

Impact of Safety Communication on Safety Commitment with Leader-Member Exchange Quality as a Moderating Factor: A Conceptual Framework

Rafidah Abdul Rashid¹, Shahrina Md Nordin², Rohani Salleh³

¹⁻³ Department of Management and Humanities,
Universiti Teknologi PETRONAS,

Bandar Seri Iskandar, 31750 Tronoh, Perak, Malaysia

*Corresponding author Email: rafidah.rzutp@gmail.com or afyda283@gmail.com

Abstract

Purpose: The main purpose of the conceptual paper is to discuss development of a proposed conceptual framework in exploring the relationship between safety communication, leader-member exchange and safety commitment.

Design/methodology/approach: The paper defines the development of a proposed conceptual framework of safety communication, leader-member exchange and safety commitment.

Findings: Safety communication has a positive relationship with safety commitment meanwhile leader-member exchange moderates the relationship between safety communication and safety commitment.

Research limitations/implications: Additional research is needed to empirically validate the proposed conceptual framework in the high risk organizations, particularly in oil and gas setting.

Practical implications: This paper could assist employers and employees to have deeper understanding of “why” and “how” it is necessary to create a positive safety climate at the workplace.

Originality/value: The paper and the proposed conceptual framework could be used as a leading indicator for future research in this area.

Keywords: Communication, Safety Climate, Safety Communication, Leader-member Exchange, Safety Commitment.

Paper Type: Conceptual Paper

1. Introduction

Safety has been emphasized in many high risk work environment such as construction site, manufacturing, mining, and oil and gas, which is due to high probability that many workplace accidents could occur from time to time (Al-haadir, 2013). Workplace accidents which could lead to serious injuries, fatalities and lost work time continue to be a major economic issue for employers that may incur both direct and indirect costs (Kines *et al.*, 2010; Zakaria, 2012). A number of researchers (e.g. (Cigularov *et al.*, 2010; Siu *et al.*, 2004) revealed that every year thousands of employees die at workplace and millions suffer from occupational injuries and illnesses. In Malaysia for example, from 2012 until March 2013, 49883 workplace accidents with 664 fatalities were reported by the Department of Occupational safety and Health (DOSH).

Bowander (1987) pointed out that there are three types of errors that could lead to fatal incidents which are referred to as system error, technological error and human error. There are several causes that lead to workplace accidents including failure of proper communication and lack of compliance with rules and procedures (Dahl, 2013; Settlement, 2013). A sound understanding of the factors that could influence safety work outcomes (i.e. employees' safety commitment and safety performance), will help to reduce number of accidents at the workplace thus improving organizational safety performance (Clarke and Cooper, 2004). The purpose of this paper therefore is to discuss development of a conceptual framework in exploring the relationship between safety communication, leader-member exchange and safety commitment.

2. Literature Review

This discussion in this paper revolves around amongst the central issues in relation to workplace safety which are communication, climate, leader-member exchange and commitment. Relevant literature on safety climate, safety communication, leader-member exchange and employees' safety commitment are hence critically reviewed.

2.1 Safety Climate at the Workplace

Safety Climate is defined as shared perceptions pertaining to safety procedures, policies and practices among employees in an organization (Cooper, 2008; Zohar, 2008). These perceptions are usually derived from two aspects such as individual factors and organizational factors including management decision making (Susan, 2008; Tsung *et al.*, 2007). Safety climate is hence characterized by day-to-day perceptions towards working environment and practices, the management and also relevant policies, which are very close to daily operations of the employees (Yule, 2003). The basic concept of safety climate emerged from the realm of organizational climate where it is commonly studied within the context of workplace environment in which safety is pertinent (Pereira *et al.*, 2011). Intellectual discourse and debate on safety climate began to receive attention in the 1980s when Zohar (1980) conducted a research on manufacturing industry (cited in Yule, 2003). Safety climate since then continues to be empirically studied more for than 30 years. Most of the studies however placed emphasis on safety climate measurement issues and its predictive validity with various safety outcomes in various contexts. The contexts may vary according to the different industries, organizations, countries and cultures (Zohar, 2010).

Studies on safety climate include several other relevant dimensions for instance safety rules and procedures, management commitment to safety, safety competence, supervisor support and safety communication (Fang *et al.*, 2006; Se *et al.*, 2004). There has been a line of research that further analyze the impact or relationship between safety climate and other concerns pertaining to safety performance, injuries rates, safety behaviours and safety commitment (Cigularov *et al.*, 2010; Wu *et al.*, 2008). This study however focuses on safety communication as it appears to be one of the most important dimensions within safety climate. According to Hoffman and Stetzer (1998), an open communication can be created in a positive safety climate.

2.2. Safety Communication

Safety communication is defined as a process of exchanging information between two or more people with regards to safety related issues (Siu *et al.*, 2004). Communication is a medium which leaders and followers structure, cultivate, and sustain useful exchanges. Effective communication between a leader and the members is another important aspect of organizations. According to (Vecchio-sadus, 2007), effective safety communication should include: "[a] an open and clear communication regarding safety among employees in an organization; [b] encouraging safe behaviour by providing feedback; [c] implementing a lesson-learned programmed for safety". Furthermore, (Cigularov *et al.*, 2010) stated that an effective communication is vital to engage workers in safety activities, to retain a positive culture, and to achieve support and cooperation.

Safety communication can be structured into two categories: formal and informal communication. Formal communication includes communication from upper management (superiors/supervisors), written formal communication, training and toolbox talk meanwhile informal communication is communication amongst employees which is sometimes referred to as ad-hoc communication (Alsamadani, 2013). In addition, Vecchio-sadus (2007) affirms that safety communication comes in various types, for example, incident reports, safety performance, workplace inductions, and procedures and policies. Upper management communication, also called as downward communication, is from upper to low level management. For instance, communication between manager to immediate supervisor and from supervisor to subordinates. This type of communication shows that subordinates receive information or instruction from their leader in order to do tasks or carry out daily work. A line of studies had investigated and explored the safety communication that takes place between supervisor and subordinates as both of parties are the sets of people that are always involved in interactions on a frequent basis. For example, (Kines *et al.*, 2010) and (Michael *et al.*, 2006) also studied about supervisor and subordinates communication in different organizations.

2.3. Safety Commitment

Safety commitment is defined as "an individual identification with an involvement in safety activities", characterized by a strong acceptance of and belief in the organizations safety goals and a willingness to exert effort to improve safety in the workplace" (Cooper, 2006). According to (Cooper, 1995) safety commitment is

important as “the intensity of this commitment tends to determine both an individual’s acceptance of company safety initiatives and their personal approach towards safety in the workplace”. Sordani (2012) stated that workers’ commitment at the workplace is persuaded by different elements, which are related to the external and internal atmosphere.

Researchers (e.g. Abd Aziz, 2008; Rosli, 2010) debated that safety commitment is reflected in employees’ safety attitudes and behaviours. According to Rosli (2010), employees who have high level of safety commitment are able: [a] to identify the hazard at the workplace; [b] always comply with safety rules and procedures; [c] are always willing to be involved in safety activities. Safety behavior, according to Neal and Griffin (2006) has two components which are safety compliance and safety participation. Safety compliance refers to the core safety activities that need to be carried out by workers to preserve workplace safety meanwhile safety participation refers to workers willingness to involve in voluntary safety activities such as helping co-workers and promotes safety and its principles at the workplace (Neal and Griffin, 2006). Safety behaviour has relationship with other variables. For instance, it has been revealed that safety communication has a relationship with safety behaviour component (i.e. safety compliance) (Griffin and Neal, 2000).

2.4 Leader Member Exchange as a Moderator

Leader member exchange refers to work-related exchange relationship between a leader and the followers (Yulk, 2001). The LMX theory was proposed first by Graen and Dansereau (1975), states that leaders and followers form and develop their relationship through a series of interactions including conversation, observations, and tryouts throughout a time period (Graen and Scandura, 1987). LMX varies from other leadership theories because it focuses on the dyadic relationship between the leader and members (Martin *et al.*, 2005). High quality LMX relationship sometimes referred as in-group exchanges. In contrast, low quality LMX relationships, sometimes termed out-group (Martin *et al.*, 2005). In a high quality, leaders and workers are engaging in a highly interactive exchange process that should encourage a more positive and open environment (Northouse, 2010).

Past research has demonstrated that LMX has a positive relationship with several important organizational outcomes such as communication satisfaction, organizational commitment, job satisfaction, safety commitment and accidents, and work performance (Ang *et al.*, 2005; Hossman *et al.*, 2003; Kee *et al.*, 2004). Some researchers have also examined LMX as moderator. They found that leader-member exchange moderates the relationship between frequency of communication and performance, and goal difficulty and employee engagement in learning activities (Bezuijen *et al.*, 2010; Kacmar *et al.*, 2003). In addition, a high quality LMX relationship increases goal commitment (Klein *et al.*, 1999). Leader-member exchange therefore, will enhance the safety commitment and moderates these two variables.

2.5 Safety Communication and Safety Commitment

Discourse and debates on safety have emphasized on safety climate within different workplace and industry for example manufacturing, oil and gas, and construction site. Different researchers however use different dimensions of safety climate. The conceptual framework that shall be discussed in this paper will focus on safety communication climate as one of the dimensions under safety climate. The framework shall also illustrate how safety communication is related to work outcome (i.e. safety commitment). Employee safety commitment can be described through their safety attitude and safety behaviour which can be measured from their compliance, their involvement in making safety as their priority while working (Cooper, 1995; Rosli, 2010).

Researchers revealed that safety communication has a positive significant relationship with safety commitment. Kines *et al.* (2010) proved that the foremen and subordinates daily verbal exchanges significantly help to increase employees’ physical safety level of the work site and their safety performances. In another study, Vinodkumar and Bhasi (2010) reported that safety communication and feedback is positively related to safety knowledge, which is also indirectly related to safety compliance. In contrast, Al-haadir (2013) argued that safety communication has a positive influence on safety behaviour. Other studies (e.g. Hofmann and Margeson, 1999) suggest that workers who are engaged in more safety-related communication more likely have greater safety commitment. On a contrary, communication of safety issues between supervisor and workers has little direct effect on the worker’s safety related event (Michael *et al.*, 2006).

As discussed above, previous studies had showed that there is a relationship between safety communication and safety commitment. Safety communication is one of the most important dimensions of safety climate. Limited studies however have been focused on safety communication compared to others such as management

commitment and safety systems (Guldenmund, 2007). Besides, most of studies focused on supervisor communication which it revealed that subordinates are more close to their supervisor compared to the upper management. Therefore, there is still limited study that focus on management communication related to safety with employees' safety commitment especially in Malaysian' oil and gas setting. Thus, confirming the need of more research on the topic.

3. Conceptual Framework

Upon an extensive review of the relevant literature, a conceptual framework has been developed for a study in investigating the relationship between safety communication and safety commitment with leader-member exchange as moderating factor in an oil and gas plant here in Malaysia. Figure 1 illustrates the proposed conceptual framework of the study. It is hypothesized that safety communication (i.e. management communication and supervisor communication) have a significant relationship with safety commitment and leader-member exchange could enhances safety commitment of the employees in the context of the present study which is an oil and gas plant.

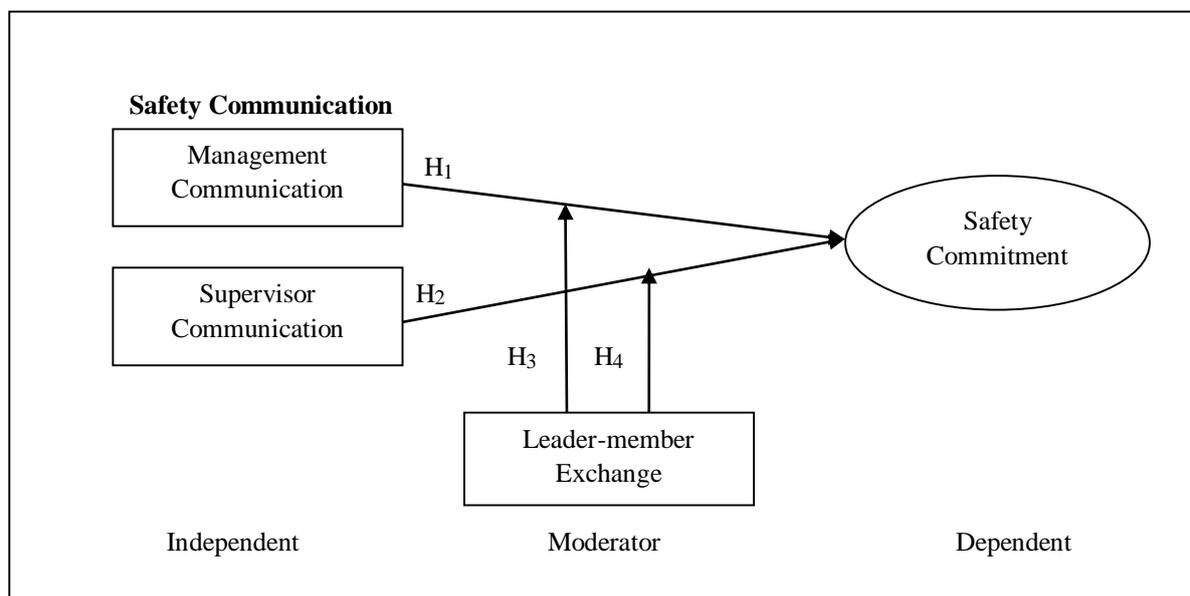


Fig 1: Proposed Conceptual Framework

Based on the above framework, four (4) hypotheses are proposed to be tested in the research.

H₁ Management communication regarding safety issues has a positive relationship with employees' safety commitment.

H₂ Supervisor communication regarding safety issues has a positive relationship with employees' safety commitment.

H₃ Leader member exchange moderates the relationship between management communication regarding safety issues and safety commitment.

H₄ Leader member exchange moderates the relationship between supervisor communication regarding safety issues and safety commitment.

4. Conclusion

This conceptual paper emphasizes on the underlying assumption that there is a significant relationship between safety communication and safety commitment and also leader-member exchange as a moderator. The present study extends several models and studies such as (Michael *et al.*, 2006; Sordani, 2012) by integrating safety commitment as a potential dependent variable of safety communication. Safety communication will be measured by two subscales which are management communication and supervisor communication. Additionally, it bridges the gap and enhances the empirical literature by integrating safety communication,

leader-member exchange and safety commitment in a single model. It is hence imperative that future researchers validate the proposed conceptual framework in the high risk organizations, particularly in oil and gas setting.

References

- Abd Aziz, F.S. (2008). Safety culture and commitment to safety in the Malaysian Railway System, *Unpublished doctorate thesis, University of Nottingham, UK.*
- Al-haadir, S., Panuwatwanich, K., & Stewart, R. A. (n.d.). Empirical Analysis of the Impacts of Safety Motivation and Safety Climate on Safety Behaviour.
- Alsamadani, R., Hallowell, M., Javernick-will, A. N., Å, R. A., Hallowell, M., & Javernick-will, A. M. Y. N. (2013). Construction Management and Economics Measuring and modelling safety communication in small work crews in the US using social network analysis (October), 37–41. doi:10.1080/01446193.2012.685486.
- Ang, C.H., Ansari, M.A. and Jantan, M. (2005), “Upward influence and work outcomes: the mediating role of LMX and organizational support”, paper presented at the Annual Meeting of the Academy of Management, Honolulu, HI, August.
- Bowander, B., 1987. The Bhopal accident. *Technological Forecasting and Social Change* 32 (2), 169–182.
- Bezuijen, X.M, Karen V.D., Peter T., Thierry, H. (2010). How leaders stimulate employee learning: A leader-member exchange approach. *Journal of Occupational and Organizational Psychology*, 83, 673–693.
- Cigularov, K. P., Chen, P. Y., & Rosecrance, J. (2010). The effects of error management climate and safety communication on safety : A multi-level study. *Accident Analysis and Prevention*, 42(5), 1498–1506. doi:10.1016/j.aap.2010.01.003
- Clarke, S. and Cooper, C.L. (2004), *Managing the Risk of Workplace Stress: Health & Safety Hazards*, Routledge, London
- Cooper, Watterson (2008). Safety Climate Assessment Tool: Briefing Sheet for Senior Managers Safety culture and safety climate Creating safer workplaces: assessing the determinants and role of safety climate 84.
- Cooper Dominic (2006) The Impact of management’s commitment on employee behavior : A field study, American society of safety engineer. www.behavioralsafety.com/.../Impact_of_Management_Commitment.pdf or <http://bsmsinc.com/Documents/Impact%20of%20Management%20Commitment-Cooper-013.pdf> 18.12.10.
- Cooper, D. (1995). Measurement of safety climate: A component the core features of safety climate.
- Dahl, Ø. (2013). Safety compliance in a highly regulated environment: A case study of workers ’ knowledge of rules and procedures within the petroleum industry. *Safety Science*. 60: 185-195
- Fang, D., Chen, Y., Wong, L., 2006. Safety climate in construction industry: a case study in Hong Kong. *Journal of Construction Engineering and Management* 132 (6), 573–584.
- Graen, G. B., & Scandura, T. A. (1987). Toward a psychology of dyadic organizing. In B. Staw & L. L. Cumming (Eds), *Research in organizational behaviour* (Vol. 9, pp.175-208). Greenwich, CT:JAI.
- Griffin, M. A., and Neal, A. (2000). Perceptions of Safety at Work : A Framework for Linking Safety Climate to Safety Performance , Knowledge , and Motivation, 5(3), 347–358.
- Guldenmund, F.W., 2007. The use of questionnaires in safety culture research - an evaluation. *Safety Science* 45, 723 - 743.
- Hofmann, D.A. & Morgeson, F.P. (1999) Safety related behavior as a social exchange: the role of perceived organizational support and leader member exchange. *Journal of Applied Psychology*, 59(2), 286–96.
- Hofmann, D.A., Stetzer, A., 1998. The role of safety climate and communication in accident interpretation: Implications for learning from negative events. *Academy of Management Journal* 41, 644–657.
- Hofmann, D.A., Morgeson, F.P. and Gerras, S.J. (2003), “Climate as a moderator of the relationship between leader-member exchange and content-specific citizenship: safety climate as an exemplar”, *Journal of Applied Psychology*, Vol. 88, pp. 170-8.
- Kacmar KM, La Witt, S Zivnuska and SM Gully (2003). The interactive effect of leader-member exchange and communication frequency on performance ratings. *Journal of Applied Psychology* 88 (4), 764-772.
- Kee, D.M.H., Ansari, M.A. and Aafaqi, R. (2004), “Fairness of human resource management practices, leader-member exchange, and organizational commitment”, *Asian Academy of Management Journal*, Vol. 9, pp. 99-120.
- Kines, P., Andersen, L. P. S., Spangenberg, S., Mikkelsen, K. L., Dyreborg, J., & Zohar, D. (2010). Improving construction site safety through leader-based verbal safety communication. *Journal of Safety Research*, 41(5), 399–406. doi:10.1016/j.jsr.2010.06.005.

- Klien, H.J., Wesson, M.J, Hollenbeck, J.R, and Alge, B.J. (1999). Goal commitment and the goal-setting process: Conceptual clarification and empirical synthesis. *Journal of Applied Psychology*, 84, 885-896.
- Martin R., Thomas G., Charles, k., Epitropaki O., McNamara, R. (2005). The role of leader-member exchanges in mediating the relationship between locus of control and work reactions.
- Michael, J. H., George, Z., Wiedenbeck, J. K., & Ray, C. D. (2006). Production supervisor impacts on subordinates' safety outcomes:, 37, 469–477.
- Neal, A., and Griffin, M., (2006) “A study of the lagged relationships among safety climate, safety motivation, safety behavior, and accidents at the individual and group levels”, *Journal of Applied Psychology*, 91: 946-53.
- Northouse, P. G. (2010). *Leadership: Theory and Practice* (5th Ed.) Sage Publication.
- Pereira, M. O., Dias, F. R., & Brás, P. M. (2011). Safety Climate in an Oil Refinery and in Subcontracted Firms, 336–340.
- Rosli, M. (2010). Safety Behaviour: The Role of Safety Commitment, (2000), 1–12.
- Seo, D., Torabi, M. R., Blair, E. H., & Ellis, N. T. (2004). A cross-validation of safety climate scale using confirmatory factor analytic approach. *Journal of Safety Research*, 35, 427–455.
- Settlements, L. a. (2013, 23rd October). "Oil and Gas Accidents." Retrieved 2nd December, 2013, from http://www.lawyersandsettlements.com/lawsuit/oil-and-gas-accidents.html#_UrexfNJmiSo
- Siu, O., Phillips, D. R., & Leung, T. (2004). Safety climate and safety performance among construction workers in Hong Kong The role of psychological strains as mediators, 36, 359–366. doi:10.1016/S0001-4575(03)00016-2.
- Sordani, B.Y. (2012). *The Relationship Between Safety Climate and Safety Commitment : A Case Study in Alps Electric (Malaysia) Sdn Bhd*. Universiti Utara Malaysia.
- Susan E. Hahna, Lawrence R. Murphy b (2008). A short scale for measuring safety climate. *Safety Science* 46 , pg 1047–1066
- Tsung-Chih Wua,, Chi-Wei Liub,c, Mu-Chen Lua (2007) Safety climate in university and college laboratories: Impact of organizational and individual factors. *Journal of Safety Research* 38 pg 91–102 .
- Vecchio-sadus, A. M. (2007). Enhancing Safety Culture Through Effective Communication, 1–9.
- Vinodkumar, M. N., & Bhasi, M. (2010). Safety management practices and safety behaviour : Assessing the mediating role of safety knowledge and motivation. *Accident Analysis and Prevention*, 42(6), 2082–2093. doi:10.1016/j.aap.2010.06.021
- Wu, T., Chen, C., & Li, C. (2008). A correlation among safety leadership, safety climate and safety performance, 21, 307–318. doi:10.1016/j.jlp.2007.11.001.
- Yule, S. (2003). Zohar (1980) was the pioneer of assessing the state of safety via an attitude questionnaire instead ... Page 1 of 18 Safety culture and safety climate: A review of the literature file://C:\EFCOG\Working Groups \ ISMWG \ ISMPMWG \ Safety Culture \ 02-25, (1980), 1–18.
- Yukl, G.A. (2001) *Leadership in organizations*, 5th edn. Prentice-Hall, Englewood Cliffs, NJ.
- Zakaria, N. H. (2012). Workplace Accident in Malaysia:, 2(5), 75–88.
- Zohar Dov (2008) Safety climate and beyond: A multi-level multi-climate framework. *Safety Science* 46 , pg 376-387.
- Zohar, D. (2010). Thirty years of safety climate research : Reflections and future directions. *Accident Analysis and Prevention*, 42(5), 1517–1522. doi:10.1016/j.aap.2009.12.019.