

# The Influence of Board Characteristics and Ownership Structure on Integrated Reporting: The Moderating Role of Firm Size

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## Abstract

**Purpose:** The purpose of this study is to examine the influence of board characteristics and ownership structure on integrated reporting and the moderating role of firm size among Malaysian public listed companies.

**Design/methodology/approach:** The study used structural equation modelling (SEM) to analyze a sample of 48 observations over the period 2018 to 2020.

**Findings:** The results reveal that firm size moderates the significant influence of board education on IR disclosure level.

**Research limitations/implications:** The sample size is too small due to many companies were excluded because of incomplete information over the period of three years. Besides, this study also only uses annual reports, integrated reports, CG reports, and the company's discrete reporting to analyze the data.

**Practical implications:** The findings have implication for regulators to include the board educational level as part of the board diversity regulation. Besides, they also may develop a conducive mechanism including the formulation of the policy and a clear guideline, an appropriate standard, aspect of financing and sufficient incentives, and enhancing the awareness and knowledge. This has a positive effect on the disclosure of integrated and comprehensive information to drive the investment levels.

**Originality/value:** This study contributes to the IR literature, showing the influence of board characteristics and ownership structures on IR disclosure level. Second, it extends the application of a combination of legitimacy theory and agency theory. This study also broadens the list of the determinant of IR disclosure level including the moderator influence of firm size.

**Keywords:** Integrated Reporting, Board Characteristics, Ownership Structure, Firm Size, Malaysia

## Introduction

The external business environment has become more complex and traditional corporate reporting is unable to overcome this complexity to assist stakeholders due to its several limitations (Hamad et al., 2020). It is acknowledged that financial reporting is unable to provide sufficient information required by all stakeholders (Bernardi & Stark, 2016). In addition, most companies seem unable to disclose both financial and non-financial in an integrated way through Corporate Social Responsibility (CSR) and Sustainability Reporting (SR) (Lok & Phua, 2021). In this regard, IR has been recognized as the key approach (Lok & Phua, 2021) as the next corporate reporting approach and it is now adopted in over 70 countries (IIRC, 2020).

In Malaysia, the survey findings by MIA and Associations of Chartered Certified Accountants [ACCA] (2016) shows that many corporate report preparers and users are dissatisfied with the current approaches in providing real insights into company performance and value creation, thus,

demanding improvement in the existing corporate reporting in Malaysia. In addition, the current reporting approach by Malaysian companies has not yet been integrated as they are concentrating more on illustrating a process rather than giving insights (Safri et al., 2023). In order to increase the IR practices in Malaysia, the MCCG 2017 was introduced in April 2017, particularly the new Practice 11.2, which encourages large companies to adopt IR in accordance with a globally recognized framework (SCM, 2017). However, this has resulted in gap practices among the listed companies, in particular, from the year 2018 to 2020, only 57% of companies consistently disclosed IR (SCM, 2019; SCM 2020). As a result, a lower IR disclosure might be unable to assist companies to attract more foreign investment and boost company performance (MIA & ACCA, 2016), particularly in a post-Covid time.

Furthermore, the global issues including the economic recession and the confidence issue of investors in corporate reporting approaches, as mentioned above, have raised the issue of corporate governance (CG) (Zouari & Dhifi, 2021). In the context of CG and disclosure relationship, CG is identified as the main determinant towards the disclosure strategy of companies, especially the IR (De Villiers et al., 2017; Velte, 2021) and play a significant role to restore the confidence among the stakeholders. However, a majority of studies seem to agree that CG variables have a significant effect on IR, but which variables are important and the magnitude of their effect are not without controversy (Dragomir & Dumitru, 2023). In this regard, this study will extend previous work by examining both internal and external CG mechanisms, which are board characteristics and ownership structure. One of the drivers of internal dimensions of IR determinants is board characteristics (Vitolla et al., 2019). However, MIA and ACCA (2016) reveal that 68.7% of corporate preparers disclose that IR has not been considered at the board level. In this regard, Velte (2023) argues that future standard setting and stakeholders should encourage manager to incorporate sustainable board structures, which should be linked with increased reporting quality. However, in Malaysia, there is a low sustainable board structure (SCM, 2021). Besides, the adoption in relation to board gender diversity remains among the lowest in the MCCG (SCM, 2021) which is important in influence the companies' decision on IR (Songini et al., 2021). Therefore, this study aims to investigate the influence of board characteristics on IR disclosure level.

Meanwhile, the literature emphasizes a strong influence of ownership structure on IR activities (Raimo et al., 2020). However, the ownership structure variables have been investigated to a rather low degree, in particular in CG-IR studies (Velte, 2021), which motivate this study to fill this gap. In general, the empirical research that examines the relationship between board characteristics and ownership structure on IR disclosure shows mixed results which requires further studies on such relationship and has motivated this study to conduct this research. Furthermore, empirical studies that investigate the association between board characteristics and ownership structures on IR, however, shows inconsistent results which requires the inclusion of the moderator role. The inclusion of a moderator role also is an attempt to fill the research gap on moderator analysis in IR research (Velte, 2021). Therefore, this study aims to investigate the moderating effects of the firm size on the relationship between board characteristics and ownership structures on IR disclosure level.

## **Literature Review**

### ***Theoretical Background***

This study uses the legitimacy theory and agency theory to examine the role of board characteristics and ownership structure on IR and the moderating role of firm size among Malaysian companies. In this regard, confirming legitimacy theory, companies change their

reporting strategy to enhance the usefulness of their decision in accordance with the information needs of stakeholders (Velte, 2021). This is because legitimacy can be achieved by fostering a strong relationship with stakeholders (Camilleri, 2018) through corporate disclosures, based on their expectations (Hahn & Lülfs, 2014). Therefore, companies disclose IR to achieve legitimacy (De Villiers et al., 2017). Next, according to the agency theory, to limit the agency's problems, corporate executives are influenced by board characteristics to strengthen disclosure practices (Chouaibi et al., 2020). Besides, the literature recommends that shareholders can play another form of monitoring due to shareholders may have the skills, knowledge, and motivation to avoid the concealment of information and, therefore strengthen the level and quality of disclosure (Donnelly & Mulcahy, 2008). Thus, some characteristics of the ownership structure directly influence the level of information asymmetry (Raimo et al., 2020b).

## **Theoretical Framework and Hypothesis Development**

### ***Hypothesis Development***

#### ***Board Size and Integrated Reporting Disclosure Level***

The main task of any director is to supervise the management of a business, as agency problem resides in every company (Omran et al., 2021). Previous literature suggests the advantages of having a larger board size including it will lead to a larger volume of information disclosed (Akhtaruddin et al., 2009) as larger boards would tend to have reduced information asymmetry by reporting more societal information (Meniaoui et al., 2016). Chanatup et al. (2020) and Suttipun and Bomlai (2019) found a positive relationship between board size and IR disclosure level. Therefore, we introduce the following hypothesis:

H1: There is a significant relationship between board size and IR disclosure level.

#### ***Board Independence and Integrated Reporting Disclosure Level***

Previous studies share the same agency-centered view in which independent directors should increase corporate transparency to safeguard the interests of shareholders (Michelon & Parbonetti, 2012). Besides, agency theory viewed that since a high proportion of independent directors are seemed to monitor and control the management effectively, they are expected to be more promising in driving management towards long-term value-enhancing activities and strength transparency (Jizi et al., 2014). Chanatup et al. (2020), Omran et al. (2021), Tiron-Tudor et al. (2020), and Zouari and Dhifi (2021) found a positive relationship between board independence and IR disclosure level. Therefore, we introduce the following hypothesis:

H2: There is a significant relationship between board independence and IR disclosure level.

#### ***Board Gender and Integrated Reporting Disclosure Level***

Agency theory recommends that female directors are likely to act against male directors' inclination to withhold information and secrecy, thus providing strong monitoring (Ahmed et al., 2017; Omran et al., 2021). In particular, gender diversity is connected with significant disclosure improvement (Gerwanski et al., 2019) and is among the most important aspects in the integrated dissemination of information (Frias-Aceituno et al., 2012). Chanatup et al. (2020) found a positive relationship between board gender diversity and IRDL. Therefore, we introduce the following hypothesis:

H3: There is a significant relationship between board gender and IR disclosure level.

#### ***Board Education and Integrated Reporting Disclosure Level***

Educational background contributes to defining directors' skills and knowledge (Songini et al., 2021). According to Åberg and Torchia (2020), the board education level has a significant impact on dynamic managerial capabilities and strategic change such as steers the corporate

disclosure decision by a company. Songini et al. (2021) found a positive relationship between board education level and IR quality. Therefore, we introduce the following hypothesis:

H4: There is a significant relationship between board education level and IR disclosure level.

#### ***Ownership concentration and Integrated Reporting Disclosure Level***

According to Raimo et al. (2020), higher agency conflicts could drive widely held company structure to disclose higher quality information within the integrated reports and found a negative relationship between ownership concentration and IR. Therefore, we introduce the following hypothesis:

H5: There is a significant relationship between ownership concentration and IR disclosure level.

#### ***Government Ownership and Integrated Reporting Disclosure Level***

In the context of corporate disclosure, government-owned companies might provide more information as they need to meet the societal expectations including through corporate reporting, compared to privately-owned companies (Suttipun & Bomlai, 2019). In the context of IR, the greater public concern towards companies with high levels of government ownership and the lower attention of these companies in the disclosure of confidential information could result in the disclosure of higher quality of integrated reports (Raimo et al., 2020). Eng and Mak (2003) found a positive relationship between government ownership and disclosure. Therefore, we introduce the following hypothesis:

H6: There is a significant relationship between government ownership and IR disclosure level.

#### ***Institutional Ownership and Integrated Reporting Disclosure Level***

Companies with high institutional ownership are inclined to provide greater information (Jiambalvo et al., 2002) because they have strong incentives to monitor the disclosure's practices due to the large shareholding (Barako, 2007). In the context of IR, in order to reduce the agency problems, the pressure of institutions' supervision can result in a high level of IR disclosure to provide more information (Suttipun & Bomlai, 2019). Chanutup et al. (2020), Raimo et al. (2020), and Suttipun and Bomlai (2019) found a positive relationship between institutional ownership and disclosure. Therefore, we introduce the following hypothesis:

H7: There is a significant relationship between institutional ownership and IR disclosure level.

#### ***Board Size and Integrated Reporting Disclosure Level: The Moderating Role of Firm Size***

Previous research highlights the relationship between firm size and board size. For instance, Monem (2013) examines the determinants of board structure in Australia and found that board size increase with firm size. Thus, this study argues that larger firm size could have a larger board and might to an extent influence the effective decision of the board regarding the IR disclosure level. This is due to a larger board will increase the ability of the directors to enhance value-creating activities and the collective expertise and experience (Akhtaruddin et al., 2009), such as providing diversity in terms of financial expertise (Chouaibi et al., 2020). Therefore, we introduce the following hypothesis:

H8: Firm size moderates the significant relationship between board size and IR disclosure level.

#### ***Board Independence and Integrated Reporting Disclosure Level: The Moderating Role of Firm Size***

Past studies show the correlation between firm size and board independence. For example, Monem (2013) investigates the determinants of board structure in Australia and found that board independence increases with firm size. According to Practice 5.2 of MCCG 2021, for large companies, the board must comprise of a majority independent directors. Hence, this study

proposes that large firm size tends to have a higher proportion of board's independence, and to an extent influence in the making strategic decisions, in particular the IR disclosure level. Chobpichien et al. (2008) investigates the relationship between firm size, board of directors' quality, managerial ownership and level of voluntary disclosure in Thailand. One of the characteristics used to measure the board of directors' quality index (BOQI) is the board independence. The results indicate that the larger firm size, the higher the BOQI and this in turn will result in the higher level of voluntary disclosure. Therefore, we introduce the following hypothesis:

H9: Firm size moderates the significant relationship between board independence and IR disclosure level.

***Board Gender and Integrated Reporting Disclosure Level: The Moderating Role of Firm Size***

Past research shows the link between firm size and board gender. For instance, Carter et al. (2003) found that the proportion of women and minorities member on boards increases with firm size and board size. Thus, this study argues that, in order to maintain a good image and reputation, large firm size appointed more women directors to fulfill certain requirement on women representative such as Practice 5.9 of MCCG 2021 which encourage that the board should comprises at least 30% of women directors. In this regard, gender diversity is linked with significant disclosure improvement (Gerwanski et al., 2019) including the most important elements in the integrated dissemination of information (Frias-Aceituno et al., 2012). Therefore, we introduce the following hypothesis:

H10: Firm size moderates the significant relationship between board gender and IR disclosure level.

***Board Education and Integrated Reporting Disclosure Level: The Moderating Role of Firm Size***

Chobpichien et al. (2008) investigates the relationship between firm size, board of directors' quality, managerial ownership and level of voluntary disclosure in Thailand. One of the characteristics used to measure the board of directors' quality index (BOQI) is quality of knowledge and expertise. The results indicate that the larger firm size, the higher the (BOQI) and this in turn will result in the higher level of voluntary disclosure. Hence, this study argues that firm size will influence the decision-making process by a diverse education board, including the decision on IR disclosure level. This is due to board education background guides the corporate disclosure of a company (Aberg & Torchia, 2020). Therefore, we introduce the following hypothesis:

H11: Firm size moderates the significant relationship between board education level and IR disclosure level.

***Ownership concentration and Integrated Reporting Disclosure Level: The Moderating Role of Firm Size***

In the context of firm size and ownership concentration relationship, Moshirian et al. (2022) found that there is a negative relationship between both variables and thus more disperse ownership in countries with high governance quality. However, in countries with weak governance quality, ownership concentration continues even as firms get larger. Thus, their studies highlight that a firm's ownership structure depends on the governance quality. Meanwhile, according to Raimo et al. (2020), firm size influences ownership concentration to disclose lower quality information of IR. Therefore, we introduce the following hypothesis:

H12: There is a significant relationship between ownership concentration and IR disclosure level with the moderating effect of firm size.

***Government Ownership and Integrated Reporting Disclosure Level: The Moderating Role of Firm Size***

Nguyen et al. (2021) found that company characteristics including firm size and government ownership are positively associated with company's CSR disclosure level. Thus, this study argues that firm size might influence government shareholders to demand for an effective corporate reporting that tells the value creation process as offered by IR. This is due to government-owned companies might disclose more information to meet the societal expectations (Suttipun & Bomlai, 2019). Therefore, we introduce the following hypothesis:

H13: Firm size moderates the significant relationship between government ownership and IR disclosure level.

***Institutional Ownership and Integrated Reporting Disclosure Level: The Moderating Role of Firm Size***

Mason (2005) found that larger firms have higher proportions of institutional shareholders. Thus, this study suggests that firm size influences the institutional shareholders to monitor the practices of corporate disclosure approach of a company including IR more closely. Therefore, we introduce the following hypothesis:

H14: Firm size moderates the significant relationship between institutional ownership and IR disclosure level.

**Method*****The sampling and data collection method***

Based on the list of IR adopters provided by SCM (2019) and SCM (2020), we examined 171 integrated reports published in 2018, 2019, and 2020. However, following Songini et al. (2021), we removed 41 companies (and their 123 reports) from the sample due to incomplete information in the period analyzed. The final sample comprises 48 observations of 16 listed companies on the Main Market of Bursa Malaysia after taking into account the companies that adopted IR for three years over the period 2018-2020 and have complete information. Meanwhile, this study collected data starting from the year 2018 due to the MCCG 2017 was introduced in 2017, and this approach is similar with a study by Michelon and Parbonetti (2012) in which the reaction of companies was evaluated a year after the introduction of the framework. Whereas the year 2020 is the most recent report available at the time of this study conducted, and because of the latest framework introduced by IIRC in January 2021 in which, some companies might have used this latest framework. The selection of 3 years period is also similar to the past IR studies by Ghani et al. (2018).

***Measurement of variables******Dependent variable***

This study uses quantitative content analysis to collect data from the annual report and the company's discrete reporting. The selections of this method because it is widely used in corporate and in the IR context as well as able to examine whether a framework is adopted or vice versa (Tiron-Tudor et al., 2020). This study follows the steps by Tejedo-Romero and Araujo (2020) to conduct the quantitative content analysis on IR disclosure level. First, the IR checklist is adapted from a past study by Tiron-Tudor et al. (2020) based on the IRF 2013. Content elements are examined to compute the IR Score (IRS), which is considered the key distinctive aspect of IR that differentiate it from other types of voluntary disclosure (Songini et al., 2021), and it is used by most of the past studies such as Chanatup et al. (2020), Omran et al. (2021), and Tiron-Tudor et al. (2020). Next, the coding data process is conducted manually, and each

sentence is coded by the following rule: scores of "1" if it is disclosed and "0" if not. Following a study by Tiron-Tudor et al. (2020), the IRS is computed as the average of the values obtained for each content element. The value of each content element will be measured as the average scores of each dimension, and if the dimensions had components, the average score of dimensions is first measured. This is due to each of the content elements, dimensions, and components being treated as equally significant. A recorded score closer to "1" indicates a high level of IR disclosure.

### *Independent variable*

This study uses board characteristics and ownership structure for independent variables as shown in Table 1.

Table 1: Operationalization of Independent Variables

<b>Independent Variables</b>	<b>Measurement</b>
Board Size	The number of directors on the board
Board Gender	Number of women on the board
Board Education	The members of the board divided into two categories based on the achievement of 1) a degree or an MBA, and 2) a PhD
Board Independence	The total number of independent members of the board
Ownership Concentration	Percentage of ordinary shares held by the 10 largest shareholders
Government Ownership	Percentage of ordinary shares owned by the government
Institutional Ownership	Percentage of ordinary shares held in block by institutional investors

### *Control variable*

This study includes CSR/sustainability committee (CSRCOM) as control variables to avoid any potential omitted variables bias (Zahid et al., 2020). Following Raimo et al. (2020), this study investigates the presence of a CSRCOM which represents a dummy variable that assumes a score of 1 if the committee presence and a score of 0 otherwise.

### *Data analysis strategy*

To examine the research model, we used the Partial Least Squares Structural Equation Modelling (PLS-SEM) analysis using the SmartPLS 4.0 software.

## **Findings**

### *Descriptive statistics*

Table 2 indicates the descriptive analysis for the dependent variables of IR disclosure level and the independent variables. For IR, the mean was 96%, which signifies that the firm's scores are higher.

Table2: Descriptive statistics for the dependent, independent variables, and control variable

<b>Construct</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
IR Score (IRS)	0.604	1	0.961	0.093
Board Size	7	15	9.979	1.591

Board Gender	0	5	2.729	1.162
Board Education	0	4	0.688	0.854
Board Independence	3	10	5.604	1.735
Ownership Concentration	0.458	0.879	0.722	0.096
Government Ownership	0	0.374	0.063	0.123
Institutional Ownership	0.079	0.787	0.512	0.214
Firm Size	20.751	27.477	23.546	1.694

### ***Measurement model evaluation***

Based on the two-stage analytical steps suggested by Anderson and Gerbing (1988), this study examined the measurement model (validity and reliability of the measures) and the structural model (testing the hypothesized relationships). To evaluate the measurement model, we assessed the loadings, average extracted (AVE) and the composite reliability (CR). The values of loadings and the AVE should be  $\geq 0.5$  and the CR should be  $\geq 0.7$ . This study found that the loadings and the AVEs are all higher than 0.5 as well as the CRs are all higher than 0.7. These results show that the measurement model demonstrates adequate convergent validity.

Besides, we also assessed discriminant validity to evaluate the distinctiveness of a construct using the HTMT criterion (Franker & Sarstedt., 2019; Henseler et al., 2015). HTMT is an estimate of the true correlation between two constructs if they were finely computed (Hair et al., 2017). The HTMT values should be  $< 0.85$ . However, the PLS-SEM algorithm could not be conducted to derive the HTMT ratio because the model consists of single-item constructs only. Alternatively, the HTMT ratio bootstrapping can be run to test whether the HTMT value is less than 1.00 and if the confidence interval contains such a value, it shows a lack of discriminant validity (Henseler et al., 2015). This study reported that none of the respective constructs consists of a value of 1.00, which indicates that all constructs are distinct. Collectively, both these validity tests have demonstrated that the measurement items are both valid and reliable.

### ***Structural model evaluation***

Based on the recommendation of Hair et al. (2019), we evaluated the path coefficients, the standard errors, t-values, and p-values for the structural model using a 5,000-sample re-sample bootstrapping procedure (Ramayah et al., 2018). Hahn and Ang (2017) suggest using a combination of criteria such as p-values, confidence intervals, and effect sizes because p-values are not a good criterion for testing the significance of the hypothesis. Based on the result, only (H11) board education level-to-IR score with the moderating effect of firm size ( $\beta = -0.502$ ,  $p < 0.05$ ), was found significant. Whereas, (H1) board size-to-IR score ( $\beta = -0.100$ ,  $p > 0.05$ ), (H2) board independence-to-IR score ( $\beta = 0.089$ ,  $p > 0.05$ ), (H3) board gender-to-IR score ( $\beta = -0.011$ ,  $p > 0.05$ ), (H4) board education level-to-IR score ( $\beta = 0.191$ ,  $p > 0.05$ ), (H5) ownership concentration-to-IR score ( $\beta = -0.089$ ,  $p > 0.05$ ), (H6) government ownership-to-IR score ( $\beta = -0.191$ ,  $p > 0.05$ ), (H7) institutional ownership-to-IR score ( $\beta = -0.074$ ,  $p > 0.05$ ), (H8) board size-to-IR score with the moderating effect of firm size ( $\beta = -0.110$ ,  $p > 0.05$ ), (H9) board independence-to-IR score with the moderating effect of firm size ( $\beta = 0.059$ ,  $p > 0.05$ ), (H10) board gender-to-IR score with the moderating effect of firm size ( $\beta = -0.224$ ,  $p > 0.05$ ), (H12) ownership concentration-to-IR score with the moderating effect of firm size ( $\beta = 0.136$ ,  $p > 0.05$ ), (H13) government ownership-to-IR score with the moderating effect of firm size ( $\beta = 0.565$ ,  $p > 0.05$ ), and (H14) institutional ownership-to-IR score with the moderating effect of firm size ( $\beta = 0.513$ ,  $p > 0.05$ ) were found insignificant. Thus, only H11 was supported, and the rest were not supported.



Similarly, the control variable of CSR/sustainability committee ( $\beta = 0.177$ ,  $p > 0.05$ ) does not influence the IR disclosure level. Thus, it shows that CSR/Sustainability committee do not influence the strategic decision of a company on the IR disclosure level. Besides, we also examined the effect size ( $f^2$ ). For interpretation and reporting, according to Sullivan and Feinn (2012), both the statistical significance (p-value) and substantive significance (effect size) are significant as the p-value can inform whether effects exist and not the size of the effect. This study follows a guideline by Cohen (1988) to measure the effect size in which the values of 0.02, 0.15, and 0.35 indicate a small, medium, and large effect size, respectively. Based on Table 3, board education, government ownership with moderating effect of firm size, board education with moderating effect of firm size and gender with moderating effect of firm size have large effects size on the IR disclosure levels. Whereas, board size, government ownership, ownership concentration, institutional ownership with moderating effect of firm size and ownership concentration with moderating effect of firm size have medium effect size. Finally, board gender, board independence, institutional ownership, board independence with moderating effect of firm size and board size with moderating effect of firm size have a small effect size.

Table 3: Results of the structural model analysis

nship (add hypothesis left)	Std. Beta	Std. Dev.	t-value	p-value	BCI LL	BCI UL	f <sup>2</sup>
B -> IRS	0.191	0.15	1.274	0.101	0.03	0.514	0.264
BGDIV -> IRS	-0.011	0.148	0.076	0.47	-0.22	0.22	0.001
BIND -> IRS	0.089	0.264	0.339	0.367	-0.231	0.547	0.022
BSIZE -> IRS	-0.100	0.13	0.77	0.221	-0.247	0.178	0.06
GOVOWN -> IRS	-0.191	0.579	0.331	0.37	-0.413	0.246	0.136
INSOWN -> IRS	-0.074	0.227	0.326	0.372	-0.328	0.241	0.019
OWNCON -> IRS	-0.089	0.143	0.626	0.266	-0.305	0.108	0.042
FSIZE x INSOWN -> IRS	0.513	0.606	0.847	0.199	-0.172	1.471	0.125
FSIZE x GOVOWN -> IRS	0.565	0.503	1.124	0.131	0.276	1.185	0.656
FSIZE x OWNCON -> IRS	0.136	0.276	0.493	0.311	-0.167	0.697	0.027
FSIZE x BIND -> IRS	0.059	0.329	0.179	0.429	-0.365	0.56	0.005
FSIZE x B -> IRS	-0.502	0.304	1.651	0.049	-1.164	-0.197	0.768
FSIZE x BGDIV -> IRS	-0.224	0.184	1.219	0.111	-0.596	-0.049	0.377
FSIZE x BSIZE -> IRS	-0.110	0.351	0.315	0.376	-0.933	0.257	0.012

### Discussion And Conclusion

The findings of this study indicate that firm size moderates the significant relationship between board educational level and IR disclosure level. This is due to the highly educated directors have a wide knowledge and great awareness to create value overtime as offered by IR and strengthen the company reporting strategy including IR practices. This situation is much stronger among the larger firm size due to they are capable of providing a clear guideline and provide financial and incentives support on the IR disclosure effort. The result extends the findings of Chobpichien et al. (2008) on the subject of voluntary disclosure. Meanwhile, this study contributes to the IR literature, showing the heated debate on the role of board characteristics and ownership structures on IR disclosure level. Second, this study broadens the application of a combination of legitimacy theory and agency theory. Furthermore, this study extends the list of the

determinant of IR disclosure level. Finally, this study also highlights a low number of companies that adopted IR consistently among Malaysian listed companies.

The findings of this study have significant implications for companies. First, in order to increase the transparency of corporate disclosure, they should include board educational level as part of the board diversity's commitment and providing the financial and incentives to guide the company's IR strategy. The findings of this study also have important implications for regulators. In order to improve the level of corporate disclosure provided by the company, regulators may extend the board diversity regulation into educational level, and not merely on gender diversity. Besides, they also may develop a conducive mechanism which consists of a clear policy and guidelines, an appropriate standard, aspect of financing and sufficient incentives as well as increasing awareness and knowledge on IR.

Whereas this study has several limitations. The first is the sample size is too small, which consists of 48 reports, as many companies were excluded because of incomplete information over three years period which may influence the generalization of the derived conclusions. The second limitation is in terms of the reliability issue in the data collection. In particular, this study uses the single-coder approach, which may result in bias data collection. Finally, this study only uses annual reports, integrated reports, CG reports, and the company's discrete reporting to collect the data. However, these limitations may form the basis for future studies. With regards to the first limitation, future studies can investigate a large sample size by adding more years to collect the data. In relation to the second limitation, future studies can employ at least two coders to enhance reliability. Finally, to address the third limitation, future studies can involve other mediums used by the company, such as websites and corporate letters to record all the relevant data.

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