

Demystifying the Empirical Link Between Safety Climate, Safety Communication, Work Environment, and Unsafe Behaviour at Work

(Menjelaskan Hubungan Empirikal antara Iklim Keselamatan, Komunikasi Keselamatan, Persekitaran Kerja, dan Gelagat Tidak Selamat di Tempat Kerja)

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ABSTRACT

The primary objective of this study is to examine the predicting roles of safety climate, safety communication, and work environment on unsafe behaviour. A survey was carried out among employees in manufacturing companies in Klang Valley. A total of 108 employees reported on safety climate, safety communication, work environment as well as their engagement in unsafe behaviour at work. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 17.0. The findings reported that safety climate and work environment had a significant impact on respondents' unsafe behaviour. Safety communication, on the other hand, had no bearing on unsafe behaviour among respondents in this study. Drawing on the findings, discussions elaborated on the importance of safety climate and work environment in curbing unsafe behaviour among employees. Theoretical and practical ramifications as well as directions for future research and conclusion of the study are put forward.

Keywords: Safety climate; safety communication; work environment; unsafe behaviour

ABSTRAK

Objektif utama kajian adalah untuk mengenal pasti peranan peramal bagi iklim keselamatan, komunikasi keselamatan, dan persekitaran kerja terhadap gelagat tidak selamat. Kaji selidik dijalankan dalam kalangan pekerja dalam syarikat pembuatan di Lembah Kelang. Sejumlah 108 pekerja melaporkan tentang iklim keselamatan, komunikasi keselamatan, serta persekitaran kerja serta gelagat tidak selamat di tempat kerja mereka. Data dianalisa menggunakan Pakej Statistik untuk Sosial Sains versi 17.0. Hasil kajian mendapati iklim keselamatan dan persekitaran kerja mempunyai impak yang signifikan terhadap gelagat tidak selamat para responden. Komunikasi keselamatan, walau bagaimanapun, tidak mempengaruhi gelagat tidak selamat responden dalam kajian ini. Berdasarkan dapatan ini, perbincangan menjelaskan tentang kepentingan iklim keselamatan dan persekitaran kerja dalam mengawal gelagat tidak selamat dalam kalangan pekerja. Implikasi teoretikal dan praktikal, haluan kajian akan datang serta kesimpulan kajian juga diketengahkan.

Kata kunci: iklim keselamatan; komunikasi keselamatan; persekitaran kerja; gelagat tidak selamat

INTRODUCTION

The advent of technology and dynamic forces in the economics and social contexts nowadays demand for a more strenuous working condition for employees, which has led to the increased number of accidents at the workplace. Industrial accidents claims registered by the Social Security Organisation (SOCSO) in Malaysia had catapulted by 19.4 per cent to RM1.71 billion compared to the preceding year (SOCSO 2011). According to the SOCSO Annual Report 2007-2011, manufacturing sector was reported to be the largest and most consistent contributor to workplace accidents in Malaysia (SOCSO 2011). In 2015, a total of 62,837 industrial accidents reported in the country (SOCSO 2015). Most importantly, the Department of Occupational Safety and Health (DOSH) has reported that until November 2014, the manufacturing sector has recorded the highest number of industrial accidents, which is more than 1400 cases reported, compared to other

industries such as mining and construction (Department of Occupational Safety and Health 2014). Unfortunately, according to DOSH, the number of accidents in this particular industry has catapulted to 2,087 cases in 2015, which has become the largest contributor to the number of accidents in the nation. Based on the statistics, it is evident that safety condition in manufacturing sector is far more dangerous and hazardous compared to other industries, and hence industrial accidents are more rampant in this sector.

According to Dekker (2002), Zohar (2002), and Zohar and Polachek (2014), unsafe behaviour is the antecedent to industrial accidents, which is partly attributed to the safety systems in organizations. The safety systems are related to various features of people, tools, tasks, and operating environment. On a macro perspective, safety climate is considered as employees' shared perceptions of the overall importance of the accorded safety and it is a derivative of the organizational climate concept.

Good safety climate organizations are characterized by a strong support and commitment to safety by employees as well as employers themselves. It is presumed that workers within positive safety climate are more likely to exhibit safe behaviour because they perceive that their efforts are deemed important by others and importantly, the management are highly committed and supportive in relation to safety aspects in the organizations. On the other hand, employees who are working in a situation in which the management are not putting high priorities on safety practices, may have different perceptions and attitude with regard to safety aspects. For instance, they would focus more on getting things done by putting stronger emphasis on work speed and ignoring safety aspects at work. This would inevitably result in unsafe behaviour (Zohar 2002). Unfortunately, unsafe behaviour would eventually increase employees' susceptibility to work related accidents or injuries, which may be due to lack of positive reinforcement, such as safety awareness from supervisors or co-workers, to encourage safe behaviour at work (Zohar 2002; Zohar & Polachek 2014).

In the organizational context, work environment is posited to have a profound impact on safety attitude and behaviour (Bjerkkan 2010). This aspect encompasses a safe and supportive work environment as well as equipment and materials needed by employees to facilitate their performance at work (Bjerkkan 2010; Idris, Dollard & Yulita 2014). In most instances, employees who are under pressure to increase production output may deviate from safety rules that impede their progress. They may also perform tasks with less care, increasing the likelihood of errors, which would ultimately result in workplace accidents (Clarke & Cooper 2004; Idris et al. 2014). Hence, in the presence of various constraints at work, short-term benefits of unsafe behaviour, for instance completing a job quickly and disregarding safety aspects at work, can be considered as the best alternative (Idris et al. 2014). This would result in more accidents to take place in work settings.

Another important factor associated with unsafe behaviour is safety communication. According to Stephens et al. (2009), communication is one of the crucial determinants of safe behaviour and organizational success at large. In keeping up with the dynamic changes in technology as well as internal and external forces, employers have to consistently revisit the effectiveness of communication that they practice with their employees (Stave, Pousette & Torner 2008). It is worthy to note that the scope for safety communication comprises a wide spectrum of job communication starting from entry levels to the board of directors and hence, different communication models should be adopted in different work situations (Hoffman & Morgeson 1999; Orlikoff & Totten 2009; Stephens et al. 2009; Zeitoun 2014). In essence, an effective form of communication with clear objectives would help to ensure safe behaviour is in place, and therefore, employees are less likely to engage in unsafe behaviour (Alsamadani et al. 2013; Bartram, Robertson

& Callinan 2002; Spencer & Spencer 1993; Stave 2008). In light of the importance of safety communication in promoting safety atmosphere in work settings, there is a need to examine the predicting role of this factor in relation to unsafe behaviour. Therefore, the primary aim of this study is to examine the influence of safety climate, safety communication, and work environment on unsafe behaviour among employees in the manufacturing context.

LITERATURE REVIEW

This section commences with the conceptual foundation of unsafe behaviour. This is followed by the conceptual background of safety climate, safety communication, and work environment. Finally, this section presents the hypotheses development in this study.

UNSAFE BEHAVIOUR

Unsafe behaviours are described as actions related to risk-taking, absent-mindedness, and carelessness, which include both intentional and unintentional acts. Safe behaviours, on the other hand, include wearing safety equipment, following safety rules, and having a positive attitude towards safety (Neal & Griffin 2004). Unsafe and safe behaviours can be understood to be either independent concepts or similar construct on the opposite ends of a continuum. If they are considered orthogonal, an individual could engage in both types of behaviour simultaneously. However, if they are considered on the same continuum, it is presumed that an individual who engages more in one of the behaviours would engage less in the other.

In accordance to Bradley (1997), the latter concept was adopted in this study because it is highly unlikely for a certain individual to exhibit safe and unsafe behaviours at the same time unless the environment imposes a strong safety structure, for instance enforcement of safety-equipment rules (Lund & Hovden 2003). According to Bradley (1997), unsafe behaviour increases an individual's chance of being involved in an accident-related event. McKenna (1983) added that the likelihood of accidents to happen is referred to the differential accident involvement. The presumed positive relationship between unsafe behaviour and differential accident involvement is based on the fact that certain actions, such as taking risks, disobeying rules, and being careless, would place an individual in a highly hazardous situation that eventually leads to an accident-related event (Hale & Glendon 1987; Hofmann & Stetzer 1996). It is also crucial to note that according to Neal and Griffin (2004) and Marchand et al. (1998), unsafe behaviour goes beyond bending safety rules and failure of using appropriate personal protective equipment. The aforementioned illustrations are better known as safety compliance, which form only one aspect of safe behaviour.

The broader concept of safe behaviour encompasses the aspects of safety participation and initiative. This refers to ‘activities that do not directly contribute to an individual’s personal safety, but which do help to develop an environment that supports safety’ (Neal & Griffin 2002). These include attending and volunteering to be members of safety committees, reporting hazardous situations, making suggestions in improving safety, and correcting colleagues who engage in unsafe acts. In this particular study however, the unsafe behaviour are assessed in terms of lack of the participation and initiative among employees in the safety related measures taken by their respective employers.

SAFETY CLIMATE

Schneider (1975) defined climate as a ‘summary of molar perceptions that employees share about their work environment.’ Based on a variety of cues present in their work environment, employees develop sets of perceptions and expectations regarding behaviour and outcome at work (Zohar 1980). In the context of safety climate, Zohar (1980, 2003) coined this construct as a set of perceived organizational priorities which influence behaviour. It encompasses a range of aspects, such as strong management commitment to safety, strong emphasis on safety training by the management team, open communication and frequent contacts between workers and management, environmental control and good housekeeping, and stable workforce with less turnover and aging workers.

Besides the safety climate definition by Zohar (1980), numerous definitions have been provided by various scholars. For example, Coyle, Sleeman and Adams (1995) conceptualized safety climate as an objective measurement of attitudes and perceptions towards health and safety issues. Safety climate is viewed as an individual attribute, which includes management’s commitment to safety and workers’ involvement in safety. Cox and Flin (1998) defined safety climate as a manifestation of safety culture in the behaviour and expressed attitude of employees. Cheyne, Oliver and Tomas (1998) asserted that safety climate is ‘a temporal state measure of culture, which is reflected in the shared perceptions of the organization at a discrete point in time.’ Indeed, safety climate can be regarded as the surface manifestation of culture derived from a sample of employees’ attitudes and perceptions at a particular point of time (Beus et al. 2010; Flin et al. 2000). Generally, the definitions of safety climate are apparently associated with safety culture because the shared aspects are emphasized in both definitions (Guldenmund 2000; McGonagle et al. 2014). The perception aspect is more associated with safety climate as it implies employees’ perceptions towards management and the work environment.

Despite the diverse safety climate definitions provided in the literature, Weigmann et al. (2002) provided a significant contribution by synthesizing the safety

climate definition based on the earlier literature. This definition is based on the commonalities that exist in the previous safety climate definitions. They defined safety climate as the temporal state measure of safety culture, subject to commonalities among individual perceptions of the organization. It is therefore situational based, which is referred to the perceived state of safety at a particular place at a particular time, which is relatively unstable and subject to change, depending on the features of the current environment or prevailing conditions.

In most studies, safety climate has been treated as a synonymous concept to safety culture. However, reviews by Neal and Griffin (2004) and Guldenmund (2000) suggested that these two constructs are distinct even though they are closely related. Safety climate refers to employees shared perceptions of the overall importance accorded safety and it is a derivative of the organizational climate concept. On the other hand, safety culture stems from the concept of organizational culture which has its root in anthropology. This concept concerns why an organization operates the way it does, which encompasses why certain behavioural safety norms may exist in the organization (Gardner et al. 2014; Guldenmund 2000; Patterson et al. 2005). In essence, safety culture is a broader concept that incorporates safety climate in addition to other constructs, such as attitudes and values. According to Clarke (2006), in most instances, safety climate scales assess safety attitudes or a mixture of attitudes and perception. In this study, safety climate is considered as a distinct construct, which is different from safety attitudes, risk perception, and safety behaviours. It refers to the situational factor, which is external to the worker (Zohar 2003). In this context, safety climate items measure what was normally done with regard to safety or how safety issues were generally treated in the workplace.

SAFETY COMMUNICATION

Safety communication refers to workers’ perception of the extent to which their supervisors and safety officers relay safety related information and how they would react to workers who complain about safety issues. This concept is similar to the communication dimension reported in previous studies (e.g. Glendon & Litherland 2001; Mearns et al. 1997; Varonen & Mattila 2000; Wills, Biggs & Watson 2005; Zeitoun 2014). Since this characterizes downward communication (i.e. from superiors to subordinates), it may also influence the extent to which workers will voice out their safety concerns or report near misses and injuries. Havold and Nettet (2008) defined safety communication as “the extent to which organization provided an effective information exchange regarding internal safety matters.” In other words, communication is the style, frequency, and methods of interaction between management and workforce of an organization about safety and risk at work. The role of communication has also been studied in relation to safety performance. Effective communication between managers and workers regarding health and

safety issues has been highlighted as an important factor in the success of safety interventions (Harper et al. 1997; Tan-Wilhelm et al. 2000).

In relation to occupational accidents, there is consistent evidence to propose a significant association between the quality of communication and safe behaviour as well as other outcomes (Alsamadani et al. 2013; Hofmann & Morgeson 1999; Mearns, Whitaker & Flin 2003; Stave et al. 2008; Varonen & Mattila 2000; Zeitoun 2014). On top of that, Clarke (2006) strongly contended that communication has an inverse impact on unsafe behaviour. This suggests that safety communication has a significant bearing on the occupational safety outcome at the workplace.

WORK ENVIRONMENT

Work environment is the key to understanding the safety outcomes at workplace among employees. According to Warr (2002), work environment is defined as “the establishment and other locations where one or more employees are working or are present as a condition of their employment.” The work environment includes not only physical locations, but also the equipment or materials used by the employee during the course of his or her work (Omar & Sindi 2015; Warr 2002). Warr (2002) also asserted that work environment as the situation where tasks are carried out in a sequence of actions and completed with the intention to achieve certain goals at work. Warr (2002) and Bjerkan (2010) further added that environmental pressures may sometimes posed problems for excellent performance, resulting in impaired quantity or quality of work output, which includes mistakes in decision-making. Under any normal circumstances, highly skilled employees are able to perform efficiently with respect to goals of the task if the work environment provided by employers is facilitating and conducive for them. Thus, it is important to take into consideration the environment in which employees operate as this is a significant factor that should not be underestimated in determining employees’ performance at work (Park et al. 2015).

From the literature, there is an empirical support for a direct association between work environment and accident involvement. For instance, Clarke (2006) strongly asserted that communication has a significant and inverse influence on unsafe behaviours among workers in the manufacturing industry. Further, it is also reported that safe and supportive work environment predicts greater employees’ engagement in safe behaviour and vice versa (Bjerkan 2010; Idris et al. 2014). Specifically, previous studies has established the significant linkage between environment in terms of work demand, role conflict, or role ambiguity as well as role-related stressor and the number of work accidents across various job contexts, such as construction workers (Goldenhar, Williams & Swanson 2003), transit operators (Greiner et al. 1998) and nurses (Hemingway & Smith 1999). These findings reaffirm that challenging work environment lead to more

frequent and severe occupational accidents. This shows that work environment has a profound impact on various safety outcomes in different work contexts.

HYPOTHESES DEVELOPMENT

SAFETY CLIMATE AND UNSAFE BEHAVIOUR

Organizations with positive safety climate are characterized by a strong support and commitment to safety (Zohar 2014). Safe behaviour are also valued and rewarded. Therefore, it is purported that workers within such settings will be motivated to exhibit safe behaviour (McGonagle et al. 2014; Reason 1997). Causal models of the relationship between safety climate and accidents have been tested in several empirical studies, demonstrating a significant pathway between safety climate and safe behaviour (Bjerkan 2010; Tomas, Melia & Oliver 1999).

In parallel fashion, Hofmann and Stetzer (1996) and Beus et al. (2010) found that safety climate was inversely associated with unsafe behaviour. Further studies have examined the linkage between unsafe behaviour and safety climate, including involvement in safety activities (Cheyne et al. 1998), safety compliance and safety participation (Neal, Griffin & Hart 2000), and organizational citizenship behaviour (Clark, Zickar & Jex 2014). These studies have provided empirical support for the substantial influence of the factors understudy. Drawing on the abovementioned empirical support, it is posited that:

H₁ Safety climate exerts a significant influence on unsafe behaviour.

WORK ENVIRONMENT AND UNSAFE BEHAVIOUR

Work environment was reported to have a direct effect on safety attitude as well as accident risk (Omar & Sindi 2015; Park et al. 2015). In most instances, employees will experience strenuous pressure due to the high demand from employers to achieve a certain stipulated target at work. However, if the equipment and facilities provided by employers are not in a good condition, employees are at a higher risk to be exposed in a dangerous work environment. This would ultimately increase the likelihood of errors and accidents to occur (Clarke & Cooper 2004; Park et al. 2015).

It was also reported that there is a significant link between demanding workplace and accident involvement among employees across different jobs, such as construction workers (Bjerkan 2010; Goldenhar et al. 2003), transit operators (Greiner et al. 1998) and nurses (Hemingway & Smith 1999; Park et al. 2015; Zheng et al. 2014). Additionally, Clarke (2006) provided empirical support on the significant impact of work environment on unsafe behaviour. These studies suggested that obstructive work environment would lead to increased number of accidents as well higher level of accidents severity. Based on the abovementioned findings, this study hypothesizes that:

H₂ Work environment exerts a significant influence on unsafe behaviour.

SAFETY COMMUNICATION AND UNSAFE BEHAVIOUR

In relation to occupational accidents, there are consistent findings reported on the significant association between quality of communication and accident rate at work (Alsamadani et al. 2013; Hofmann & Morgeson 1999; Mearns et al. 2003; Stave et al. 2008; Varonen & Mattila, 2000; Zeitoun 2014). Parker, Axtell, and Turner (2001) conducted a longitudinal study among 161 manufacturing employees' on self-reported safe working practices and safe behaviour. The study found that communication quality, which is one of the aspects in safe working practices, had a significant and positive relationship with safe working behaviour. In similar fashion, Clarke (2006) asserted that communication is inversely related to unsafe behaviours among employees in the manufacturing industry.

Zohar (2002) asserted that supervisors who adopted open and informal safety communication reported lower accident rates compared to those who do not practice the aforesaid type of communication. This suggests that poor safety communication is a significant determinant of unsafe behaviour. As such, this study proposes that:

H₃ Safety communication exerts a significant influence on unsafe behaviour.

UNDERLYING THEORY AND RESEARCH FRAMEWORK

Social Exchange Theory (SET) is a theoretical underlying, which has been used widely in understanding and explaining the employment relationships that exist within organizations (Cropanzano & Mitchell 2005). The theory posits that people evaluate the costs and benefits of a certain social relationship. Importantly, Hofmann and Morgeson (1999) suggested that SET is appropriate to be adopted in studies on safety, especially in explaining safety perceptions, attitude, and behaviour among employees through social exchange process that arises between employees and their organization or employer. Drawing on this, SET that lies within the concept of reciprocity, is deemed as the most suitable theory to serve as the underlying paradigm in this study. In essence, it is posited that employees who are provided with good safety climate, safe work environment, and quality communication are will be less likely to engage in unsafe behaviours at work.

In addition to the underlying theory, the research framework in this study is drawn upon the empirical results documented in the literature. Specifically, the research framework merges the independent variables, encompassing safety climate, work environment, and safety communication, with the dependent variable, which is unsafe behaviour. It is therefore theorized that safety climate, safety communication, and work environment have a significant impact on unsafe behaviour. Figure 1 depicts the research framework of this study.

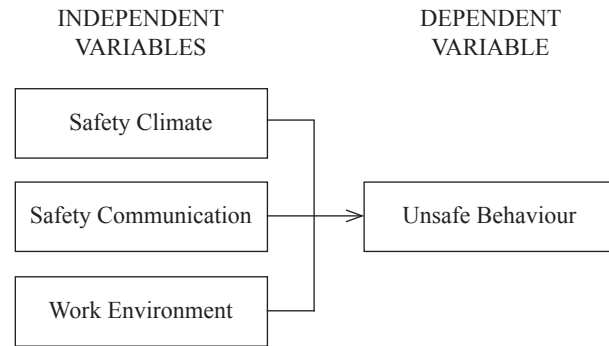


FIGURE 1. Research framework

METHODOLOGY

RESEARCH DESIGN AND SAMPLING

This study used a quantitative approach to measure the relationship between safety climate, safety communication, work environment, and unsafe behaviour. This study focused on the manufacturing sector in Malaysia, given the fact that this sector is second main contributors to the nation's gross domestic product (GDP). Specifically, the manufacturing sector accounted for RM48.4 billion to the country's GDP in the first quarter of 2014 (MITI Weekly Bulletin 2014). Furthermore, as noted earlier, the latest report by Department of Occupational Safety and Health (2014) showed that the manufacturing industry in the country has recorded the biggest number of industrial accidents. In light of this scenario, more studies need to be conducted on safety-related issue in this particular industry to further understand antecedents and outcomes related to it. This is crucial in order to develop appropriate corrective measures to be taken by employers and other relevant parties in minimizing industrial accidents in the industry. As such, this paper aims to examine the predicting role of safety climate, work environment, and safety communication on unsafe behaviour among manufacturing employees.

A total of 500 set of questionnaires were distributed to manufacturing firms in Klang Valley. Out of 500 questionnaires distributed, only 108 questionnaires, which constitute of 21.6 per cent response rate, were returned and usable for further analysis.

INSTRUMENTATION AND SAMPLE ITEMS

A total of 41 items with five-point Likert scale of 1-strongly disagree to 5-strongly agree were used to measure all variables in the study. Specifically, safety climate was measured using 15 items from Offshore Safety Questionnaire (OSQ). Sample items are "The written safety rules and instructions are too complicated for people to follow," "If I didn't take a risk now and again, the job wouldn't get done," and "The standard of safety is very high at my place of work."

The safety communication was gauged by seven items by Rundmo (1990). Sample items are "I am satisfied

with the way I am kept informed about what takes place on this plant,” “There is good communication between maintenance and operating staffs,” and “My supervisor gives me clear instructions.”

The work environment scale includes 10 items from the previously validated work environment scale by Moos and Insel (1974). Sample items are “There is constant pressure to keep working” and “The details of assigned jobs are generally explained to employees.” The unsafe behaviour scale comprises of nine items, originally taken from scales developed by Rundmo (1994) and subsequently validated by Mearns et al. (2001). Sample items are “I ignore safety regulations to get the job done,” “I carry out activities which are forbidden,” and “I break work procedures.”

DATA ANALYSIS TECHNIQUE

Statistical Package for Social Science (SPSS) Software version 17.0 was used for data analysis. A reliability test was done by observing the Cronbach’s Alpha value with the cut-off point of 0.60. A regression analysis was conducted to examine the influence of safety climate, work environment, and safety communication on unsafe behaviour among employees in the manufacturing companies.

FINDINGS

PROFILE OF RESPONDENTS

Based on the demographic profiles, the vast majority of respondents or 89.9 percent were male while their female counterparts constituted of only 10.1 percent. Almost one third or 33.3 percent of the respondents were in the age group of 30 to 34 years old while 39.8 percent of them were in the age group of 35 to 39 years old.

The majority of respondents or 43 percent were below 30 years old. Most respondents or 70.1 percent were secondary school certificate or SPM holders and 50.3 percent of them had worked in their respective companies for one to five years.

RELIABILITY ANALYSIS

Cronbach’s coefficient alphas were computed for each dimension to determine the internal consistency reliability

of the instruments used in the study. According to Nunnally and Bernstein (1994), the value of 0.60 is considered as the lower limit of acceptability for Cronbach’s alpha. As depicted in Table 1, all variables in this study had the alpha values of 0.742 to 0.938, which were all above 0.60, which is the acceptable cut off point.

TABLE 1. Reliability result for dependent and independent variables

Variables	Items	Cronbach’s Alpha
Safety climate	15	0.746
Safety communication	7	0.938
Work environment	10	0.738
Unsafe behaviour	9	0.742

DESCRIPTIVE AND REGRESSION ANALYSES

The summary of the descriptive statistics of mean and standard deviation values are depicted in Table 2. All variables were measured on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The mean values for safety climate, work environment, and safety communication were 3.77, 2.65, and 3.91, respectively. The mean value for dependent variable (i.e. unsafe behaviour) was 1.42.

TABLE 2. Overall descriptive statistics of the variables

Variables	Mean	SD
Safety climate	3.77	0.58
Safety communication	3.91	0.98
Work environment	2.65	0.28
Unsafe behaviour	1.42	0.30

As depicted in Table 3, of three factors examined in this study, only safety climate ($\beta = -0.169$, $p < 0.001$) and work environment ($\beta = -0.868$, $p < 0.001$) were found to be significant in predicting unsafe behaviour. Therefore, only H_1 and H_2 are accepted.

The regression results revealed the R-Square value of 0.352. This indicates that safety climate and safety communication collectively explained 35.2 percent of the variance in unsafe behaviour among employees in this study.

TABLE 3. Regression results on safety climate, safety communication, work environment, and unsafe behaviour

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	β		
(Constant)	.277	.080		3.454	.001
Safety climate	-.089	.013	-.169*	-6.591	.000
Work environment	-.948	.030	-.868*	-31.896	.000
Safety communication	.003	.007	.009	.416	.678

$R^2 = 0.352$, $F = 832.7$, $p < 0.01$

DISCUSSIONS

To recapitulate, this study investigated the influence of safety climate, work environment, and safety communication on employees' unsafe behaviour in manufacturing firms located in Klang Valley. The results showed that safety climate and work environment had a significant influence on employees' unsafe behaviour. Nevertheless, safety communication had no impact on employees' unsafe behaviour in the organizations under study.

This study reported a substantial empirical link between safety climate and unsafe behaviour among employees. Specifically, safety climate was negatively related to employees' unsafe behaviour. The finding is consistent to the results reported by Reason (1997), Beus et al. (2010), and McGonagle et al. (2014), whereby work settings that adopt positive safety climate are more likely to promote safe behaviour. This result reaffirms the inverse empirical linkage between safety climate and unsafe behaviour among respondents in this study. This suggests that if employers are highly committed about safety practices in the organizations and very supportive in ensuring safety aspects are in place, employees are less likely to engage in unsafe behaviour.

Safety communication was found to have a non-significant impact on employees' unsafe behaviour. Even though Parker, Axtell and Turner (2001), Hofmann and Morgeson (1999), and Mearns et al. (2003) reported that safety communication is a significant determinant of safety behaviour, these preceding findings did not hold true in this particular study. It is worthy to note that the mean value for safety communication was relatively high (i.e. 3.91), which indicates that respondents in this study were experiencing good safety communication practice at their workplace. Nevertheless, interestingly this factor had no bearing on their unsafe behaviour. One plausible explanation for this is because most of the employees had been in their present employment within one to five years. Hence, they are perhaps well-adjusted to the safety practices in their respective organizations.

Work environment was reported to have a significant impact on employees' unsafe behaviour. This is congruent to the findings by Varonen and Mattila (2000), Clarke and Cooper (2004), Park et al. (2015) and Omar and Sindi (2015) that work environment has a substantial impact employees' safety behaviour at work. One plausible explanation to this is that unpleasant work environment due to stressful jobs, irregularities of scheduling, and work overload would bring about detrimental effect to employees in various ways. In terms of safety aspect, the aforesaid circumstances would affect employees' concentration in carrying out their tasks and place them in a high risk situation. In order to get their tasks done, they would engage in unsafe behaviour, for example working as fast as possible at the expense of their own safety and disregarding the safety rules. On the other hand, if employees are not experiencing any forms of constraints

in performing their tasks, they could work in a more conducive and facilitating environment, and hence, they would least likely to engage in unsafe behaviour.

IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSION

Taken together, the findings of this research have reported partial support for the key theoretical propositions. The results of the study have provided theoretical and practical implications in the domain of occupational safety and health management. Specifically, this study has provided additional empirical evidence to the body of knowledge with regard to the linkage between safety climate, work environment, safety communication, and unsafe behaviour. As for practical ramification, the research results validated the notion that safety climate and work environment are of utmost importance in preventing unsafe behaviour among employees. Practically put, in reviewing the existing policies and procedures with regard to occupational safety and health, the aforesaid factors deserve a higher level of scrutiny in any manufacturing organizations. This is attributed to the fact that employees would be less likely to engage in unsafe behaviour if employers provide facilitating work environment and supportive safety climate for them to perform at their best.

This study has highlighted several directions for further research endeavours. Future research should replicate the framework of this study in other settings, such as construction and mining and quarrying industries because these sectors are also considered as high-risked industries. Importantly, studies on safety issues in these industries would perhaps yield interesting perspective and understanding with regard to unsafe behaviour across different sectors. A comparative study between industries, such as manufacturing, agriculture, construction as well as mining and quarrying would be very useful in further understanding factors related to unsafe behaviours in different nature of work. Besides that, future studies should consider adopting other approaches, for instance qualitative research design, in analysing issues on the reasons why employees are engaging in unsafe behaviour.

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