EXPLORING THE ROLE OF SAFETY CULTURE FACTORS TOWARDS SAFETY BEHAVIOUR IN SMALL-MEDIUM ENTERPRISE

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ABSTRACT

Safety culture is a subset of organizational culture and clarify SMEs safety and health values of its workforce through policies, procedures, practices and encompasses the norms and values of the entire organizations. Previous found that safety culture factors related to safety behaviour of employees in SMEs. The aim of this study is to determine the influence of safety culture factors (safety management practices, safety attitude and safety knowledge and safety motivation) towards safety behaviour and mediated by safety climate. The findings of this study will contribute information and justification about the current factors of safety culture in SMEs sector. Thus, it is likely the study also helps SMEs management about the range of strategies available. Future researches needed to assess the framework and test it in practice and the adoption of disparate views from stakeholders of SMEs for each factor will be valuable.

Keywords: Safety Culture, Safety Climate, Safety Behaviour, Small Medium Enterprise.

INTRODUCTION

Study on human safety behaviour as the main predictor of occupational accident started as early as 1940s where Heinrich (1941) concluded that 88% of the industrial accidents caused by unsafe behaviour. Based on Heinrich Theory, human factor is the important to be investigated because it contributed the most to the occurrence of workplace accidents. Then, Bowander (1987) concluded that workplace accident contributing factors are namely engineering factor, technological factor, system failure factor and also human safety behavioural factor. A follow-up study by Gyekye (2010) found that safety behaviour of the workers (unsafe act) is the main fundamentals which cause occupational accident besides working environment (unsafe condition). Based on the above mentioned literatures, various efforts from previous researchers to understand and identify problems related to safety behaviour among employees from different sectors that includes; construction, oil and gas industry, food industry, manufacturing (DePasquale & Geller, 1999; Langford et al., 2000; Medina et al., 2009; Rundmo et al., 1998; Tucker & Turner, 2011). These studies believed that the identification of the main contributors to safety behaviour could lead to the prevention of industrial accidents.

The Small Medium Enterprises (SMEs) have been labelled as lower level of safety compliances (Surienty, 2012) and the SMEs continues to demonstrate its economic importance to the country towards economic growth as well as its contribution in creating job opportunities to the people. In fact, a series of SMEs development programs were organized annually to

provide training and to enhance necessary skills in order to expand and grow the businesses. Besides, the ease of financing access it allows SMEs to exploit this advantage to ensure continuity of the business (Kee et al., 2011). However, the workplace accidents in SMEs increase over the years, and since 2008 the number of workplace accidents has never slowed down. An escalating trend in workplace accidents could be witnessed over the years from 54,988 workplace accidents in 2008 to 60,590 workplace accidents in 2012. Such high number of workplace accidents could not be neglected as it involves high number of fatalities recorded (Kee et al., 2011).

Safety culture factors shape human behaviour. In fact, there has been considerable evidence suggesting a positive relation between safety climate and safety performance (Neal & Griffin, 2006; Steyrer et al., 2012). However, little is known about the extent of safety culture factors influence safety behaviour in SMEs (Flin et al., 2006; Guo et al., 2016). The main purpose of measuring safety culture was to provide opportunities for improving safety behaviour to enhance safety performance in SME. With this background, relevant literature will be conducted to develop and validate a framework of SME employee safety behaviour. This overall context suggested the need to investigate and understand the connections of safety culture factors by exploring it effects on safety behaviour of employee in SMEs.

LITERATURE

Safety Behaviour

Human safety behaviour becomes major contributors in workplace and good safety behaviour lead to safety compliance in the workplace. In most cases, researcher measure on safe behaviour (Griffin & Neal, 2004) and unsafe behaviour (Rundmo, 1998) and findings showed that it influenced by organizational and cultural factors (Brown et al., 2000; Mullen, 2004; Oliver et al., 2002; Thomas et al., 1999). A well- known Domino Theory is classical theory on accident causation model proposed by Henrich (1931). Henrich suggested that any injury (5th domino) necessary caused by an accident from 4th domino because of unsafe acts of a person or unsafe condition at workplace (3rd domino) and proceeded by fault of person (2nd domino) and social environment (1st domino). In Domino Theory, removing 3rd domino is the most effective way to overcome an injury in workplace. This lead by Henrich (1931) findings on 75,000 accidents that shows almost 88% caused by unsafe act of person, only 10% because of unsafe conditions and 2% acts of God. Previous findings also showed that workplace accidents and injuries due to unsafe behaviour rather than unsafe environment (Mullen, 2004) and unsafe act contributed to most all workplace injuries (DuPont, 1991; Fogarty & Shaw, 2010; Zhou et al., 2008; Guo et al., 2016).

Neal and Griffin (1997) proposed a model based the on theories of job performance (Borman & Motowidlo, 1993; Campbell et al., 1993) distinguishes between various components of performance. With regard to safety, safety compliance and safety participation can be treated as safety behaviour or components of safety performance (Neal et al., 2000). In another study, Pousette et al. (2017) measured self-rated safety behaviour by structural safety behaviour (concerning participation on organized safety activities), interactional safety behaviour (concerning safety activities in the daily work in interaction with co-workers and management) and personal safety behaviour (measuring behaviour promoting personal protection).

It assumed that safety related behaviours such as safety compliance and safety participation considered as components of safety performance. Safety compliance represents the behaviour of the employees in ways that increase their personal safety and health. Safety participation represent the behaviour of employees in ways that increase the safety and health of co-workers and that support an organization's stated goals and objectives (Boughaba et al., 2014; Nielsen, 2014). Recent study shows that safety behaviour is the most salient predictor of healthcare work hazard and risk (Eklöf et al., 2014). Additionally, research also shows that good safety behaviour is associated with adequate resources and routines, workplace learning, supportive managers and colleagues to form a safety culture (Flin et al., 2006; Vincent et al., 2014; Yorio et al., 2015). On the other hand, insufficient resources, lack of communication and collaboration in safety and health context among the organization members will contribute to acceptance of working condition that could lead to stressors.

Safety Culture

Safety culture was enlightened after the Chernobyl accident in 1986 (Wachter & Yorio, 2014) and stems from the organizational culture (Clarke, 1999). To fully understand the concept of safety culture, it is hence necessary to have an understanding about organizational culture. Although the concept of organizational culture had been discussed for several years, the interest for it increased during the early 1980's (Guldenmund, 2010). Safety culture has been described as a subclass of organizational culture (Clarke, 1999). According to Pidgeon (1991), safety culture is a set of roles, norms, technical, social, attitudes, and belief practices intended to minimize the exposure of the public, managers, employees, and customers to injurious or dangerous conditions. Guldenmund (2010) assumed the organizational culture subset approach and described safety culture as an aspect that influences behaviour and attitudes related to decreasing or increasing risk. Cooper (2000) defined safety culture as the shared organizational beliefs, attitudes, values, and norms including attitudes associated with the proper conduct, danger, and risk of hazardous operations. Zohar (1980) defined safety culture as the perception an employee has about environmental safety characteristics and organizational traits that influence safety performance. Zohar (1980) explains that such employee perceptions are subject to the influence of attitude, personality, and organizational policy. The above definition implies that safety culture is not a standalone concept and it is the reflection of shared values, beliefs, attitudes, and perceptions manifested in the employee perception of environmental safety and organizational characteristics that influence safety behaviours (Cooper, 2000; Cox & Flin, 1998; Guldenmund, 2000; Pidgeon, 1991; Zohar, 1980). Safety culture factors include safety management practices, safety motivation and safety knowledge and safety attitude.

SMEs Safety Behaviour Framework

Safety management practices

Safety management practices regarded as a sub-system of the total organizational management and carried out via the organization's safety management system with the help of various safety management practices. Kirwan (1998) relates safety management to the actual practices, roles and functions associated with remaining safe. In hypothesizing the constituents in safety management, safety management practices should be included that could commonly be perceived by the employees and those should also have a pertinent role in shaping the safety

environment (Vinodkumar & Bhasi, 2011). Previous studies have included, management commitment in safety activities and safety rules and procedures (Trinchero et al., 2017; Vredenburgh, 2002; Yorio & Wachter, 2014), safety training (Flin, 2017; Lin et al., 2017; Vredenburgh (2002), workers' involvement, and safety communication and feedback (Vredenburgh, 2002), and safety promotion and policies (Brunetto, et al., 2016; Kapp & Han, 2017). Moreover, safety management practices was only found in the study of small and medium industry (Subramaniam et al., 2016).

In one of the first investigations of safety climate, Zohar (1980) found that management's commitment to safety is a major factor affecting the success of an organization's safety programs. The safety comment of the management must result in an observable activity on the part of the management and must be demonstrated in their behaviours as well as their words (Hopkins, 2014). Employees' perception will reflect how employees believe that safety is to be valued in the organization (Griffin & Neal, 2000). In high risk environments like chemical industries (Cox & Flin, 1998; Şimşekoğlu & Nordfjærn, 2017; Vinodkumar & Bhasi, 2010) management commitment has been repeatedly studied. Following study by Vredenburgh (2002), management commitment is also considering as management practices.

Regular communication about safety issues between management, supervisors and workforce is an effective management practice to improve safety in workplace. Cigularov et al. (2010), Demirkesen and Arditi (2015), Kouabenan et al. (2015), and Yorio and Wachter (2014) included communication and feedback as a factor for safety performance. Earlier studies also evidence that safety communication and feedback as a management practice is a useful tool to support safety behaviour in healthcare through that related to hazard reporting system, open door policy for safety issues, communication about safety goals and opportunity to discuss safety issues (Brunetto et al., 2016; Pousette et al., 2017; Sujan et al., 2015).

In fact, safety rules and procedures found as a factor in high risks industry safety studies and showed that it has significant correlation with safety behaviour (Vinodkumar & Bhasi, 2010; Vinodkumar & Bhasi, 2011). Based on the above findings, the level of enforcement of safety rules and procedures is considered as a safety management practice because its related to effective rules and procedures of work to prevent accidents occurring through adequately enforcing safety rules, and regular safety inspections (Hale et al., 2015; Pinto, 2014; Taylor & Snyder, 2017). The perceptions of employees on safety management practices implemented in their organizations considered as organizational factors influences safety behaviour. Hence, safety management practices are considered antecedents of safety behaviour in this study. Given this existing research, the hypotheses proposed were:

> H_1: *Safety management practice is significantly related to safety behaviour.*

Safety Knowledge

Employees' safety perceptions might influence not only by safety climate, but also by safety management practices of the organization (Vinodkumar & Bhasi, 2010). This supported a finding by Neal and Griffin (2006) proposed that safety climate and safety knowledge have an important and lasting effects on employees to guide their safety behaviour. According to theories of job performance (Campbell et al., 1993; Gilboa et al., 2008), behaviour is determined by an interaction of motivation and knowledge. Campbell et al. (1993) consider job performance as an individual-level variable. He described the performance components as a function of three determinants: (1) declarative knowledge, (2) procedural knowledge and skills, and (3)

motivation. Scholars (Neal et al., 2000; Vinodkumar & Bhasi, 2010) often combined the first two determinants into a single one (i.e. safety knowledge) when explaining safety behaviour. Christian et al. (2009) reported that safety behaviour was strongly related to safety knowledge. Neal et al. (2000) also found that safety knowledge can predict safety attitudes. The effect of safety training, safety communication, and safety rules and procedures are significantly related to safety knowledge (Vinodkumar & Bhasi, 2010). Given the direction of the causation assumed from the literature, the following was the proposed hypotheses:

> H_2: Safety knowledge is significantly related to safety behaviour.

Safety Motivation

Motivation recognized as a crucial thrust that directly or indirectly affecting safety behaviour and the success of the safety involvement in general (Ajzen et al., 2009; Lund & Aaro, 2004). It been identified as construct in well-known models of accident prevention (Christian et al., 2009; Vinodkumar & Bhasi, 2010). Safety motivation is related to individual factors of behaviour to attain a certain goal (Ajzen et al., 2009). While, Neal and Griffin (2006) consider safety motivation as an effect of individual's willingness to enact safety behaviours. Individuals should be motivated to comply with safe working practices and to participate in safety activities if they perceive that there is a positive safety climate in the workplace.

Nevertheless, literatures on safety motivation are still limited. Most of this research is focusing on how to motivate workers to work safely. Furthermore, safety performance theoretical studies have treated safety motivation as part of safety compliance and safety participation. As a result, these studies have ignored the divergence between theoretical and epistemological; especially concerning knowledge, attitude and actions related to intention for safety (Goh et al., 2012; Lund & Aaro, 2004). Studies by Griffin and Neal (2000), Hofmann and Mark (2006), and Zohar and Luria (2005) evidenced that safety management practices influenced the worker's motivation regarding work safety behaviour. Prior research has consistently reported that higher level of safety motivation is an indication for positive relationship with effective organizational safety management practices (Christian et al., 2009; Sinclair et al., 2010). Correspondingly, safety motivation also was found to be positively related to safety performance in earlier studies (Neal & Griffin, 2006; Vinodkumar & Bhasi, 2010). Christian et al. (2009) reported that safety behaviour was strongly related to safety motivation. The effect of safety training, safety communication, and safety rules and procedures significantly related to safety motivation (Vinodkumar & Bhasi, 2010).

Despite variation of safety strategies that have been proposed (e.g., safety performance, safety compliance, safety participation), but there is evidence to support the effectiveness of this approach in behavioural based safety measure (Guldenmund, 2000; Griffin & Neal, 2000). However, many researchers have contended that safety motivation has incomplete without the justification of physiological and psychological factors as each employee's in organization are influenced by personal and social motives (Ajzen et al., 2009; Christian, 2009). Even though studies by Christian et al. (2009), and Neal and Griffin (2006) have evidenced that safety motivation is influenced by safety management practices, but when it relates to performance, the status of safety motivation in this regard in unclear and questionable (Pedersen & Kines, 2011). Given the direction of the causation assumed from the literature, the following was the proposed hypotheses:

H₃: Safety motivation is significantly related to safety behaviour.

Safety Attitudes

In order to prevent errors, injuries, and accidents both unsafe acts and unsafe conditions should eliminated. However, attention has tended to focus on the patient safety because physical evidence can be easily gathered to account for the accident (Braithwaite et al., 2015; Okuyama et al., 2014). Brown et al. (2000) found that workers' safety attitude was significantly related to safety behaviour. Since less focus has been paid to measure the factor affect employee's safety participation and safety compliance with safety behaviour, so safety attitudes need to closely examined (Brown et al., 2000). Relatively little effort has been devoted to examining the safety management factors to reducing or eliminating unsafe acts. It is challenging to measure worker's safety attitudes and thus assess the impact workers' safe behaviour's (Vinodkumar & Bhasi, 2009). Employee's mental process is an important factor that can present how they perceive accident risk, adjust their safety attitudes and then behave safely. To understand how workers' safety attitudes, lead to safe behaviours, their mental processes need to be closely investigated (Shin et al., 2014). Moreover, attitudes depend on how people perceive risks. Even though earlier studies argue that workers' attitudes towards safety affect self-reported accidents rates, but Vinodkumar and Bhasi (2009) found this factors are not significantly correlated. Therefore, the following hypothesis was proposed:

H₄: Safety attitudes are significantly related to safety behaviour.

Safety Climate

The safety climate is defined as "*shared employee perceptions about the relative importance of safe conduct in their occupational behaviour*" (Zohar, 1980) as consensual or shared social cognition regarding the relative importance or priority of safety versus productivity at the workplace. Such socially shared perceptions inform employees of management commitment to their safety and health, guiding appropriate task behaviours during work involving physical risks. Safety climate perceptions emerge by sharing personal experiences that inform employees of the extent to which management invests in their protection (as opposed to production), leading them to develop congruent behaviour-outcome expectations and act accordingly. Safety climate informs employees about the priority of safety during production processes involving physical or health risks, resulting in compatibly adjusted role behaviour. A positive safety climate will increase the frequency of safety behaviour among employees working in hazardous environment and vice versa. The preceding definition follows the conceptual framework of organizational climate research whereby climate perceptions refer to the meaning employees attach to policies, procedures, and practices they experience, and the behaviours being expected and rewarded (Reichers & Schneider, 1990). According to Hofmann et al. (2017), climate perceptions differ from other organizational perceptions in that their objective is to uncover the (implicit) order in the organizational environment as a means for better adapting or adjusting to that environment. Because policies, procedures, and practices constitute the building blocks of the organizational environment, climate perceptions as order-seeking interpretations of the environment refer to the nature of relationships between or the relative priorities among these elements rather than to the interpretation of individual elements in isolation. Thus, safety climate relates to shared perceptions regarding the priority of safety

policies, procedures, and practices and the extent to which safety compliant or enhancing behaviour is supported and rewarded at the workplace (Zohar & Luria, 2010). The more coherent and comprehensive safety policies are and the more frequently they are communicated and implemented during production processes, the greater is perceived management commitment to employee protection, constituting the core meaning of safety climate.

H_5: Safety climate mediates the relationship between safety management practices, safety knowledge, safety motivation and safety attitude and safety behaviour.

PROPOSED FRAMEWORK

Although the hypotheses presented above are grounded in the literature and arrived thorough an understanding of the concepts, further empirical testing is required to test these hypotheses to establish the model as applicable in relating the safety culture factors that affect safety behaviour of SMEs. A conceptual model was developed (Figure 1) to demonstrate that factors may have an impact on SMEs safety behaviour.
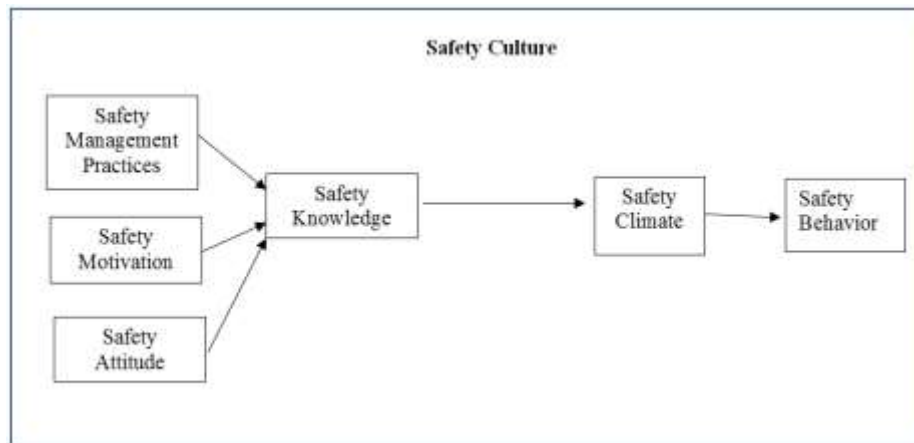
FIGURE 1
RESEARCH IMPLICATIONS AND FUTURE RESEARCH

This framework designed for use by researchers as a starting point for future investigation. This paper provides researchers and practitioners with a comprehensive framework of safety culture factors towards employee safety behaviour in SMEs, serving as a guideline for clearer understanding. This study is relevant as it justifies the safety performance of SMEs to ensure employee safety. In addition, it serves as a basis for further understanding on the comprehensive factors to define safety culture (Gutberg & Berta, 2017; Nieva & Sorra, 2003). The findings of this study will contribute information and justification about the current factors of safety culture in SMEs sector. Thus, it is likely the study also helps SMEs management about the range of strategies available. Future researches are needed to assess the framework and test it in practice. Researchers and practitioners can use the framework for both qualitative and quantitative studies and adoption of disparate views from stakeholders of SMEs for each factor will be valuable.

CONCLUSION

Safety behaviour plays an important role in predicting employee safety and previous studies showed that the linkage between safety behaviour and safety outcomes represents the critical gap in existing theories. This proposed framework offers a different perspective for safety culture. Earlier studies argue that the ability to predict safety behaviour are not justifiable due to cultural and language difference across countries and industries. Further, this framework will add-value into safety culture. This study contributes to support that no consensual decision was made by the earlier studies on safety culture. The SMEs play a pivotal role in the country growth of the gross domestic product and the backbone of the country's economy. Therefore, an increase of workplace accidents will affect the SMEs growth. This framework establishes as underlying factors for future researcher to investigate the influence of safety culture factor towards safety behaviour among employee in SMEs. This framework is beneficial for other SMEs in other countries that recorded a high number of workplace accidents.

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