egyptian consumers towards the environment in general (Tantawi et al., 2009). The results contradicted the traditional wisdom that an environmental concern was a luxury only affordable among the wealthy and shed a light upon the possibility of going green in Egypt.

In South Korea, a study conducted by Han et al. (2010) proposed and tested Ajzen's Theory of Planned Behavior (TPB) model to explain the formation of hotel customers' intentions to visit a green hotel. Consistent with the theory, the results of a structural equation analysis revealed that attitude, subjective norm, and perceived behavioral control positively affected intention to stay at a green hotel. Further investigation indicated the paths between these predictors and intention did not statistically differ between customers who actively practice ecofriendly activities and those who are not often engaged in environmentally conscious behaviors in their everyday lives. The study used a set of questionnaires where composed of three sections: to assess belief constructs; predictor constructs (attitude, subjective norm and perceived behavioral control) and intention measures; demographic information through a web-based survey (online market research company's survey system) among 3000 random U.S hotel customers.

Another study using the TRA done in the US presented a structural equation model that tested the relationships between carbon and environmental knowledge, environmental attitude and behavior using a sample of US consumers (Polonsky et al., 2010). An online survey was administered to a random sample of US consumers, using a commercial consumer panel. The target sample was 350 respondents and 395 responses were received, as the online process sometimes provides extra responses depending on how closely the cut-off rates are managed. Of the responses, 352 were deemed usable. The findings of the research suggest that a positive relationship was found between general and carbon-specific knowledge, attitude towards the environment, and general and carbon-specific behaviors. Therefore, general and carbon-specific environmental behaviors are related and may be driven by general attitudes and knowledge (i.e. both carbon-specific and general environmental knowledge).

A later study by Jansson et al. (2011) aiming to arrive at a better understanding of consumer adoption of a high involvement eco-innovation using value-belief-norm (VBN) theory showed that early adopters had a higher level of education and were much more likely to live in multi-person households compared to non-adopters. In terms of attitudinal factors, adopters exhibited higher levels of proenvironmental values, beliefs, and personal norms (PNs). This study also, can be classified under the socio-economic and demography category as the result showed the education level of the households. The study was done in Sweden, with a representative sample of adopters and non-adopters of alternative fuel vehicle (AFV).

However, in India, research done by Kautish and Soni (2012) had found that there is a little research on how consumers perceive their physical environment, whether they feel they can make a difference and what determines their willingness to search for environmental friendly products offered by companies. In order to overcome the deficiency, the paper investigates the roles of perceived consumer effectiveness and consumer income on search for such information. In this research, a survey was conducted on a heterogeneous sample of 251 Indian consumers in India. The responses from the consumers were examined by means of structural equation modeling (SEM). The analysis showed that highly percentage in search for information is accounted by perceived consumer effectiveness. It argued that perceived effectiveness on the part of consumers is an important determinant of their willingness to search for environmentally friendly products.

In a study done in Malaysia, Tan (2013) attempted to measure the intention of homebuyers to purchase green and sustainable homes using an extended theory of planned behavior model (TPB) in Malaysia. A survey among 252 potential homebuyers interested in new residential

housing projects revealed that attitude towards green housing, perceived behavioral control and perceived self-identity have positive casual effects on behavioral intentions to purchase such homes. The findings indicate that interdependencies among psychosocial variables are important extensions of TPB to predict behavioral intentions to purchase green and sustainable homes.

Later, Averdung and Wagenfuehrer's (2014) study in Germany explained post-adoption behavior using Technology Acceptance Model (TAM) for the adoption of environmentally sustainable innovations. There were three layers in the model, that is, consumer characteristics; attitude toward a service integrated eco-product and intended behavior. The study used a randomized sample of 105 first-time users of a service-integrated eco-technology. The result shows that TAM is a valuable methodological approach to gain insights into consumer behavior of sustainable technologies in the product-service offering.

According to study that done in Lebanon, Dagher and Itani (2014) examined about four factors that might influence green purchasing behavior that included the perceived seriousness of environmental problems, perceived environmental responsibility, perceived effectiveness of environmental behavior and concern for self-image in environmental protection. The results indicated that the perceived seriousness of environmental problems was the main contributor to green purchasing behavior.

In the case of Hahnel et al. (2014), the research introduced a model emphasizing the importance of consumers perceiving the environment-friendly products as being suitable to match their motives relevant to the product domain. The sample was 531 car drivers and the findings was based on structural equation modeling showed that participants' perceived matching with Electrical Vehicles attributes was related to their domain-specific motives (hedonic, freedom, ecological, and financial motives) and a global preference towards the product. Specific to sustainable products, ecological motives strongly influenced participants' matching processes by positively affecting perceived matching with all product attributes. Participants' purchase intentions, in turn, were strongly affected by their perceived matching of the product with their motives.

The study done by Schuitema & de Groot (2014) about the influence of product attributes and values on purchasing intentions. The study argue that there is a trade-off between the influence of product attributes on purchasing decisions, whereby it is assumed that consumers tend to focus on egoistic product attributes first, followed by green product attributes. In two experimental studies among 100 and 107 respondents, respectively, revealed the support for this reasoning: If product attributes fulfill self-serving motives (low price, familiar or well-known brand), green product attributes (cruelty free and low environmental impact) influence purchasing intentions more than when self-serving motives are not fulfilled (high price, unfamiliar or unknown brand). In general, if biospheric values are weak, egoistic product attributes are more influential, whereas if biospheric values are strong, green product attributes are more influential.

A recent study by AbuAmer and Boolaky (2015) in Abu Dhabi, Egypt is designed to offer practical green solutions for today's construction problems in the broader perspective. Green construction is not effective if it is not spread and flourished in the local property market. Since, consumers are the purchasing power and the real driving wheel of the industry (Moisander, Markkula and Erarnta, 2010, p. 75), evaluating consumer receptive mood is significant in advancing this new field. The main aim of this study is to investigate building features, which appeal to real estate consumers. Second, the study looks into possible marketing tools, which enhance the flourishing of Green Buildings. Finally, it aims to look into consumer behavior and reactions toward Green Building suggested solutions; risks and challenges of this newly born industry. The study used quantitative approach where, the survey was conducted in

available public space. The study stated that Primary data was collected through interviews and pilot tested questionnaires. The sample size was limited to 60 subjects (better to have a smaller dataset of accurate answers than a larger dataset riddled with errors). As the result of this study, it indicated that marketing Green Buildings is more effective when specific features are listed; efficient energy, indoor environmental quality, air quality and fresh air are just few examples of specific features that attract consumers to Green Buildings. This paper has argued that perusing consumer's preferences is the best instrument to advance and support the growth of Green Buildings. The key to success is to have Green Building expansion driven by consumer demand rather than enforced rules and regulations.

In the Saudi Arabia, Al Nahdi et al.'s (2015) research pursues and attempts to understand which particular dimensions of the subjective norm has the most significant influence on Saudi purchasers' behavior when purchasing housing. The study examines the effect of attitude, subjective norm (Spouse, Children, Parents, Friends and Reference group), and perceived behavior control on the intention to purchase real estate. A total of 300 questionnaires were distributed to respondents in Jeddah. Based on 220 questionnaires collected, the results show that there is a positively significant relationship between Attitude, Children influence, Reference group and Perceived Behavior Control toward the intention to purchase real estate, whereas the Spouse, Parents and Friends studies have not.

#### *Socio-economy and Demography*

In terms of socio-economy and demography, Hoffman and Henn's (2008) study surveyed the three levels of barriers: individual; organizational; and institutional, the paper concluded with strategies for overcoming them. In Malaysian context, Alias et al. (2010) focused on the people's acceptability and development problems that occur when developing green home by adopting case study and structural interviews methods among 50 respondents. The study was conducted to determine the reaction and level of acceptability of the homeowners in Malaysia. The findings revealed that uncertainty in people acceptability towards green home and the price were the biggest problems

Another study, Anvar and Venter (2014) was from South Africa, where, this study was to determine what factors influence attitudes and purchase behavior of green products among Generation Y consumers in South Africa. The factors that were investigated in the study were social influence, environmental awareness and price. Also, the study aimed to investigate whether consumer attitudes can in fact influence consumers' purchase behavior of green products. This study used data collections that have been conducted by means of self-administered questionnaires among 200 students between the ages of 18 to 23 year old. As a result, it indicated that social influence, environmental awareness and price, positively influence individuals attitudes towards green products.

The study, Hu et al. (2014) was done in the Netherlands. This paper employs a conjoint model to estimate the willingness to pay for green dwellings versus accessibility to metros and jobs and neighborhood quality by different socio-economic groups in Nanjing, China. The conjoint surveys were conducted at 21 real estate sales offices spread across the three market segments in Nanjing. A total of 1373 valid surveys were collected, and each choice-set was chosen by 150 or more respondents. As a result, it shows that the socio-economic status of homebuyers determines their willingness to pay for green attributes. Only the rich are prepared to pay for green apartments to improve their living comfort.

#### *Structure*

The study of Youngentob and Hostetler (2005), was done to determine if there were differences in sense of community (SOC) and environmental behaviors, attitudes and knowledge among

homeowners from three development types (traditional; post-World War II; and neotraditional). The results suggest that neotraditional design could play a role in influencing homeowners' SOC but that it may not go far enough in terms of promoting the environmental behaviors and awareness needed to form sustainable communities. There were total of 1,611 survey questionnaires mailed to all the selected participants, which may the potential respondents in Gainesville, Florida.

Hoffman and Henn (2008), paper argues that environmental progress in the building design and construction industry will continue to stall if the significant social and psychological barriers that remain are not addressed. The paper concluded with strategies for overcoming the barriers as the seven specific strategies are elaborated, namely, issue framing, targeting the right demographic, education, structural and incentive change, indemnifying risk, green building standard improvements and tax reform.

Chau et al. (2010) have successfully applied discrete choice experiments to reveal whether residents with green experience will have different preference and willingness to pay values for enhancements on various aspects of environmental performance in green buildings. The results suggest that green and conventional residents were willing to pay more for energy conservation, than indoor air quality improvement, noise level reduction, landscape area enlargement, or water conservation. No significant differences are found in the preferences between green and conventional residents for energy conservation, indoor air quality improvement, indoor noise reduction, or water conservation.

The study was done by Noiseux and Hostetler (2010) to determine if there were differences in their green design preferences, perceptions of the term green and retention of green marketing initiatives revealed that green design features are an important consideration for people buying homes in master-planned communities. The results were gathered from sites located in Sarasota and Manatee counties, Florida and the survey among 936 new homeowners.

### *Personality*

In the case of Fraj and Martinez's (2006) study conducted in Spain identified what values and lifestyles best explain environmentally friendly behaviors. Adapting the Values and Lifestyle scale and the Environmental and Attitude and Knowledge scale to the Spanish context, the researchers distributed a set of questionnaire among 573 individuals. The findings highlighted that environmental patterns and self-fulfillment values are those that best characterized the ecological market segment. This group of consumers is characterized by their self-fulfillment feeling who always try to improve themselves and take actions when posed with new challenges and by having an ecological lifestyle. The results of this study might interest consumer behavior researchers and those firms that care about the ecological consumers. Further research is needed including new psychographic variables.

### **Conclusion**

Based on the results above, the studies mentioned were from various countries: United States of America; Canada; Germany; Sweden; Netherlands; South Africa; Lebanon; Saudi Arabia; Kuwait; Egypt; India; South Korea, China and Malaysia. From the previous studies, literature reviews that had discussed in results section, it shows there are likely more researches done on Attitudes concept specifically on the Cognitive aspects, where it focused on the beliefs and values, thoughts and attributes. Under Attitudes, it can be divided into three components, namely: Cognitive; Affective; and Behavioral. Also, it was quite numbered of researches done in Behavioral aspects and lastly, only few studies done for the Affective aspect under Attitudes concept. Meanwhile, under Socio-Economic and Demography Concept, there are quite few of researches done in this concept, and this also the same with the Structure concept. Last but not

least, under the Personality concept, there are rare researches on it. Moreover, future studies may discuss on the Cognitive aspects and present conceptual framework to investigate the relationship among those factors that influence the homeowners' intention toward the green residence.

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# An Exploratory Review of Retirement Savings Investment Decisions: A Malaysian Perspective

**Marcia Edna Santhana Rajan\***

*Department of Accounting & Finance  
Faculty of Business & Information Science  
UCSI University*

Email: [marcia@ucsiuniversity.edu.my](mailto:marcia@ucsiuniversity.edu.my)

**Amalina Abdullah**

*Department of Accounting & Finance  
Faculty of Economics and Management  
Universiti Putra Malaysia*

Email: [amalina@upm.edu.my](mailto:amalina@upm.edu.my)

*\*Corresponding author*

## **Abstract**

**Purpose** - The scanty fractions of active participation in retirement decision making is prevalent despite the Malaysian EPF's improved endeavour in aiding the private sector boost retirement income through the MIS, the performance of which are so far reaching good returns on investment. Prior literature advocates the need for more meaningful understanding of the decision making biases that influence individual retirement saving initiatives. Research to-date has reported a growing interest of the influence of psychological factors on retirement savings decisions, ranging from clear-cut to varied results, with some indistinct findings. Against this backdrop, this study attempts to provide an understanding of how psychological motivators exert an influence on retirement savings decisions.

**Design/methodology/approach** – This study conducts a comprehensive literature review of psychological factors involving financial risk tolerance; conscientiousness; financial knowledge; and perceptions on tax matters.

**Findings** – Results suggest the fundamental roles that financial knowledge; conscientiousness; financial risk tolerance and perceptions on tax matters play both as main effects and symbiotic influences on retirement behaviours. These biases simultaneously exert a key influence on peoples' decision to save for retirement and form interactions with other psychological factors of interest to this study in motivating retirement savings behaviours. As such a preliminary framework of psychological “pushes” and “pulls” is proposed in informing this decision.

**Originality/value** – With the existence of limited literature on the perceptions on tax matters, this study is of value in that it highlights such an influence and its association with other factors of interest in informing the retirement investment decision.

**Keywords:** retirement savings decisions; retirement planning behaviour; retirement investment; EPF retirement planning; psychological factors.

**Paper type:** Conceptual paper

**Introduction***Retirement savings inadequacies – globally and in Malaysia*

The global acknowledgement that pension funds and retirement savings accumulation will fall well below sufficient levels caused by changing demographic trends; unfunded future liabilities; higher fiscal deficits; increasing economic uncertainties; inadequate benefits for retirees; as well as the alarmingly poor retirement savings rates among individuals, has driven many researchers both in quantitative as well as in qualitative works in the past decade in intensifying their efforts on conducting various studies on important psychological influences that are believed to have proximal effects on retirement savings tendencies, which in turn is central to the resultant levels of financial preparedness and stability during retirement (Tasdo & Gunu, as cited in Amoo 2008). Planning for retirement must commence early as acquiring the savings habit requires discipline and adequate time (EPF, 2015). A good plan therefore requires improved levels of personal financial / retirement planning in enabling an individual to achieve a desired lifestyle at retirement supported by sufficient income (Kapoor et al., 2009). However, studies on retirement planning revealed that there is a dearth of sufficient savings among individuals, connoting that such conditions will eventually create a stumbling block towards becoming financially sound and stable during retirement. For instance, American individuals were found to be saving at a worryingly inadequate rate and this raises concerns about their financial solvency and independence during retirement (Glass & Kilpatrick, 1998a; Warner, 1996; Warshawsky & Ameriks, 2000; and Yuh et al., 1998, as cited in Jacobs-Lawson & Hershey, 2005).

Similarly, such unfavourable retirement settings can also be traced to countries such as the United Kingdom, Canada, Singapore, and Thailand, to name a few. For example, the United Kingdom sees concerns of the current generation of workers not saving adequately for retirement (AMST, 2006). Likewise, a study sponsored by the Canadian Institute of Actuaries found that only one in three Canadians expecting to retire in 2030 are saving at appropriate levels in order to meet basic household expenses in retirement. Similarly, evidence produced by Oversea-Chinese Banking Corporation (OCBC) Singapore revealed that 74% of Singaporeans wish to retire before the mandatory retirement age but are ill-prepared for their retiring years. Thailand and its fast aging society are also not spared from this late life dilemma (AMST, 2006). The crux of the matter is the high likelihood of this worrisome retirement savings levels among individuals leading to consequential poverty in old age, or a need to continue working much longer, or a higher burden on governments and therefore future taxpayers as future pensioners rely more on government assistance.

Malaysia is not in isolation of this very predicament. According to the Employees Provident Fund's (EPF) CEO, Datuk Shahril Ridza Ridzuan, the only significant form of retirement savings for most Malaysians is the amount individuals accumulate in the EPF (i.e. the government agency responsible for the compulsory retirement savings of Malaysian private sector and non-pensionable public sector workers) (EPF, 2015). A survey conducted on 2,000 Malaysian retirees revealed that for a large proportion of these retirees, the benefits provided by the EPF, were not adequate to sustain their retirement lifestyle, thus having to rely on contributions from working children as a very crucial component of their retirement income to support their retirement years (Abdul Samad & Kari, 2007). Consistent with this finding, EPF's internal research revealed that only 22% of the 6.7 million active 54-year-old EPF contributors met the minimum recommended retirement funds of RM 196,800 in 2015 (alternatively stated, this minimum recommended amount meant a monthly income of RM820 until age 75, which is below the poverty threshold of RM830

per month in 2012 as indicated by the Department of Statistics Malaysia's poverty line income or PLI) (EPF, 2015). Even more alarming, 65% of the active EPF contributors aged 55 and 5 years away from retirement had less than RM50,000 (i.e. barely a quarter of the minimum recommended savings) in their accounts, while about 70% of contributors who withdrew their retirement savings in full will in actual fact exhaust their money within 3-5 years' time (EPF, 2015). In addition to the minimum recommended retirement fund of RM196,800 being but a scant consolation, the marginal achievement rate of this amount among the active EPF contributors are prevalent despite dividends from EPF being at an average of 5.86% (6.4% in 2015) in the last several years (Securities Industry Development Corporation, n.d.). EPF's Head of Strategy Management Department, Balqais Yusoff associated the current inadequacy in EPF retirement savings among contributors to the low salary structure in the country, whereby 89% of the working population earned less than RM5,000 which translated into a lower saving rate for the EPF (Bernama, 2016). Taken together, this suggests that it will not only be challenging for future retirees to remain financially independent in their golden years, but subsequently resulting in an equivalent societal burden when managing such retiree groups who have insufficient funds in their accounts. These state of affairs are in line with studies conducted by Glass & Kilpatrick, 1998a; Warner, 1996; Warshawsky & Ameriks, 2000; and Yuh, Hanna & Montalto, 1998 (as cited in Jacobs-Lawson & Hershey, 2005).

Furthermore, like many other countries, Malaysia is also experiencing a longer life expectancy and an ageing population. The life expectancy at birth in 2015 is 72.5 years for men and 77.4 years for women, an increase of 10.3 years and 10.9 years respectively as compared to the statistics in 1970. The proportion of those older is also increasing in Malaysia. For example, 8% of Malaysia's total population were aged 60 years and above in 2010 which is forecast to increase to 11% by 2020 (Department of Statistics Malaysia, 2015). All these circumstances further worsening the implied retirement setback.

In tackling this predicament, EPF has continuously made efforts to improve the members' retirement savings, the Members Investment Scheme (MIS) being the most prominent of their efforts in giving members the option of investing a portion of their savings with approved Fund Management Institutions (FMIs) and unit trust funds. This retirement strategy was designed to enable contributors to obtain the potential for higher returns, thus increasing retirement wealth accumulation and creating more sustainable retirement savings for better retirement preparedness. In addition, EPF has recently concocted 4 proposals intended to extend the mandatory contribution period and to further increase and sustain retirement funds for future retirees (EPF, 2015). The focus here however is on the EPF's MIS, and in response to this initiative researchers have conducted a few home-grown studies on various dimensions / factors that influence this retirement savings investment tendency. One of the early attempts of such empirical evidence in Malaysia was produced in Jamaludin and Gerrans (2014). In support of such studies, the aim of the current study is for a clear and thorough understanding of retirement planning in terms of the specific savings investment predispositions (i.e. via the MIS) among the Malaysian EPF members, with an ultimatum of utilising the relevant findings in aiding the government and EPF in improved policy making, thus in turn helping the nation's population in directing retirement funds towards greater adequacies for the retirement years.

With the current dilemmas in individual retirement savings world-wide, many researchers have strived to produce empirical evidence on understanding the important motivators that "push" and "pull" individuals to or from planning and saving for retirement.

In their pursuit of acquiring understanding of investor behaviour and decision making, scholars have focused their efforts on demographic influences that form “pushes” and “pulls” on people’s decisions to save / invest for retirement. It is well accepted that although demographic influences stimulate retirement savings decisions, their effect is mediated through psychological influences (Hershey, 2004). This signifies that psychological motivators play a big role in people decisions, the magnitude of this role weighing more heavily in contexts such as retirement savings decisions. Nonetheless, often overlooked are psychological influences (Hershey, 2004). This awareness has moved researchers in examining how psychological motivators direct individuals’ retirement savings decisions, which is the subject of this current study.

Given that a limited number of studies have examined psychological motivators on retirement savings investment decisions (for example, Clark-Murphy, Gerrans, & Speelman, 2009; Croy, Gerrans, & Speelman, 2012; and Jamaludin & Gerrans, 2014), these studies are still mostly derived from developed nations such as the US and Australia; evidence suggesting that large numbers of people are sluggish in their retirement investment planning activity (Mitchell et al., 2006; Agnew et al., 2003; Ameriks and Zeldes, 2004; Choi et al., 2002; Bowman, 2003; and Gerrans et al., 2006, as cited in Duong et al., 2013). The same predicament is echoed in the case of Malaysia. The negligible sum of EPF members involved in the retirement savings investment decision at the end of 2013 (The Star, 2014) confirms the participation of only the top 10% - 20% of the Malaysian working population in retirement planning (EPF, 2015). However, since the influence of culture is shown to predict various financial decisions, and are different to an extent across borders and between markets (Ciumara, 2012), this study appreciates the possibility of varying evidence concerning psychological influences of the retirement investment decisions.

In Malaysia, early investigations on producing empirical evidence pertaining important influences that “push” and “pull” individuals to or from planning and saving for retirement revealed some conflicting findings, namely financial knowledge (Jamaludin & Gerrans, 2014). Likewise, perceptions on tax matters posed another area of uncertainty. Such an influence has not been sufficiently ascertained empirically when making decisions about retirement savings and investments (Jordan & Treisch, 2010). Furthermore, bulk of literature on perceptions of taxes are limited towards tax concessions, benefits and reliefs (Holden & VanDerhei, 2001; Jappelli & Pistaferri, 2003; and Jordan & Treisch, 2010). The perceptions on tax exemption and its relative influence on investors’ retirement savings investment decisions has been limited in its exploration. In line with the EPF’s MIS being tax exempt (i.e. non-business income), as is with all investments in unit trust funds in Malaysia, this study explores the influence of this tax dimension, coupled with the role of the EPF members’ financial knowledge; financial risk tolerance; and conscientiousness, in the retirement investment decision.

Finally, looking forward, gaining a thorough appreciation of the forces that underlie retirement savings decisions must involve simultaneously examining main influences as well as the interrelationships between multiple psychological influences (Hershey & Mowen, 2000; and Jacobs-Lawson & Hershey, 2005). As prior research in Malaysia only focused on the independent influences of psychological factors on retirement savings investment decisions, this paper seeks to investigate how psychological motivators explored in this study form symbiotic relationships and jointly motivate Malaysians in investing their EPF retirement savings towards greater levels of financial preparedness. To this end, the goals that this study aim to explore are: 1) how do psychological factors motivate the Malaysian members of the EPF in making the retirement savings investment decision; and 2) can a preliminary framework of psychological “pushes” and “pulls” be proposed in informing this decision?

The remainder of the paper is organised as follows: section 2 provides a brief overview of the pension landscape in Malaysia and the EPF's MIS as a retirement savings investment decision. This is followed by a comprehensive review of some relevant theories and models in explaining the important motivators of social norms, and finally completing the review with the literature identifying the factors that are presumably significant in informing peoples' decisions to save / invest for retirement. The paper ends with a conclusion.

## **Literature Review**

### *The retirement savings investment decision in Malaysia*

The retirement savings investment decision in this study refers to the external investment of the EPF retirement savings with approved FMIs and unit trust funds under the MIS. The decision relates to whether part of retirement savings is invested in the unit trusts.

The tripartite effects of rising costs of living during retirement; alarmingly low retirement savings rates; and longer life expectancies among individuals around the globe including Malaysia, results in a distressing outcome of the inevitable possibilities of deficient retirement funds for retirees. This indicates a serious concern not only to the many older adults but to the current working population.

What is no longer an option, but compulsory, is that of an organised process of personal financial retirement planning that allows an individual to control and manage his / her financial situation, thus enabling economic satisfaction during the retirement years (Kapoor et al., 2009). That is, people can no longer assume an inactive role, relying solely on pension fund planning provided by national social security and pension fund systems. Instead, individuals must step up on taking on more aggressive roles in planning and managing retirement funds alongside pension systems within national structures.

In Malaysia, the pension landscape is dominated by the EPF which provides fundamental social security support and mandates national compulsory savings for Malaysians employed in the private sector ("Pension system in Malaysia – pension funds online," 2016). Public sector employees on the contrary, receive retirement provisions from the Pension Trust Fund and the Armed Forces Fund which form the second pillar in the national pension landscape.

The EPF retirement plan is fully funded and classified as a defined-contribution (DC) plan. The move from a defined-benefit (DB) plan decades ago was Malaysia's move to soar with the emerging markets and to rise alongside developed nations such as Singapore, Australia and the US, in relation to retirement systems ("Pension system in Malaysia – pension funds online," 2016). As opposed to DB plans, DC plans do not promise a guaranteed income upon retirement, whereby risk falls on individual employees (Murphy & Yetmar, 2010). Although the EPF pension structure is that of a mandatory DC system, it is not only critical that the institutional approaches adopted are effective in stimulating retirement savings by individuals. In fact, in recent times, more onus is placed on Malaysians in expectations to act more responsibly and aggressive in generating savings adequate upon retirement. This is especially demonstrated through the focus of this study, i.e. EPF's MIS. Currently the EPF is financed through contributions amounting to 23% of the employees' payroll, of which a minimum of 11% and 12% are contributed by employees and employers respectively. However, as research has shown (Abdul Samad & Kari, 2007; and EPF, 2015), despite such systems in place, Malaysia, like many Asian and Western countries, faces a common burden of coping with insufficient retirement income, owing also to the lack of responsibility and concern among Malaysians in actively planning and saving for the retirement

years. This is further compounded as Malaysia and the rest of the globe move through adverse demographic developments. Adding on, in Malaysia, unlike the US and Australia, occupational pensions (i.e. complementary retirement benefits provided by employers, for e.g. setting up self-administered trust funds) are scarce (for reasons linked to fewer tax incentives in supporting the development of such systems) and are only mostly limited to larger employers. This, at the moment, highlights the EPF as being the most prominent pension fund pillar in Malaysia, and must therefore accelerate efforts in restructuring systems and introduce improved retirement savings initiatives to cope with future challenges (“Pension system in Malaysia – pension funds online,” 2016).

Reforms by the EPF have mainly aimed at enhancing financial security in retirement through incentives that encourage longer contribution and a more prudent decumulation of accumulated retirement assets. Of interest here however, is the EPF’s MIS, aimed at steering members in assuming a more aggressive and responsible role in retirement planning where members are given the choice to channel part of their basic savings with approved external FMIs to further improve retirement income. A 20% withdrawal is allowed on the balance in excess of a basic savings level (Account I funds) for retirement investment in approved local unit trust funds. The basic savings are based on stipulated age entitlements (EPF, 2015). Disappointing however, out of the current 14.2 million EPF members, only a total of 744,139 members (for 2015, unaudited figures revealed 820,000 EPF members involved in the MIS) had invested RM29.48 billion in approved FMIs and unit trust funds at the end of 2013 (The Star, 2014), indicating that only a rough 5.24% of the total EPF contributors take on a more active role in retirement financial planning behaviour. Surprisingly, this idleness prevails despite reported results showing bulk of the EPF approved funds comfortably outperformed the set benchmark of 7.0% on an annualized basis (i.e. within the period of 2011 – 2015). This puts forward the notion that investors who consider putting their EPF savings with EPF-approved funds can potentially generate higher returns, in order to grow their retirement funds (Jidwin et al., 2010; and Fundsupermart.com, 2015). For the EPF, the meagre support shown pertaining the MIS does not hinder further attempts to motivate Malaysians in actively planning their retirement income. In order to further provide EPF members the advantages of a wider range of investment opportunities and improve their risk-return profile, the EPF had recently relaxed regulations in allowing members to invest in recognised unit trust funds that are 100% invested overseas (The Star, 2016). This relaxation is presumably fitting not only to the retirement savers, but also to the EPF in covering wider geographical opportunities to meet the growing size of funds; as well as breaks to the internal and external asset management companies in managing assets outsourced by the EPF.

In light of the above findings, as well as the endeavour of the EPF to help the next 40% - 50% (EPF, 2015) of the population in changing their investment and savings habit during their working life, to explore the psychological influences is imperative and of interest to this study. This would allow an appreciation of how such motivators form a push or pull to Malaysians in investing their EPF retirement savings through the MIS.

### **Investor Behaviour and Decision making Theories**

This study uses some relevant theories and models to explain the important motivators of social norms (i.e. the retirement savings investment decision). First, the theory of planned behaviour is explained alongside Hershey’s model of financial planning for retirement. This is then contrasted to an extent using the behavioural finance theory.

*Theory of Planned Behaviour & Hershey's Model of Financial Planning for Retirement*

The Theory of Planned Behaviour (TPB) (Ajzen, 1998; Ajzen 1991) was proposed as an extension from the Theory of Reasoned Action, with the inclusion of perceived behavioural control (see Figure 1). TPB proposes that individuals' intentions predict behaviours. An individual's intention is further determined by his / her attitude toward the behaviour; subjective norms; and perceived behavioural control. Attitudes are specific in relation to causing a particular behaviour. It represents an individual's positive or negative evaluation of a certain behaviour. Subjective norms are the individual's beliefs about how people they care about view the particular behaviour. These norms motivate an individual in conforming to people's views. Perceived behavioural control refers to the individual's perceptions of his / her ability to perform the particular behaviour. This dimension highlights an individual's perception of the level of difficulty in performing certain behaviour (Ajzen, 1998; Ajzen 1991).

Similarly, Hershey (2004) offered a model of financial planning for retirement (see Figure 2) that explains the factors specifically influencing investor behaviour. This is a modification of the Friedman & Scholnick (1997)'s model of life planning that suggests that planning decisions and behaviours are influenced by psychological influences, cultural influences, environmental influences, and task considerations. As this present study attempts to develop a preliminary framework of psychological "pushes" and "pulls" in informing the EPF retirement savings investment decision, this paper discusses how Hershey's model may be useful in supporting and further explaining the direct influence of a psychological dimension in motivating people's retirement investment behaviour.

In the past decade, psychology researchers have focused vastly on how psychological factors influence investor behaviour, contributing substantially to this line of research and body of knowledge. Psychological influences include personality traits, cognitive characteristics, and motivational factors that are all proximal determinants of investor behaviour (Hershey, 2004). Personality traits are a collection of enduring traits that mimic attitudes towards behaviour. That is, this trait perspective also represents a person's evaluation of certain behaviours. For example, a person's financial risk tolerance and conscientiousness determines his / her decision to save for retirement (Hershey & Mowen, 2000; and Grable, 2000). Cognitive factors are thinking skills that determine the quality of people's decisions, i.e. congruent to an individual's perceived behavioural control. For example, financial knowledge have been shown to trigger a person's decision to save for retirement (Jacobs-Lawson & Hershey, 2005). Finally, motivational factors, Hershey (2004) confers, are emotional states and goals that drive an individual's retirement behaviour, comparable to the norms that motivate an individual in conforming to people's views on the importance of developing positive retirement savings behaviour. For example, people's values and self-beliefs in relation to saving for late-life may be motivated by family values and beliefs in the same context.

Reverting to the TPB, Rutherford & DeVaney (2009) exemplify the factors influencing convenience of credit card usage, suggesting that an unfavourable attitude and a lesser influence of subjective norms were associated with the use of credit cards, whilst perceived behavioural control positively impacted the convenient use of credit cards. More recently, Davis & Hustvedt (2012), in their investigation of how people make financial decisions conclude that attitudes toward behaviour; subjective norms; and perceived behavioural control predicted saving for retirement. Notably, the researchers found perceived behavioural control to be the most important variable in predicting saving behaviours, advocating previous work by Thaler and Bernartzi (2001) that saving for retirement requires a degree of self-control in order to balance current spending

against future financial security, with evidence revealing that people wanted to save more but lacked the willpower (cited in Lester Wills & Donald Ross, 2002).

This paper places confidence in both theories which offer clear explanations on the important influences that presumably affect the EPF retirement savings investment decision among Malaysians. The vast application of the TPB across various disciplines in comprehending people's varied intentions and behaviours, especially in its solicitation in personal finance and personal money management, coupled with Hershey's model, demonstrates the effectiveness of these theories in informing how psychological influences may affect the EPF members in making the retirement savings investment decision in Malaysia.

### *Behavioural Finance Theory*

It was the work of Daniel Kahneman and Amos Tversky that introduced results from cognitive psychology into economics and finance (Anderson, 2008). Behavioural finance studies how psychological and sociological factors influence decision making and financial markets, in that, it examines how investors react to new information. Pike and Neale (2006) find that financial economics classically assume that people behave in a rational manner. Conversely, people have similar preferences; perfect knowledge of all options; and understand the consequences of their decisions. Therefore, although the aforementioned theories defend the importance of psychological dimensions in explaining retirement savings / investment behaviour, behavioural finance goes further in using psychology literature to clarify that people are however irrational in a systematic manner as opposed to the classical rational decision making theory (Pike and Neale, 2006). Advocating this, Barberis et al. (1998); and Daniel et al. (1998) in their investigations through generation of asset-pricing models explain returns that exhibit under reaction in the short run and overreaction in the long run, i.e. indicating the irrationality of investors. Such is the case of Malaysia, where only scanty numbers of EPF contributors were found in displaying active decision making behaviours with regard to the retirement savings investment decision (The Star, 2014). This is rather bizarre given evidence of the approved unit trust funds' track record over the most recent 5 years showing lucrative long term ROIs, informing that Malaysians seemingly demonstrate irrational retirement savings investment decision making, instead of preferring or willing to make an active decision in channelling permitted retirement assets into approved unit trust funds (Jidwin et al., 2010; and Fundsupermart.com, 2015). In its place, the preference is seen more in failing to save and accumulating assets for retirement. That is, Malaysians may tend to choose to consume a high fraction of income due to continuous high discount rates; and worst still, making wrong expectancies about longevity, their EPF retirement income, and consumption needs in their late-life, all revealing irrational behaviour in not recognising the seriousness of providing for their future. This belief is also explained by Poterba (1996) (as cited in Hershey & Mowen, 2000).

However, a growing concern relates to individual investors who have little or no knowledge about investing and how they manage their retirement savings. Benartzi and Thaler (2007) for example studied the diversification strategies of this group, with findings revealing that many 401(k) (i.e. a popular retirement plan in the US) investors appear to use simple rules of thumb in investing their money, suggesting that investors who are not equipped with basic knowledge risk making uncalculated retirement investment decisions. It is hence a pivotal interest of this study to look into how financial knowledge motivates EPF members in making rational / irrational decisions pertaining to the retirement savings option.

The above investigations suggest that behavioural finance grounds decision making in empirically validated psychological processes. In this study, this theory is utilised in examining individual investor decision making. Specifically, the retirement savings investment choice decision is studied as a decision making process of the Malaysian EPF members.

The examination of such theories are contributory as it offers psychology theory in informing classical economic theory by helping to explain the puzzle of inadequate retirement savings rates/attitudes, as well as the more complex financial decisions that burden individuals as they navigate their retirement savings decumulation process.

### **Psychological motivators**

In view of the relevant theoretical examination, the following section focuses on exploring the psychological motivators of interest to the study of retirement savings investment decisions among the Malaysian EPF members.

As proposed by the theoretical examination in this study, psychological factors represent major proximal influences that have a direct effect on retirement savings decisions. These include personality traits, cognitive ability and motivational factors. Researchers such as Borghans et al. (2008) in their study of economics and psychology, show that both cognitive ability and personality traits are symbiotic and are predictive of a variety of important social and economic outcomes. They advocate that certain personality traits (such as conscientiousness and emotional stability) are more predictive than others (such as agreeableness and openness to experience), and that tasks in social and economic life vary in terms of the weight placed on the cognitive and personality traits required to predict outcomes. Such findings are parallel to Hershey's model and are consistent with various studies conducted on retirement savings and investment behaviour, in which results confirm that both personality traits and cognitive factors are potent indicators of financial planning and preparedness (e.g. Lusardi, 1999; Neukam & Hershey, 2003; Jacobs-Lawson & Hershey, 2005). Examples of psychological influences given most attention by such researchers due to their high significance levels when associated with retirement savings / investing behaviour include personality traits: future time perspective; conscientiousness; emotional stability; risk tolerance; cognitive factors: financial and investing knowledge; perception of task relevance; and motivational factors: financial and retirement goal strength and clarity.

Although evidence points towards the significance of such factors in the retirement savings decision context, these results are mainly derived from more developed nations. Evidence from emerging markets such as that from Malaysia are scarce and in its infancy stage. Moreover, as culture is associated with financial decisions (i.e. termed 'national culture'), this study appreciates the possibility of varying evidence concerning psychological influences of the retirement investment decision in Malaysia. For example, national culture is shown to predict household finance (Breuer & Salzmann, 2009); the use of life insurance (Chui & Kwok, 2008); and the formation of national financial systems (Kwok & Tadesse, 2006), suggesting that, as cultural structures differ across borders and between markets, so would people's financial decisions and what would likely influence these decisions (as cited in Ciomara, 2012).

Coupled with the predictive power of psychological factors as well as the varied and limited evidence shown in some factors, this paper looks into exploring the role of the EPF members' financial risk tolerance; conscientiousness; financial knowledge; and perceptions on tax matters, in the retirement investment decision.

**Review of empirical literature***Financial risk tolerance (FRT)*

FRT refers to the maximum amount of volatility one is willing to accept when making a financial decision (Grable and Lytton, 1999). Yuh & DeVaney (1996) show that risk tolerant individuals have larger DC plans as compared to risk averse individuals. In this study: FRT is referred to as the level of volatility the EPF members are willing to accept when making the retirement savings investment decision.

Studies on investment literature generally indicate that risk-tolerant individuals prefer risky investments and thus have tendencies to invest in high risk options like equities. Conversely, those who are risk averse prefer investing in bonds and certificates of deposit. Similar findings surface from retirement savings investment. Yuh and DeVaney (1996) establish that the DC plans of risk tolerant individuals tend to be larger in comparison to those of risk averse individuals, suggesting that risk tolerant individuals prefer DC plans as it permits them more autonomy in allocating their retirement assets in suitable investments to take advantage of the risk-return profile. This also revealing the likelihood of these groups in attaining financial independence upon retirement.

Interestingly, Jacob-Lawson & Hershey (2005), report that FRT is an important variable in predicting individuals' retirement savings practices, both individually and interactively alongside future time perspective and financial knowledge. The researchers found the interactions between FRT, financial knowledge, and future time perspective to be statistically significant in determining retirement savings tendencies. Narrowing it down, FRT had a relatively small, but non-trivial, influence on savings practices for those with low future time perspective and high financial knowledge. In comparison, FRT exerted a relatively strong impact on savings practices among individuals with high future time perspective and high / low financial knowledge. This implies that people who are focused in the short term do not see the importance of planning for the future and hence their savings habits are not influenced by the degree of their financial knowledge or preference for risk. However, individuals who perceive planning towards a long term horizon as being important tend to weigh their risk and financial knowledge carefully in making plans to save for their retirement.

Nonetheless, there are yet some studies that show a different view on FRT. For example, Koehler, Langstaff, & Liu (2015) find that more financially risk-averse individuals saved more for retirement in response to a lengthening retirement period, than did less risk-averse individuals. One possible explanation for such a condition may relate to the fact that risk-averse individuals may generally own lesser funds and assets for late-life consumption, and would therefore not risk failing to save more especially when a longer period of retirement life is expected due to increased life expectancies over the years. Some studies have even shown that FRT had trivial effects on one's intention to save (Croy, Gerrans, & Speelman, 2010). Yet from another standpoint, studies reveal a distinction on the influence of FRT between the genders, concluding a varied evidence on whether women were more (for instance in Engstrom and Westerberg (2003)) or less risk tolerant (for instance in Speelman, Clark-Murphy, and Gerrans (2007)) as compared to the opposite sex.

In Malaysia, although such studies are sparse, Jamaludin and Gerrans (2014) establish early evidence revealing that the EPF members demonstrated an increase in the chances of making the retirement investment decision for those who had a higher level of risk tolerance. Their findings support the earlier notion that people with higher risk tolerance tend to have bigger DC plans (Yuh and DeVaney, 1996). Put together, such early evidence also suggests that only a small fraction of Malaysians may comprise risk tolerant individuals as these groups form the meagre sum currently making the EPF investment decision (The Star, 2014). This would also mean that the possibility

of grasping financial independence during retirement would also be closer or more likely for these individuals.

Although initial evidence on FRT and the role it plays in the retirement context within Malaysia is available, there is an absence of useful insights on the interactive relationships between FRT and other psychological factors of interest. The mixture of early and diverse evidence on the erratic levels of FRT in its role on retirement savings behaviour therefore warrants a further examination of FRT's main effects and the symbiotic relationships that may exist between the motivators of interest in this study in jointly informing the retirement savings investment decision among the EPF members in Malaysia.

### *Conscientiousness*

According to Bernstein et al. (1991), individuals with high levels of conscientiousness have a reliable and determined persistence in completing highly valued tasks and portray strict moral attitudes (as cited in Hershey, 2004). Ameriks et al. (2003) suggests that individuals who display more conscientiousness in their retirement planning accumulate more wealth (as cited in Binswanger & Carman, 2012). In this study: Conscientiousness refers to the level of reliability and determined persistence among the EPF members and its influence in investing retirement savings. Borghans et al. (2008) in their study of economics and psychology, show that personality traits such as conscientiousness are predictive of a variety of important social and economic outcomes, for example, retirement planning. Their study advocates that conscientiousness is more predictive than other personality traits such as agreeableness and openness to experience. Further, research pertaining to asset accumulation among young adults in America indicate that conscientiousness together with financial knowledge are consistent predictors of the criterion, more specifically, this trait had a significant impact on the net worth of these groups (Letkiewicz & Fox, 2014). Adding on, Ameriks et al. (2003) point out that people with higher conscientiousness are detailed retirement savings planners and thus have higher willpower in saving more, creating more retirement wealth (as cited in Binswanger & Carman, 2012). In line with these findings, Binswanger & Carman (2012)'s study on how formal and simple rules of the thumb planning impacts retirement wealth suggests that individuals with high conscientiousness (i.e. systematic planner) save more as compared to individuals with low conscientiousness (i.e. unsystematic planners) who saved substantially less. Surprisingly however, individuals who were regarded as simple rule of the thumb planners (moderate levels of conscientiousness) also behaved like planners. That is, people with moderate levels of conscientiousness also tend to make rational decisions in saving adequate levels of wealth for retirement. Such discovery though does not correspond to findings that advocate the behavioural finance theorising, in that, investors who applied simple rules of the thumb in investing and diversifying their retirement assets for late-life consumption risked making inadequate decisions that are deliberated as irrational in nature. This, thus calls for a deeper examination of conscientiousness in determining its role on retirement savings (Benartzi and Thaler (2007).

In Malaysia however, the research focus of this personality trait concentrates on work place performance and other forms of decision making initiatives. For example, Malaysians with lower levels of this trait were found to perform at lower levels at work, demonstrating tendencies to be deviant at the workplace. On the contrary, workers with higher conscientiousness invested exceptional effort at the workplace, displaying positive characteristics such as being orderly and organized (Farhadi et al., 2012). In line with this finding, students who were responsible and hardworking, with good discipline, and a high motivation level were shown to have greater

tendencies to perform well (Lim & Abdullah, 2012). In separate studies, high levels of conscientiousness among consumers revealed that this trait positively influenced these groups in their decision making towards advertising.

Moving further, Hershey & Mowen (2000) establish that conscientiousness forms an important trait in predicting retirement savings tendencies and more importantly were found to have a significant interaction with cognitive based factors such as future time perspective and financial planning knowledge. Their results revealed that higher levels of conscientiousness were positively related to high levels of financial knowledge and future time perspective, and these jointly influenced better financial preparedness for retirement. Collectively, these findings as well as later investigations (for e.g. Letkiewicz & Fox, 2014) promote the importance of a functional relationship between conscientiousness and financial knowledge in stimulating higher savings among individuals.

Taken together, evidence on conscientiousness not only suggests that different degrees of this personality trait influences people's positive or negative intentions, behaviours, and decision making initiatives, but that it significantly intermingles with other factors in motivating people behaviour and decision making. For Malaysians, the poor tendencies and initiatives in planning and saving for their late-life highlights a need to be more reliable and persistent in financial planning, particularly in the retirement savings decision making. Additionally, the literature also points towards the fundamental importance of instilling positive attitudes in relation to planning and saving for the future instead of frequent short term consumptions stimulated by high discount rates for example, a common problem observed in the Malaysian setting. A growing concern also relates to why most Malaysians do not actively participate in the EPF's MIS even after evidence of long term profitability, suggesting that most Malaysians may not have the required levels of conscientiousness, future time perspective, and financial knowledge in positively influencing this decision. Such evidence and belief definitely mandates an examination of how conscientiousness contributes in influencing the retirement savings investment decision among the EPF members in Malaysia.

#### *Financial knowledge (FK)*

FK in broader terms means to be financially literate (Gallery, Newton & Palm, 2011). FK may include objective and / or subjective measures, the latter including a self-assessment of an individual's understanding, ability, attitudes and behaviour with respect to financial and investment matters (Jacobs-Lawson & Hershey, 2005). As the current study revolves around the EPF member's retirement savings investment decision, this study operationalizes FK as the self-assessed financial and investment literacy among the members.

Among the various psychological factors studied, FK receives the lion's share of attention in relation to people's savings and retirement practices. Research to date has revealed that FK has a positive association with savings, investment, and retirement practices (Ekerdt et al., 2001; Grable & Lytton, 1997; and Hershey & Mowen, 2000, as cited in Jacob-Lawson & Hershey, 2005). This suggests that individuals with higher perceived FK are more likely to have adequate levels of retirement savings and would be more prepared for retirement than lesser financially literate individuals. For example, in the UK consumers were found to display low levels of knowledge and understanding about pensions and investments, causing them to plan and save below adequate levels for retirement (Sharon Collard, 2009). This then puts forth the notion that people may not necessarily fail to save adequately for retirement due to just a lack of concern about accumulating savings for their late-life, or a deficiency in a savings willpower, but that most people are also not

knowledge savvy when it involves saving and investing effectively for retirement. This view is in line with the TPB, theorising that FK among other perceived behavioural controls are in fact the most important variables in predicting saving behaviours (Thaler and Bernartzi, 2001).

Interestingly, research on this dimension also shows that FK is a significant predictor of the decision to contribute to a pension plan for women in their fifties, suggesting that the pre-retiree folks viewed FK as an important ability that would enhance or restrict their efforts in saving adequately for retirement (Hassan & Lawrence, 2007). The same outcome echoes in separate studies conducted on youths in Malaysia. Here, the researchers find that the level of education and majors specific to the study of Accounting and Finance undertaken by youths played a significant role in informing their general financial awareness (Nga et al., 2010). Although such studies were not explicit towards retirement planning, these results imply that youths who were more equipped with financial-based knowledge have higher financial awareness and an increased probability of developing positive savings and retirement practices. On this note, studies have shown that FK when enriched through various education programs may assist individuals' retirement savings behaviour (Ntalianis & Wise, 2010 & 2011). Hence, an increasing concern should be to promote the acquisition of adequate FK among people, especially at an early stage in order to reap the required levels of social and economic outcomes, particularly here, in the context of retirement. This would involve strategic and proper FK dissemination channels such as through education policies, public media, and financial advisory services (Kozup and Hogarth, 2008, as cited in Nga et al., 2010). In the absence of proper FK and FK channels informing people on the importance of savings and wealth accumulation for retirement, people risk planning ineffectively (resulting in old age poverty) or resorting to irrational forms of decision making as proposed by the behavioural finance theory.

Contrary to such validation however, in Malaysia, Jamaludin and Gerrans (2014) found no significant link between FK and the investment choice decision. The researchers' findings were in support of work done by Fry, Heaney, and McKeown (2007), which revealed that Australian individuals who had higher levels of FK on their existing superannuation preferred to remain with the default fund. This is rather bizarre as decision making should be based on knowledge (Jacob-Lawson & Hershey, 2005). Findings from Jacobs-Lawson & Hershey (2005) show that high levels of financial planning knowledge are associated with savings tendencies. This is also true as in the work of Lusardi and Mitchell (2006). Going further Jacobs-Lawson & Hershey (2005) also establish that FK forms an interactive relationship with future time perspective and FRT in motivating retirement savings practices. Here, evidence indicates that people with higher FK were more prone to plan and save for retirement, especially for those who were longer term focused and paid greater importance to the levels of risks they were willing to take on. This suggests that people who are better equipped with FK and are concerned about uncertainties; risks; and planning for the future, have higher tendencies to save for late-life consumption. In light of the observed importance of FK, coupled with some mixed evidence, it is of interest to further explore FK and how it influences the retirement savings investments among the EPF members.

#### *Perception on tax matters (PTM)*

PTM refers to the perceived relevance and importance of tax concessions / benefits / savings that one attaches to their retirement investment decision (Jordan & Treisch, 2010). As cited in Jordan & Treisch (2010), in Australia, private pension schemes are tax-privileged in different ways. Thus, the choice to choose a retirement investment option that is tax-advantaged can involve significant

financial savings for the private investor since certain savings plans similar to the 401(k) plans in the US provide tax deductions for contributions and tax deferral on account earnings. However, the EPF's MIS is tax exempt [non-business income, Sec.4(c)], as is with all investments in unit trusts in Malaysia, and therefore in this study the PTM refers to the perceived importance of tax exemptions to the EPF members when making the retirement savings investment decision.

According to the Organisation for Economic Co-operation and Development (OECD, 2007), in improving private retirement savings, many private retirement plans receive tax benefits (as cited in Jordan & Treisch, 2010). Providing such benefits for private pension schemes can be successful only, if the investors do in fact consider taxes in their retirement savings decisions. On one hand there is research evidence showing that taxes do influence retirement savings decisions (Holden & VanDerhei, 2001), whereas on the other hand, there is conflicting evidence showing that there is no such influence (Jappelli & Pistaferri, 2003), reasons stemming from investors' lack of tax knowledge, among others. All these postulating inconclusive evidence on whether taxes matter when saving for late-life.

Chan & Stevens (2008) characterise retirement behaviour as being strongly affected by pension incentives. Specifically, their study revealed that well-informed individuals were far more responsive to pension incentives whereas ill-informed individuals seemed to respond systematically to their own misperceptions of pension incentives. The researchers infer that the heterogeneity in responses between such individuals towards financial factors in deciding their retirement behaviour directly relates to their level of knowledge about such incentives. This signals two important notions. Firstly, the essential role of pension incentives in retirement behaviour, and secondly, the interaction between FK and pension incentives in influencing retirement behaviour. For the current study, this further implies the possibility of tax exemption as a pension incentive emerging as an important factor as well as its interactive role with F in motivating EPF members to invest their retirement savings.

Adding on, Jordan & Treisch (2010) in their qualitative work in Australia focused on a broader understanding of decision making as a social process. They investigated real processes and considerations that led to decisions about retirement savings by means of qualitative interviews with private investors and their respective bank advisors who recently made a decision to join a private retirement plan. Out of the 19 bank customers and 5 bank investment consultants interviewed, only 1 bank customer and 1 bank investment consultant indicated tax benefits as an influential criterion in the decision for a retirement plan. This, the researchers infer that tax benefits do not matter much, neither with regard to the general decision to invest for one's retirement, or regarding the choice of a specific investment product. The researchers go on to suggest that the investors' decision making process is flawed as according to economic theory, rationale investors are supposed to choose investments which maximise after-tax returns. However, in consulting the behavioural finance theory, people do in fact make irrational decisions in a systematic manner (Pike and Neale, 2006), this then creating a debate between both theories in explaining the importance of PTM on retirement savings decisions. The only financial aspect that drew investors' attention to retirement plans was the prospect of higher returns to be attained on a riskless savings account. Financial aspects in terms of maximised returns and FK were of rather little relevance. In aggregate results show that FRT, FK, and PTM all have minor relevance in influencing the investors' decision making process in retirement savings – indicating a possible interaction between these factors in motivating retirement savings decisions.

Finally, it is worth noting that in Malaysia, the major growth in the mutual fund industry was only seen in the 1990s when Malaysia was given a boost by the government through several different

incentives, one of which being the tax exemption on all interest income (Ramasamy & Yeung, 2003). Although the tax exemption on mutual fund investments do not constitute an exhaustive element in motivating the industry's growth, it however implies that such an incentive does form a stimulus. This thus motivates the current study in examining the PTM and its influence on the retirement investment decision.

As relevant evidence originates from developed countries, and in particular, Australia, it is hence of interest to further explore and understand the PTM and how it influences the retirement savings investment choice among the EPF members in Malaysia. Furthermore, in Malaysia investigations on tax matters have mainly concentrated on issues relating to goods and services tax (for e.g. in Choon Ling et al., 2016), and tax avoidance and evasion matters (for e.g. in Kasipillai, 2003), among others. The perception on tax exemption has been rather limited / null in its exploration, and as such the examination of this dimension may add early findings to the retirement context.

### **Conclusion**

The distressing problems associated with retirement is characterised as one of a global predicament. People can no longer assume an inactive role, relying solely on national pension fund systems. For Malaysians, this emphasises the expectation to be more accountable in aspects of social security, an expectation that is reflected in the EPF's current reforms, such as the MIS.

The examination of theories employed in this study are contributory as it lends psychology theory in informing classical economic theory to explain the dilemma of inadequate retirement savings rates / attitudes among people.

We believe that a comprehensive appreciation of psychological decision making biases that influence individual retirement saving initiatives are critical in helping to solve important puzzles associated with the retirement problem. Our findings recommend the fundamental roles that Financial Knowledge (FK); conscientiousness; Financial Risk Tolerance (FRT) and Perceptions on Tax Matters (PTM) play both as main effects and symbiotic influences on retirement behaviours. That is, such psychological biases not only exert a key influence on peoples' decision to save / invest for their late-life consumption, but additionally form interactions with other psychological factors, including factors of interest in this study, in motivating retirement savings behaviours. As such a preliminary framework of psychological "pushes" and "pulls" is proposed in informing this decision (see Figure 3).

Although past research outcomes reveal that these motivators are directly associated with retirement investment decisions, they are nevertheless diverse. The varied evidence suggests that such decisions are complex social processes guided by multiple rationalities. For example, Jordan & Treisch (2010) highlight the multitude of difficulties individuals encounter when deciding on their actual retirement investment decisions despite available expert advice. Thus, the combination of prior mixed results, as well as the limited exploration of such influences in lesser developed nations such as Malaysia, unquestionably, demands for a more thorough investigation to develop a more meaningful understanding of psychological dimensions in informing retirement savings investment practices among EPF members in Malaysia. Of additional interest to this study is the PTM and its association with FRT, conscientiousness, and FK and their combined influence on the retirement investment decision. We conclude that such an incentive does matter in decision making and would therefore constitute an important element in stimulating people's decision to invest for retirement.

We believe, such a study will be of significance to the government and to the EPF as policy makers as the relevant findings will shed important light into understanding in-depth, how psychological

factors may influence the tendencies to plan, save and invest for retirement. Such understanding and awareness will not only contribute towards improving the current retirement savings policy (i.e. through the MIS) in Malaysia, but it will also provide assistance to the EPF in their endeavour to help the next 40% - 50% of the population in changing their investment and savings habit for retirement.

Finally, as the same psychological factors that influence investor behaviour would influence the thoughts, decision processes, and judgements of financial advisors (Hershey, 2004), this study contributes as financial advisors are then able to reflect on their own psychological biases to better understand themselves as well as be in a more strategic position to appreciate the psychological pushes and pulls of individuals' retirement investment decision making. Findings from this study could also assist financial advisors in obtaining more complete sets of psychological profiles (and in combination with demographic profiles) and understanding such valuable information to further influence and encourage people towards a more active participation in retirement savings investment decisions. This will assist directing people towards improved attainment of their financial needs, goals and long term retirement plans.

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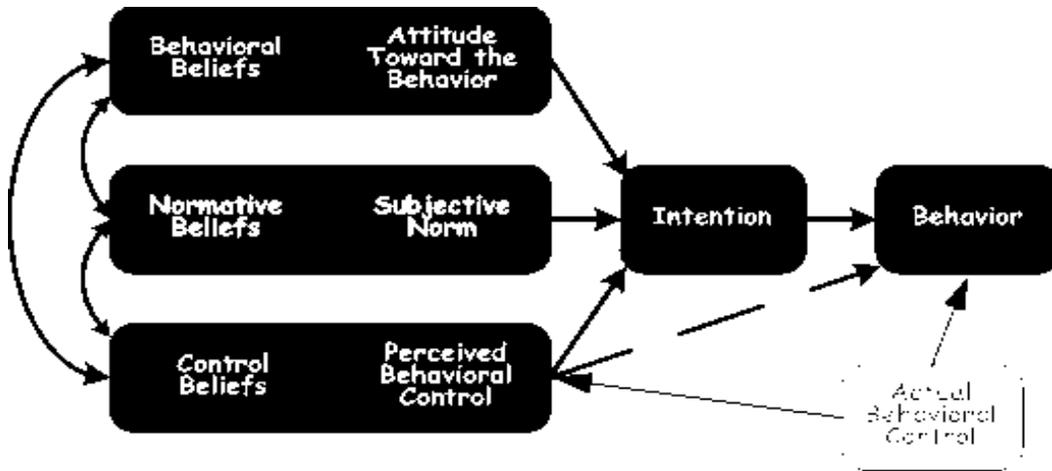
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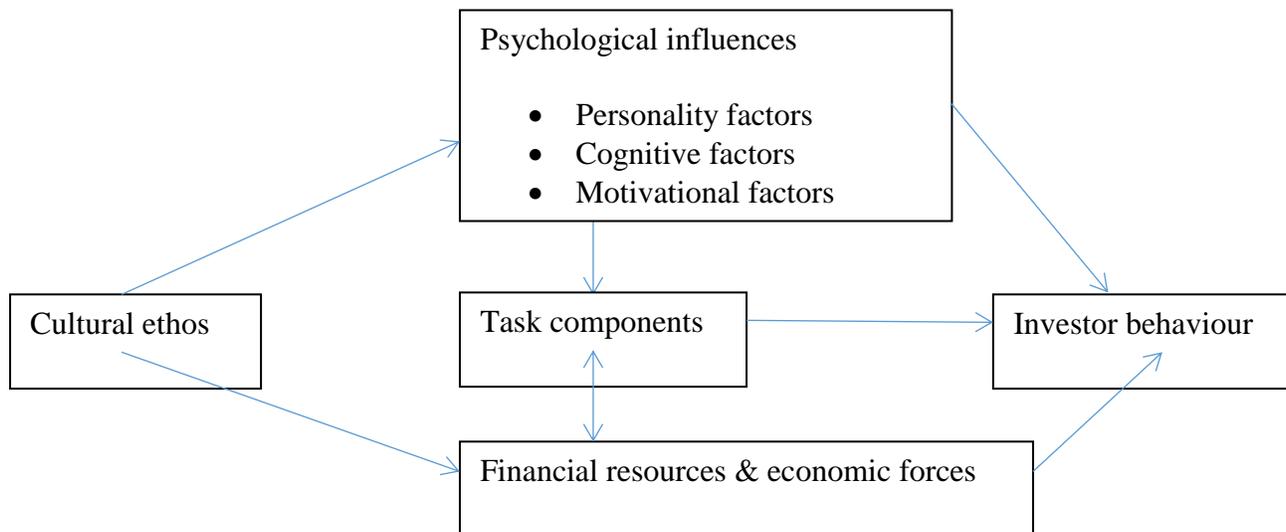
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Appendices



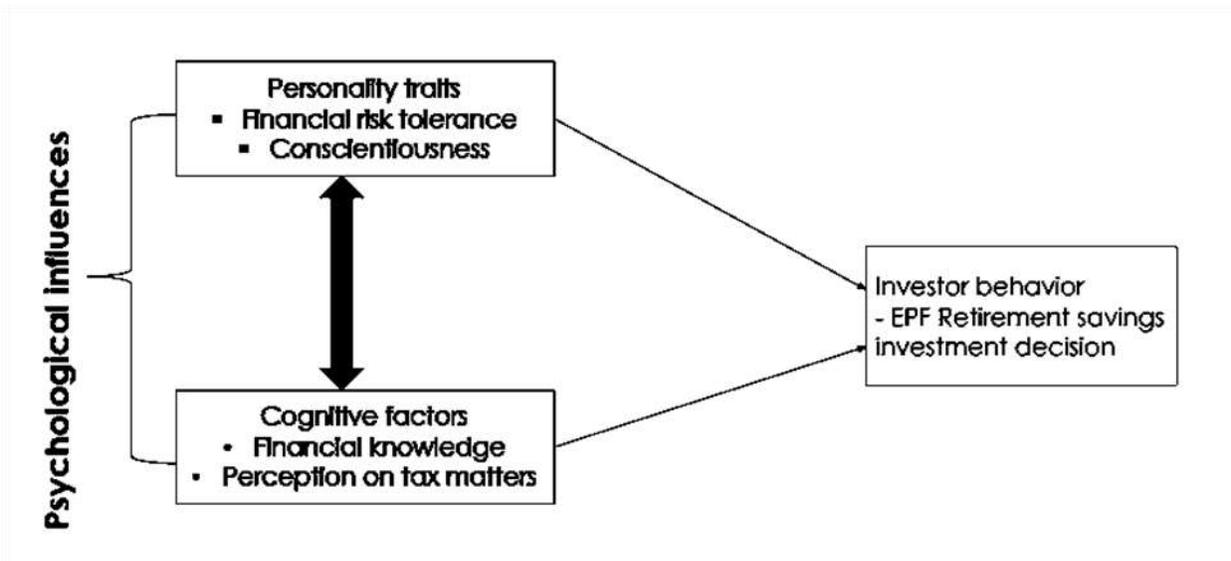
**Figure 1:** Theory of Planned Behaviour

Source: Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, p. 179-211.



**Figure 2:** Model of financial planning for retirement

Source: Hershey D. (2004). Psychological influences on the retirement investor. *CSA Journal* 22, p. 31-39.



**Figure 3:** Proposed framework of this study: Preliminary framework of psychological “pushes” and “pulls” of the EPF retirement savings investment decision.

# **R+3R and PAYT in Solid Waste Management: A combined Approach**

**Shrikant Athanikar\***

*Department of Computer and Information Science  
Universiti Teknologi Petronas, Tronoh, Perak, Malaysia  
Email: shrikant\_g03429@utp.edu.my*

**Vish Kallimani**

*Department of Computer and Information Science  
Universiti Teknologi Petronas, Tronoh, Perak, Malaysia  
Email: vish.kallimani@petronas.com.my*

**Low Tan Jung**

*Department of Computer and Information Science  
Universiti Teknologi Petronas, Tronoh, Perak, Malaysia  
Email: lowtanjung@petronas.com.my*

*\* Corresponding Author*

## **Abstract**

**Purpose:** The main purpose is to manage the flow of waste in a more sustainable approach from economic, environmental and social point of view.

**Design/methodology/approach:** Several promising approaches in waste management have been developed in the past few years, which includes 3R (Reduce, Reuse, Recycle) and PAYT (Pay-As-You-Throw). In addition, other innovative technological solutions have also been adopted to increase the overall efficiency of the service.

**Findings:** Addition of another “R” (Refuse) to the 3R can help control generation of Municipal Solid Waste (MSW).

**Originality/value:** The main purpose is to manage the flow of waste in a more sustainable approach from economic, environmental and social point of view. In cities thousands of tons of solid waste is generated daily. It is one of the most undesirable by-products of urban lifestyle which is growing even faster than the rate of urbanization.

**Keywords:** 3R; PAYT; Solid Waste; Intelligent system; Waste management

**Paper type:** Conceptual paper

## **Introduction**

Solid Waste management (SWM) has been a major concern lately. The environmental restrictions in recent years have led to multifold increase in the cost of treating waste, and especially the Solid Waste (SW). Though the developing countries may currently generate lower amounts of SW per capita, but the rate of increase is high (Athanasios A et al., 2014). Their current SW management practices may not be as advanced as those used in developed countries. However, the developing

countries could benefit from adopting SW management technologies used by the developed countries.

Basel convention in 1989 defined waste as any substance or object, which is supposed to be disposed or intended to be disposed by the provisions of the law. Waste creation of mankind is inevitable as far as the manipulation of the chemical environment continues (Prasanna, 2001).

Solid waste is most often an urban phenomenon. In rural communities there are fewer packaged products, less food waste and less manufacturing. A city resident generates twice as much waste as their rural counterpart of the same affluence. If we account for the fact that urban citizens are usually richer, they generate four times, as much of SW.

Practicing R+3R with skillful measures and techniques can reduce the volume of waste materials that are to be discarded and disposed. The main nitty-gritty here is to reduce the waste at the source wherever possible; then try to recycle the waste only when it cannot be reused. Instead of buying new containers and items from the market, use the ones that are already there. Refuse to buy new items, though one may think they are prettier than the ones you already have.

The well-known Polluter-Pays and the Pay-As-You-Throw (PAYT) principles are worldwide and widespread practices. The Polluter-Pays is directly related to the economic responsibility for producing one's own waste defined by (EC 2014). Depending on the actual waste the citizen threw off, the citizen should economically contribute; which means the citizen or user is charged on the consumption of the service he uses. Thus there will be a paradigm shift to service based rather than cost based.

***To reduce the MSW, R+3R approach combined with PAYT may be one of the strategic approaches used in the management of SW in the developing countries and not limited to the developed countries.***

The main objective should be to help individuals and businesses reap the benefits of reducing waste, developing sustainable products and using resources in an efficient way. It helps savings in waste management costs due to reduction in levels of final waste for disposal and better business opportunities and economic growth.

## **Solid Waste Management**

### *Issues*

Recyclable items represent 60% of the total waste volume (US EPA, 2006). Without proper retrieval process, these valuable materials will be disposed-off into landfill. This practice causes implications and leads to the loss of resources and in turn increases the rapid consumption of the landfill space thus reducing the life-span of landfills.

The existing waste disposal habit among the citizens is diverting waste through recycling. The MSW is highly commingled and is the major obstacle for the material recovery practice. The highly commingled waste contains high moisture content and consequently reduces the value of the recyclable items.

### *Sources and Types of Solid Waste*

Urban or Municipal Solid waste which is the scope of this paper can be broadly classified into:

- a. Bio-degradable wastes- Those wastes that can be degraded by microorganisms are called bio-degradable wastes Ex: Food, vegetables, dry leaves, etc.

- b. Non-biodegradable wastes- Urban solid waste materials that cannot be degraded by microorganisms are called non-biodegradable wastes. Ex: Polythene bags, scrap materials, glass bottles, etc.

Other classifications include Municipal Solid Waste, Industrial Waste, Hazardous Waste, Hospital Waste, Construction and Demolition Waste, Waste from electrical and electronic equipment, Agricultural Waste, etc.

#### *Effect of Improper Solid Waste management*

Due to improper disposal of municipal solid waste on the roads and immediate surroundings, biodegradable materials undergo decomposition producing foul smell and become a breeding ground for diseases. Burning of non-biodegradable domestic wastes (cans, pesticides, plastics, radioactive materials and batteries) produce furans, dioxins and polychlorinated biphenyls that are harmful to human beings.

#### *Gaps in Effective Waste Management*

The enactment act of the SWM in 2007 which provided a legislative framework for SWM, is still powerless because it has not been enforced (Agamuthu et al, 2011b). This is a significant policy gap between theory and practice since without the formal adoption or enforcement of the policies.

- Low public awareness among its users who are from diverse socio-economic and cultural segments.
- Financial and technical constraints.
- Poorly managed waste handling mechanism by operators and its concessionaires.
- Lack of uniform policies and strategies on solid waste management across the country.
- Shattered responsibilities amongst operators, concessionaires and other agencies.
- Lack of centralized monitoring system and punitive regulations.
- Being a low priority item to the licensing authorities and economic regulators.
- Lack of technically trained manpower.
- Lack of planning for waste management.
- Lack of community involvement.

#### *IT in Waste Management*

IT plays an important role in the transportation of waste. Using spatial database and GIS techniques helps us in decision making and planning of routes in the collection of waste. We can optimize the routes and also forecast the number of transport vehicles needed to transport the waste.

Solid waste management involves waste generation, mode of collection, transportation, segregation of wastes and disposal techniques.

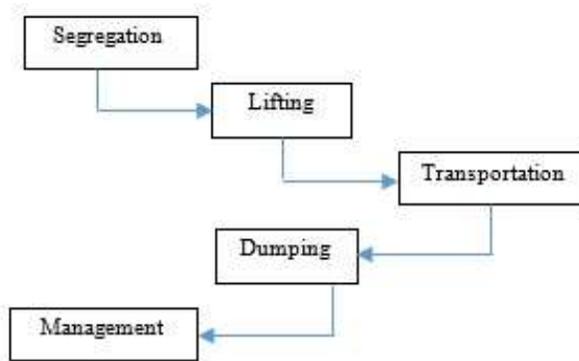


Figure 1: Waste Management Process

According to (Nikolaos V. Karadimas, et al, 2007), in the traditional Travelling Salesman Problem (TSP), the cost of traveling (distance) between two waste bins does not depend on the direction of travel. Hence, the cost (distance) matrix representing the parameters of the problem is symmetric. However, the problem, which this work refers to, is modeled as an Asymmetric TSP (ATSP) problem due to road network restrictions. An ATSP problem considers that the bidirectional distances between a pair of waste bins are not necessarily identical. The ATSP problem can be solved to optimality using various algorithms. Application of a Genetic Algorithm for the identification of optimal routes in the case of Municipal Solid Waste (MSW) collection.

**Existing Systems**

*3R System*

In various geographical locations or countries we see the hierarchy similar to the one shown in Figure 2, with the ascending order of highest priorities.



Figure 2: Solid Waste Management Hierarchies (UNEP, 2005)

The hierarchy is a useful policy tool for conserving resources, for dealing with landfill shortages, for minimizing air and water pollution, and for protecting public health and safety. In many developing countries, some aspects of this hierarchy are already in place, since traditional practices revolving around waste management prevent the reuse and recycling approach. (UNEP, 2005). According to (US EPA, 2006), source reduction can:

- Save natural resources

- Conserve energy
- Reduce pollution
- Reduce the toxicity of our waste and
- Save money for consumers and businesses alike.

### **PAYT System**

A paper by (Kontogianni et al., 2014) through a prototype application has outlined in a Greek municipality, the relevant contribution of current innovative technological solutions in supporting PAYT applications, especially in identifying the system users. This analysis has helped to point out some relevant issues about the current application of PAYT systems in SWM such as:

- Several types of benefits could be reached by adopting the PAYT schemes: from economic (by reducing service costs), to environmental (by both reducing waste quantity and increasing diversion rate) and social (by increasing citizen participation) points of view
- The diffusion of PAYT schemes is increasing all over the world, although its application is not massive. Several reasons are highlighted: starting from a more complex cost model (e.g. based on fully cost accounting) to the high transparency and reliability requested to the waste measurement system. Furthermore, its diffusion is also influenced by the collection service applied. Currently, door-to-door systems have been outlined as the most effective levers to support PAYT application in a municipality

Designing SW services for PAYT is a complex issue as the system has to be transparent, well and clearly defined. Based on framework defined by (Bilitewski, 2008), main processes required for calculating the service fee in a PAYT system are: the definition of the unit pricing model; the identification of the SW service user (e.g. private citizen, firms, etc.) and the measurement of the waste quantity produced/collected by each user (see Figure 3).

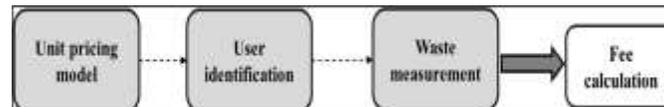


Figure 3: Main steps in a PAYT system adapted from (Bilitewski, 2008)

Traditionally, residents pay for waste collection through property taxes or a fixed fee, regardless of how much or how little trash they generate. Households pay a variable rate depending on the amount of service they use. PAYT charge residents a fee for each bag or can of waste they generate. In a small number of communities, residents are billed based on the weight of their trash. Either way, these programs are simple and fair. The less individuals throw away, the less they pay.

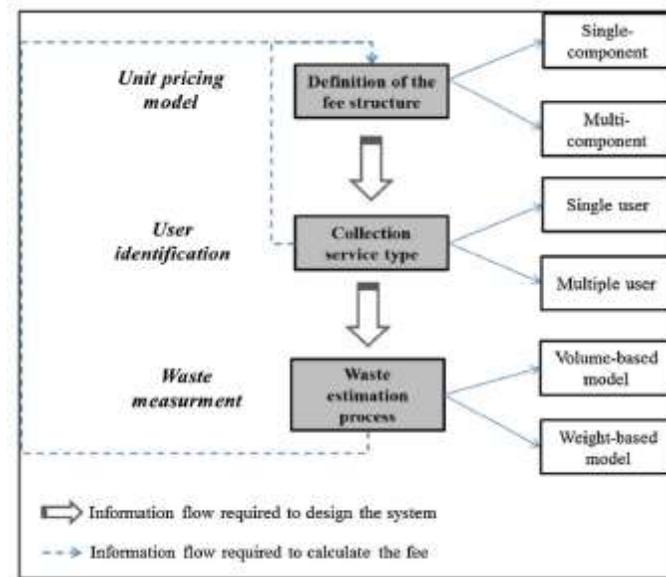


Figure 4: Main steps and factors influencing a PAYT system design (Valerio. E et al, 2015)

### Proposed System

Reduction in SW can be achieved by Treating Waste as RESOURCE.

- Refuse, Recycle, Repair and Reuse as much of our waste as possible.
- Better design and be more informed consumption level.
- Recover as much value as we can from the waste we collect.
- The less we waste, and the longer we can keep resources moving round the economy.
- Give Rewards in terms of Monetary Benefits to the people who produce very less or zero waste.

The hierarchy in Figure 5 is similar to the one shown in Figure 2 except for the addition of new R (Refuse).

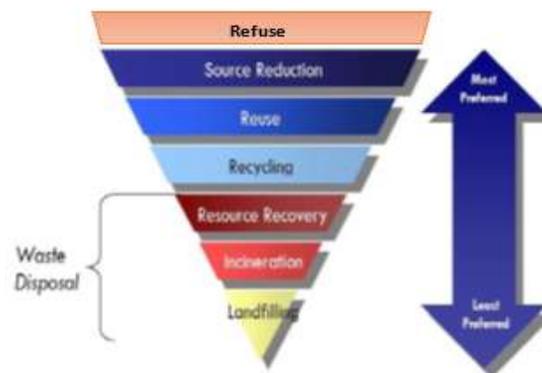


Figure 5: Solid Waste Management New Hierarchies

The most important strategy in SWM new hierarchy is to refuse wasting of items which can be used again. This concept can be difficult because we currently live in a world with many disposable items and it takes some imagination and creativity to see how items can be refused and reused.

There are two main ways that the concept of refusing can be applied to reduce waste. First, when want to purchase a new item, think and look over for an existing product that can be used instead of a version that is only used once and thrown away. The second way to is to buy an item second-hand, borrow, or rent an item, instead of buying the product new.

Although the items you refuse may eventually end up being waste, by refusing them you are reducing the overall amount of waste produced by giving the item a second function and expanding the typical lifespan of the item. The process of refusing can also be fun because it gives you the opportunity to take an old or used item and turn it into something new to you.

There are many ways that you, as an individual, can refuse items. Some common examples include shopping at thrift stores or yard sales for second hand items. You can also donate items you no longer need to thrift stores so that someone else can use them. Another common method of reuse is to bring your own reusable shopping bags instead of using plastic or paper bags provided at the store.

PAYT also called as trash metering, unit pricing, variable rate pricing or user-pay is a usage-pricing model for disposing of municipal solid waste. Users are charged a rate based on how much waste they present for collection to the municipality or local authority. So the amount of waste generated is charged accordingly using either of the methods discussed earlier.

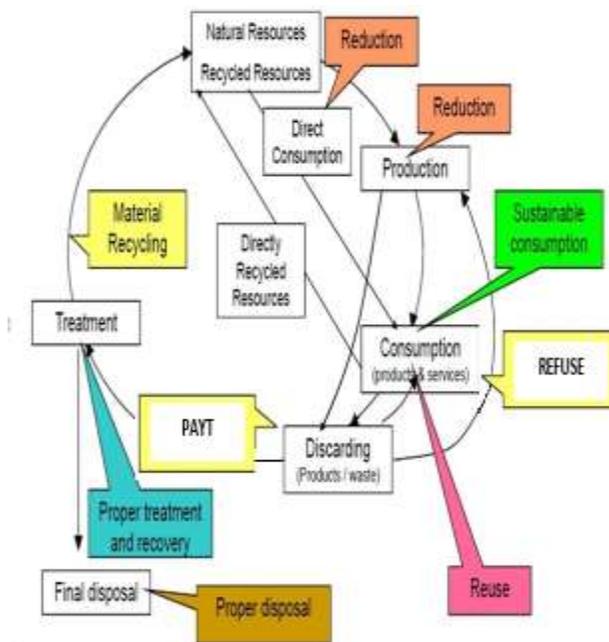


Figure 6: Improved Version of Waste Management Process.

The life-cycle begins with consumption of natural and recycled resources. The consumption could be direct or through some products. There are options and ways to reduce the waste at this stage with the help of 3R techniques which helps in the reduction of waste. The REFUSE and reuse mechanism can be used at the consumption stage to control the amount of waste generated as explained earlier. The waste that cannot be recycled is disposed of for treatment where energy recovery or resource recovery takes place. The PAYT method is applied at this stage depending on the amount of discarded or disposed waste. Each of the above stages of the life-cycle offers

opportunities for policy reconsideration, rethink the need for the product reuse and extend its life. Optimization in the use of the world's limited resources by avoiding the unnecessary generation of waste is the key in life-cycle of a product.

### Conclusion

Strategic implementation of reduction, reuse and recycle of solid waste becomes every one's responsibilities, which means for R+3R to be a success participants throw away culture of by-product should be changed through awareness and practice. Furthermore, the perception is that residents who refuse to recycle should be punished and laws should be made to enforce recycling activities. This could be achieved by reengineering current practice of solid waste management. Combining PAYT and R+3R is proposed to be a major change in SWM.

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# Community Engagement Program: Bringing about Community Well-being

**Md Akhir M Shariff\***

*Department of Management and Humanities,  
Universiti Teknologi PETRONAS,  
32610, Seri Iskandar, Perak, Malaysia  
mdakhir\_sharif@petronas.com.my*

**Azelin M Noor**

*Department of Management and Humanities,  
Universiti Teknologi PETRONAS,  
32610, Seri Iskandar, Perak, Malaysia  
azelin\_noor@utp.edu.my*

**Haryanni Harun**

*Department of Management and Humanities  
Universiti Teknologi PETRONAS  
32610 Seri Iskandar, Perak, Malaysia  
haryanniharun@utp.edu.my*

**Maran Marimuthu**

*Department of Management and Humanities,  
Universiti Teknologi PETRONAS,  
32610, Seri Iskandar, Perak, Malaysia  
maran.marimuthu@utp.edu.my*

**Ena Bhattacharyya**

*Department of Management and Humanities,  
Universiti Teknologi PETRONAS,  
32610, Seri Iskandar, Perak, Malaysia  
ena\_bhattacharyya@utp.edu.my*

**Ahmad Shahrul Nizam Isha**

*Department of Management and Humanities,  
Universiti Teknologi PETRONAS,  
32610, Seri Iskandar, Perak, Malaysia  
shahrul.nizam@utp.edu.my*

## **Abstract**

**Purpose:** This study intends to determine the impact of company's community engagement programs (CEP) on the community well-being (CWB). CEP denotes stakeholder management programs that enables top management and employees of companies to reach out and engage with

the community affected by their companies' operations. In the oil and gas industry, engagement with community is a critical activity that is part of the companies' business strategy. These engagement programs are integral in ensuring that companies demonstrate their due care to the stakeholders particularly those living around the company's operation sites.

**Design/methodology/approach:** This study focused on where an oil and gas refinery company operates its plant. Data was collected through quantitative method – i.e. survey. Data were analyzed using SPSS and results were tabulated to render findings on the perception of community living around the refinery plant towards the company's community engagement program and the impact of the program on their well-being.

**Findings:** The findings of this study indicated that although, research showed that the size and the budget for CEP do not necessarily effectively contribute to the development of the society, effective planning and execution of CEP would provide benefits that may uplift the CWB. Hence, top management of companies should ensure that CEP in their yearly business planning and executions of these programs are done in ethical manner that would substantiate their social responsibility role. Future research is recommended to conduct a more in-depth study via qualitative approach on the dimensions of this study to further expound the impact of CEP and CWB.

**Practical implication:** This study would be of great help to company's top management, especially within oil and gas industry, towards formulating effective community engagement strategies.

**Originality:** For an in-depth understanding of the CEP on CWB as well as the community perception toward CEP, this study is deemed important in explicating the importance of CEP by companies especially in the oil and gas industry.

**Keywords:** Community engagement program; community well-being; public perception; oil and gas industry

### **Introduction**

In ensuring sustainable business operations, top management and employees of companies must often make time and find ways to reach out and engage with their stakeholders. Khalid, Ramly and Lau (2014) indicated that in reality, organizations' managers and employees generally interact with various stakeholders in their daily activities. Common categories of stakeholders to any organizations are shareholders, employees, customers, suppliers and communities. According to Crane, Matten, & Moon (2010), stakeholders are

“individuals or a group which is either harmed or benefits from companies, or whose rights can be violated, or have to be respected by companies.” (pg. 169)

Stakeholders plays crucial roles in companies as they can significantly affect the way business decisions are made similarly business decisions may also critically affect the stakeholders well-being. As such, companies' engagement with the stakeholders, especially communities, is an indispensable activity that is part of strategic business and communication initiatives. According to Huntingdon (1996) and Friedman (2000) organizations must satisfy their key stakeholders, at least minimally, or public policies, organizations, communities, or even countries and civilizations may fail.

In the business ethics context, Community Engagement Program (CEP) is imperative as companies must perform their social responsibility roles. CEP, as part of Corporate Social Responsibility (CSR) initiatives, generally implies the organization's obligation to contribute to the well-being of the society (Jones, 1980; Epstein, 1989; Kok et. al, 2001). There is no concrete definition of CSR as it may denote different meaning to different individuals or organizations. However, in general, CSR is taken to denote corporate activities, beyond profit making, which includes protecting the environment, caring for employees, being ethical in trading, and getting involved with the local community. Some of the main issues are: promoting human rights, community involvement, human resource management, socially responsible investing and social reporting (Dusuki & Yusof, 2016). Thus, in this context, CEPs programs are integral in ensuring that companies demonstrate their due care and social responsibilities towards the communities' well-being. In the oil and gas industry, stakeholders i.e. communities, particularly those living within the vicinity of the companies' operations, are considered the critical group. CEP according to the American Petroleum Institute (API) as reported by Guerin (2014) is a

*“social license to operate - the idea that, in order for an energy project to succeed, a company needs to get buy-in from the community.”*

Despite the criticality of the oil and gas industry, there is not much known on the impact of CEP by companies' in this industry on the well-being of the communities within their stakeholders' group, particularly in Malaysia. Studies indicate the lack of empirical evidence on CSR obligations by private organizations in Malaysia (Alazzani, & Wan-Hussin, 2013; Dhaliwal, Li, Tsang & Yang, 2014).

Hence, the objectives of this study are:

1. To assess the level of community perceptions on CEP and their well-being.
2. To investigate the impact of CEP on the community well-being.

This paper focuses on an oil and gas refinery company which operates its plant in a central state of Peninsular Malaysia, Melaka. An extensive survey was conducted on the surrounding community within the above area, outcome of data collection are explicated in the following sections.

### **Literature review**

CEP refers to a two-way approach where there is a connection between organizations and the community on a range of policies, programs and services issues which essentially provides a “social license” for collaboration between organizations and community partners to develop and apply knowledge to address societal needs (Weerts & Sandmann, 2010; Queensland Government Web Centre, 2016) CEP is a two-way mode of communication, of which it encompasses an array of interactions between organizations and its community. It ranges from information sharing to community consultation as well as opportunities to participate in organization decision-making process. Dyer, Stringer, Dougill, Leventon, Nshimbi, Chama, & Muhorro (2014) asserted that community engagement therefore must be initiated at the first instance at which the project initiator approaches the community, and should continue to consider their ongoing involvement in the project. While engagement can be direct or indirect, formal or informal, effective CEP allows organizations to diffuse into wide perspectives and probable solutions that improve business decision qualities without compromising on the impact their operations may have on community.

Principally, it enables the community to better understand organizational processes and to build their ability to partake in matters concerning them. These are in line with Tindana et al. (2007) statement that “the concept of engagement in research goes beyond community participation; it is the process of working collaboratively with relevant partners who share common goals and interests”. Thus, an understanding of community engagement is an essential prerequisite for any organization in the planning, in approving or implementing community engagement activities (Driscoll, 2008; Pittman, Irby, Tolman, Yohalem & Ferber, 2011).

In the context of this study, it is acknowledged that there are high expectations from the community towards the oil and gas company’s engagement programs. CEP has always been seen as a conduit between the company and surrounding communities with the genuine intentions to provide conducive environment for community well-being (CWB). CEP has been known to accelerate and enhance interactions between organizations and the general public (Letcher, & Perlow, 2009). However, these intentions have been constantly criticized and questioned by the public, media and other stakeholders. Hence, there is a need assess the level of community perceptions on the company’s CEP.

CWB is the ultimate impact of the association between social, economic stature of the locals due to activities e.g. development of industry, infrastructure, public amenities etc. As such, the state of community well-being may be influenced by the surrounding factors of where the community live. It encompasses dimensions such as social, economic, community engagement programs, communication and HSE. Although the industrial development can bring infusions of money and jobs to local communities, an array of risks to community level assets and institutions is also possible. Sociological research dating back to the 1970s, links rapid oil and gas development with overburdened municipal services, upended social and cultural patterns, and volatile economic growth. Research on technological risk has demonstrated CWB can be associated with pollution and contamination, resulting in out-migration, declining amenity-led development, and decreased financial investment (Lee, Kim, & Phillips; 2014).

Therefore, the roles companies play in ensuring CWB is taken care off is deemed crucial. Yet not many studies were found to relate CWB and CEP to look at the role that companies, especially in the oil and gas industry, can play. And in the context of this study, little is known on the level of CWB and the impact of CEP on the well-being of the communities of study. Hence, there arise a need to assess the level of CWB of the community and determine the impact of CEP on CWB.

### **Research Methodology**

This section comprises of - focus of the study, research design, sampling design, methods and procedures, instruments used and the statistical techniques employed for the study.

The primary aim of this study was to investigate the local community perceptions towards the company’s operations and its socio-economic impact in the area. This study analyzed the community engagement program dimension towards community well-being. In relation to this, the constructs were assessed using different sets of measures based on the requirements on validity and reliability of individual dimensions. The adoption of the right measures was essentially important as the study was intended to provide greater accuracy in concluding the findings of the study. Hence, the research instruments were carefully developed to ensure that data collected at empirical level would support the objectives of the study.

A purposive sampling method is the ideal technique to partition the sampling frame into relatively homogenous groups. The selected areas were identified and verified by the relevant authorities to meet the objectives of the study. Purposive sampling is used in cases where the authority of the researchers to select a more representative sample that can bring accurate results (Zikmund, Babin, Carr & Griffin, 2013). The process involves purposely selected individuals from the population based on the authority or the researcher's knowledge and judgment. In this regard, the sampling design was systematically constructed for the questionnaire survey consistent with the objectives of the study. The unit of analysis was individual residents of the selected areas. Previous studies utilized the same methodology in similar socio-economic behavioral studies (Bocquet, Le Bas, Mothe, & Poussing, 2013; Kanji & Chopra, 2010).

A total sample of 1352 respondents were recruited in the survey. These respondents were drawn from a stratified sampling method to ensure that they were representative of the population. The field work commenced with a familiarization visit to the locality being studied. The aim of the visit was to get the sense of the environment, societal systems and layout of the area of study. Through the visit, an initial plan and strategies for the entire research process was planned.

Level of measurement or scale of measure is a classification that describes the nature of information within the numbers assigned to variables in this study. Measurement scales are used to categorize and quantify variables (Zikmund et al, 2013). In view of this, the study used both metric and non-metric data to suit the requirements. As for non-metric, nominal and ordinal measurement scales were instituted mainly to capture the respondents' profile of the surrounding area. Meanwhile, metric data (interval and ratio measurements) were specially adopted to describe, analyze and synthesize the five dimensions of the study. The 5-point Likert scale was rigorously used for inferential and triangulation purposes. In addition, the instruments also incorporated open-ended questions for cases that required deeper understanding for exploratory purposes (Miles, Huberman, & Saldana, 2013).

A pilot study was conducted to test the questionnaire's validity and reliability. A total of 35 respondents were selected from the closest area to the plant were chosen. Based on the pilot study, improvements in the questionnaire were made. The reliability analysis of the scales showed that overall reliability are above the Cronbach Alpha 0.7.

The quantitative data of this study was analyzed using Statistical Package for Social Sciences version 20.0. The main statistical method used in this data analysis was descriptive statistics and correlation analysis, which summarized data from a sample using indexes such as the mean and standard deviation. Results of the data analysis are categorized using the cutoff point as below:

Table 1.0: Results of Descriptive Analysis

<2.5	2.5-3.5	>3.5
Low	Moderate	High

## Discussions of Results

The demographic data of this study is presented as follows:

Out of 1352 respondents, majority were male (55.8%) and the remaining respondents were female (44.2%). Majority of the respondents were Malay (90.5%), followed by the Chinese (6.4%), Indian (1.3%) while other races were about 1.8%. The majority of the respondents are aged above 60

years old (26%) followed by the range 41-50 (25%), 51-60 (20%) while 16% are aged 31-40. The remaining 13% were made of those 25-30 and below.

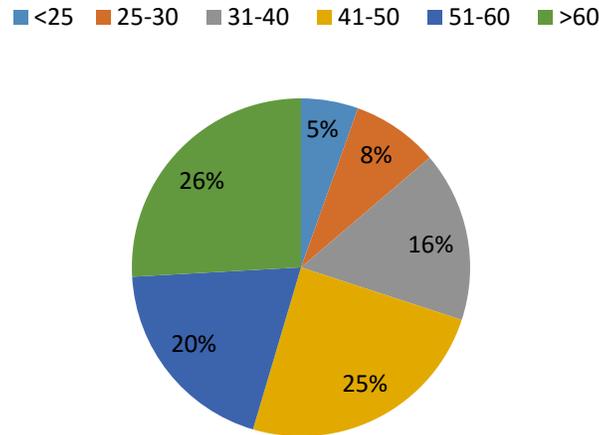


Figure 1.0: Respondents Age Group

Majority of the respondents completed either primary or secondary school (76%), while 16% have certificate level and above, and 8% have no formal education. This shows that the majority of the respondents completed only school level education. Majority of the respondents were housewives (26.2%), 25.7% were self-employed while 19.9% were working in the private sector and 8.8% were working with the government. 16.9% were retirees and 2.4% unemployed. This means that the majority of the respondents were elderly and were senior in their age.

### Descriptive Analysis

In addressing objective 1 of this study, a descriptive test was conducted on the data obtained. Table 2.0 below presents the results of this test.

Table 2.0: Results of CEP and CWB

	Mean	Std. Deviation	N
<b>CEP</b>	3.00	.898	1352
<b>CWB</b>	3.23	.693	1352

Results above implied that in general, the community indicated a moderate level of satisfaction or acceptance of the CEP (3.00) undertaken by the company as well as on their well-being (3.23). Items of CEP and CWB indicated that the community felt that there was a lack of monitoring on their well-being by the company as well as a lack of community visits and socialization by the company’s personnel. The community would like to have more community engagement especially with the management personnel of the company as to facilitate direct communication between the parties. The community is also expecting a blending into a close-knit relationship between the community and the company personnel through the carrying out community program or normal community functions like wedding, religious events, talks and other community functions.

A test was conducted to correlate CEP and CWB as to determine the impact of the company’s CEP on the CWB. Table 3.0 below presents the results of correlation analysis.

Table 3.0: Correlation Analysis of CEP and CWB

		<b>Wellbeing</b>	
<b>CEP</b>	Coefficient	.423**	
	Sig.	.000	
	N	1352	

\*\* Correlation is significant at the 0.01 level (2-tailed).

The results above indicates a significant relationship between CEP and CWB (coef = .423,  $p < .01$ ). This shows that CEP of the company has positive impact on that the CWB. This is reflective on the qualitative information provided at the end of the questionnaire that the community is somehow appreciative on the level of responsiveness and the respect of their way of life/culture showed by the company. As such the community felt dignified in with the existence of the company in their midst.

### Conclusion

This study is deemed important in explicating the importance of CEP by companies in the oil and gas industry. Although, research showed that the size and the budget for CEP do not necessarily effectively contribute to the development of the society effective planning and execution of CEP would provide benefits that may uplift the CWB (Magis, 2010; Rovai, 2002). The findings of this study are indicative of this notion. Hence, top management of companies should ensure that CEP in their yearly business planning and executions of these programs are done in ethical manner that would substantiate their social responsibility role. By doing so, companies can assure that they exercise due care to the community that would render positive outcomes of CWB. Future research is recommended to conduct a more in-depth study via qualitative approach on the dimensions of this study to further expound the impact of CEP and CWB.

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# Conceptual Review on Effect of Protean Career Attitudes on individual and Organizational Outcomes

Muhammad Latif Khan<sup>1</sup>, Rohani Salleh<sup>2</sup>, Mohammad Abdullah Hemdi<sup>3</sup>

<sup>1-2</sup>Department of Management and Humanities

Bandar Seri Iskandar, 31750, Tronoh, Perak, Malaysia

<sup>2-3</sup>Faculty of Hotel and Tourism Management,

Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia

*\*Corresponding Author Email: latifmarwat@hotmail.com*

## Abstract

**Purpose:** The aim of this paper theoretically is to identify a correlation between protean career attitudes and its effect on individual and organizational career outcomes.

**Design:** Based on literature review, this paper highlighted to develop a conceptual framework of protean career attitudes and its effects on individuals and as well as organizational outcomes.

**Findings:** Based on literature it is summarized that that protean career attitudes can provide the mutual gains for organization and employees, even it is significant for individuals and for organizations.

**Research limitations/implications:** As shown in reviewed literature, the protean career models refers to an indication of deteriorating tendency in an organizational commitment but any practical research on this subject so far is found highly insufficient. As far, no such information has been available about how protean career attitudes can be influenced and attracted.

**Practical implications:** The study is exploratory on the grounds of literature review. Professional employees may gain insights of the importance of protean career in development of career process. Practical interventions for HRD professionals are suggested to assist individuals and organizations towards protean career management. Future research should gain more refine view of protean career individuals and should develop more propositions from different organizational and individuals perspectives.

**Keywords:** Protean career Attitudes, Individual outcomes, Organizational outcomes

**Paper Type:** Conceptual Paper

## 1. Introduction

In traditional career, a long relationship between employers and employees are highly determined by hierarchical promotion, increased payment, and job security (Dries, Van Acker, & Verbruggen, 2012). Nevertheless, in view of the global volatility, there is no any long-term employment offered by organizations. To respond this uncertain situation of Career landscape, it is suggested that employees should distinct their career path from organization and to control the charge of their own career by augmenting more employability career skills (Arthur, Khapova, & Wilderom, 2005; Gubler, Arnold, & Coombs, 2014). Here, protean career attitudes characterize this new career attitude (Hall, 1976).

Clark (Clarke, 2013; Zaleska & de Menezes, 2007), stated most of employees have found some ambiguities in the protean career orientation. Nonetheless, more employees would pose a threat for the organization for the skillful employees when recognizing themselves as protean and independent from their organization. This then shows how important the talent management is (Collings & Mellahi, 2009), to win the talent war, high dedicated HR professionals with strong believe required that they will be better able to maintain the motivation and retention of protean individuals. (Jiang, Lepak, Hu, & Baer, 2012). As far, no such information has been available about how protean career attitudes can be influenced and attracted. Given the worries about the extent to which these protean career orientations have been embraced by employees, not many researches given for the exploration towards the way these orientations give an impact on the organizationally-relevant outcomes and to what extent the organizations can influence the association between independent career orientations and both individual and organizational outcomes (Uy, Chan, Sam, Ho, & Chernyshenko, 2015). The study is exploratory on the grounds of literature review. Professional employees may gain insights of the importance of protean career in career development process. Practical interventions for HRD professionals are suggested to assist individuals and organizations towards protean career management. Future research could provide a more holistic view of protean career and develop additional propositions (Chin & Rasdi, 2014).

## 2. Literature Review

### 2.1 Protean Career Attitudes

The term protean initially introduced by Hall (1976), the word protean is derived from the Latin word *proteus*, protean is defined as a great individual ability to make an adaptation in dealing with uncertainty (Briscoe & Hall, 2006). Protean career attitudes comprise two main features: being *self-directed* and *being values-driven*. Self-direction refers to the degree to which an individual strategically takes the control of his/her own career (Briscoe & Hall, 2006; Mirvis & Hall, 1994). The latter one is defined as the high consciousness of individual towards his or her own personal priorities and used as the standards in making and assessing decisions (Hall & Mirvis, 1996).

Self-directed career attitude is related to the proactive personality and mastery goal orientation, both of which tend to lead to behaviors to cope with any changes (Briscoe, Henagan, Burton, & Murphy, 2012). In turn, individuals with this proactive career attitudes is observed to be linked with the higher likelihood of job search behaviors as well as seeking an external support (Brown, Cober, Kane, & Levy), as well as the objective and subjective career success (Fuller Jr & Marler, 2009) It has also been established that self-directedness, being one of the protean dimensions, is directly related to a number of positive career-building behaviors, including developing relevant social networks, seeking career advice, actively being engaged in job search change (Briscoe et al., 2012; De Vos & Segers, 2013). Also, self-directedness is known to stand in a positive relation with the career management behavior and organizational commitment (De Vos & Segers, 2013).

An individual with protean career attitude tends to have his or her own values for career (value driven) rather than the organizational values to guide their career. He or she also takes the responsibility to manage their career (self-directed). A person with this proactive characteristic is not only conscious with his or her own career but also has a big concern for the organization priorities (Grant & Ashford, 2008).

Thus, these findings provide an indication about the ability of protean career orientation in offering a protective layer in the context of instability and transition of the labor market in which there is a must for the individuals to propel themselves and manage their careers success. Self-directed career attitude is positively related to the affective and normative commitment but negatively related to a continuance commitment (Çakmak-Otluoğlu, 2012). A research suggests that employees with protean career attitude would show high commitment towards organization, until the ignorance of organization towards them ends (Briscoe & Finkelstein, 2009). Protean career attitude significantly contributes an affective attachment to organization (Enache, Sallán Leyes, Simó Guzmán, & Fernández Alarcón, 2010).

We therefore address both value driven and self-directed career attitude and its relationship to individuals and organizational outcomes based upon literature.

### 2.2 Protean Career Attitudes and Individuals Outcomes

Research suggests that protean career attitudes are basically proactive in nature (Porter, Woo, & Tak, 2016), have courage to cope with uncertainty (Baruch & Quick, 2007) and have a tactic for career adaptability (Chan et al., 2015). Individuals with protean career attitudes are more self-confident in their skills and abilities and search a new jobs and show higher level of career success (Grimland, Vigoda-Gadot, & Baruch, 2012). Individuals with this proactive attitude tends to have an active adjustment towards themselves (Ashford & Black, 1996), explaining things confidently (LePine & Van Dyne, 2001), turning the problems into opportunities (Dutton & Ashford, 1993), being responsible (Morrison & Phelps, 1999), attempt in advance to avoid the occurrence of bad things and inspiring the people (Kipnis & Schmidt, 1988), revising the task (Staw & Boettger, 1990), removing the job constrains (Wrzesniewski & Dutton, 2001), solving the problems through the new ideas (Parker, Williams, & Turner, 2006), positive thinking about the individual and organization (Griffin & Lopez, 2005), building a network with people inside and outside the organization (Morrison, 2002; Ostroff & Kozlowski, 1992). A person with a protean career attitude and behavior is always prepared for any challenges, and has a potential to reach career success (Grant & Ashford, 2008). A person who has these proactive traits shows a high career success in life (Yean, Yahya, Othman, & Pangil, 2013). Protean career attitude, which is proactive in nature, may support an individual with the confidence and a direction for career success. Protean career attitudes may therefore provide an effective coping mechanism in the context of career uncertainty (Briscoe et al., 2012). There is a positive relationship between protean career attitude and individual subjective career success (Volmer & Spurk, 2011; Zafar & Mat, 2012). In a job transition, the protean career attitude concept regarding self-directed is crucial and has a strong relationship with both objective and subjective career success (Raabe, Frese, & Beehr, 2007). Employees high in protean career orientation are the effective leaders for their subordinates (Briscoe, Hoobler, & Byle, 2010).

As a result, individuals with this proactive traits would be concerned with their own career achievement as well as organization priorities (Porter et al., 2016). Further qualities in a protean attitude (e.g. proactivity, openness to

change, optimism, self-awareness about values, and adaptability) may make these people more appealing and, therefore, more with career success. Individuals with this proactive attitude could actively make an adaptation for themselves (Baruch & Quick, 2007; Chan et al., 2015). Hence, it is expected here that people with protean career attitudes could be highly satisfied with their career and never wait for their career to be managed by the organization (Briscoe, Hall, & DeMuth, 2006).

### **2.3 Protean Career Attitudes and Organizational Outcomes**

The reviewed literature show that the protean career models are defined as an indication of a deteriorating tendency in an organizational commitment but any practical research on this subject, so far, is found highly insufficient (Sullivan, Carden, & Martin, 1998; Zaleska & de Menezes, 2007). Researchers have ignored generally the consequences of protean career attitudes for organizations (Rodrigues, Guest, Oliveira, & Alfes, 2015).

Several careers related outcomes have been found by the former researcher on protean career attitudes. But there is still lack of examination on the theoretically based variables in predicting the correlation of protean career and its effect on the individual and organizational outcomes (Gubler et al., 2014; Rowe, 2013). As stressed by Sullivan (1998), individuals with protean career attitudes might lack of organizational commitment. Even though protean career models is well known to play a role in reducing the organizational commitment, not many practical researched sufficiently deal with this subject (Sullivan et al., 1998). So far, there has been little discussion about the correlation of this protean career attitude and affective organizational commitment (Rowe, 2013).

A research revealed a more commitment towards organization among employees with protean career attitude; hence, an organization does not ignore them (Briscoe & Finkelstein, 2009). Protean career attitude significantly concerns with an affective commitment to organization (Enache et al., 2010). As mentioned that the reduction in organizational commitment is highly determined by the psychological agreement abuses - not resembling the violations considered as violations replicating protean worries. Organizational bond particularly abuses that threatened protean careers were more continually correlated to the negative organizational commitment consequences rather than being those threatening protean careers (Skromme Granrose & Baccili, 2006). There is a tight correlation between protean career attitudes and a proactive personality, as we assumed that those with such attitudes might show more career mobility and tend to move out of work conditions once knowing their unfulfilled needs or when sensing an agreement breach. In this way, their organizational commitment might be more ambiguous (Briscoe, Hall, & Frautschy DeMuth, 2006). The new career attitude is branded by comparatively low levels of devotion to the organization and employees reveal organizational commitment provided that the company could provide them some opportunities for endless learning that, in turn, will enhance their upcoming employability (Rousseau & Wade-Benzoni, 1995).

Many former literatures have primarily emphasized on the protean career as a predictor of career-related outcomes. Great attention in fact has not been paid to scrutinize theoretically based variables to envisage the relationship of protean career and organizational commitment (Gubler et al., 2014; Rowe, 2013).

### **3. Proposed Conceptual Framework**

Based on a wide literature review, a conceptual framework has been developed to examine the relationship between protean career attitudes and organizational and individuals outcomes. Figure 1 depicts the proposed conceptual framework of the study. Although the general assumption about protean career attitudes are decline in organizational commitment, some of literature shows that individuals with protean career attitudes is the major risk for an organization and has negative relationship with organizational outcome like affective organizational commitment and loyalty. This conceptual frame work shows a positive relationship of protean career attitudes on individuals and organizational outcomes. Based on literature this conceptual relationship between protean career attitudes, individuals and organizational outcomes will be investigated.

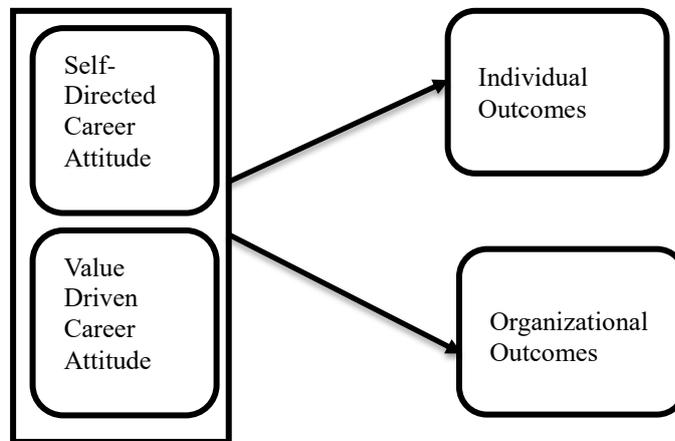
**Protean Career Attitudes**

Figure 1: Proposed Conceptual Framework

Proposition 1: Protean career attitude has a positive impact on individual outcomes.

Proposition 2: Protean career Attitudes has a positive impact on organizational outcomes.

**4. Proposed Methodology**

The study is a quantitative in design; data will be collected through questionnaires from operational employees currently working in the hotel industry in Malaysia. Descriptive analysis and demographics statistics will be performed by using Statistical package for social sciences (SPSS) 20.0. Further analyzed through structural equation modeling (SEM) in AMOS 21.0. The data will be collected from four and five Star hotels located in Malaysia namely Kuala Lumpur, Selangor, Penang, and Perak. According to Tourism Malaysia total numbers of four and five stars hotels in Malaysia is 230.. In this research, the unit of analysis will be operational employees from each department namely, Food & Beverages, Housekeeping, Front Office department and Food & Beverages production department.

**5. Objective of The Study**

1. To identify the importance of protean career attitudes.
2. To identify the importance of protean career attitudes for individuals.
3. To identify the importance of protean career attitudes for organizations.

**6. Conclusion**

Today, in challenging work environment and living business setting, the research possibly will boost the consciousness to HRM experts and leaders to support employees with protean career attitudes. We further derived that managers and the organization ought to consider the desired needs and sovereignty for protean career attitude, enabling them to retain their commitment with organization.

Nevertheless, organizations must be more watchful not to "throw the baby out with the bath water" by pairing concerns for an undesirable movement with protean attitudes studied. At this point, an organizational commitment is not able to be discharged simply built on protean attitude. It is therefore deemed essential to well review a commitment as a required result of the "new career" by researchers and by companies to maintain inquiring and sovereign career actors.

We recommend an emphasis to be fewer on just how not to drop them and further on how to use their distinctive aspects. We then view that managers and companies making available opportunities for self-direction and value-driven attitude and inside prospects might be more expected to gain the organizational commitment of employees with protean career.

To summarize, through this conceptual review, it is possible for HRM experts to identify the way in managing employees with protean career. This concept provides an understanding about the impact of individual, organizational and job-related factors on protean career. In globalization era and vibrant business setting, the study also might strengthen the awareness for HRM practitioners and managers in supporting employees. Furthermore, managers and organization ought to well concern with the desired needs and dominance for protean career attitude; thus enabling them to be capable of maintaining their organizational commitment. This study theoretically explores the outcome of protean career attitudes for organization and individuals. This suggests that protean career attitudes can provide the mutual gains for organization and employees, even it is significant for individuals and for organizations (Rodrigues et al., 2015).

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