THE RELATIONSHIP BETWEEN SAFETY MANAGEMENT PRACTICES AND SAFETY BEHAVIOURS AMONG EMPLOYEES OF INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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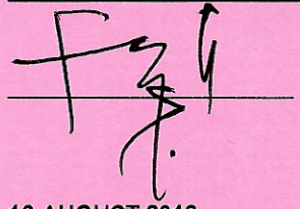

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ABSTRACT

Occupational safety is an issue of considerable importance in any organization. The management needs to ensure that the work environment is safe for the employees. However, occupational safety is not only the responsibility of the management but the whole organization including the employees. Literature on occupational safety shows that employees' safety behaviour has direct or indirect link to safety at the workplace. Unsafe behaviours of employees can contribute to workplace accidents. For a better understanding of occupational safety in an academic setting, this study surveyed 329 employees of International Islamic University Malaysia to find out the level of safety management practices, the level of safety behaviours of the employees and whether or not there is a relationship between safety management practices and safety behaviours. The questionnaire used for this study was adapted from a number of previous studies. The study found that the university's employees perceived safety management practices and their safety behaviours at a satisfactory level. Correlation analyses show that there is a positive relationship between safety management practices and safety behaviours. These findings point to the importance of providing reliable safety management practices in instilling good safety behaviours. These findings indicate that reliable safety management practices are important in improving a safe working culture among the employees.

Keywords: safety management practices, safety behaviours, safety compliance, safety participation and safety culture

ABSTRAK

Keselamatan di tempat kerja adalah sangat penting bagi mana mana organisasi. Pihak pengurusan perlu memastikan bahawa persekitaran di tempat kerja adalah selamat. Walaubagaimana pun, keselamatan pekerjaan bukan sahaja menjadi tanggungjawab pihak pengurusan malah menjadi tanggung jawab keseluruhan organisasi tersebut termasuklah kakitangannya juga. Literatur dalam bidang keselamatan pekerjaan menunjukan bahawa gelagat pekerja mempunyai hubung kait secara langsung atau tidak langsung dengan keselamatan di tempat kerja. Gelagat pekerja yang tidak selamat boleh menyebabkan kemalangan di tempat kerja. Untuk memahami isu keselamatan di tempat kerja dalam persekitaran akademik dengan lebih mendalam, kajian yang melibatkan 329 pekerja di Universiti Islam Antarabangsa Malaysia telah dijalankan untuk mengetahui tahap amalan pengurusan keselamatan, tahap gelagat keselamatan pekerja dan sama ada terdapat hubungan antara amalan pengurusan keselamatan dan gelagat keselamatan pekerja. Soal selidik yang digunakan dalam kajian ini diadaptasi daripada beberapa kajian sebelum ini. Kajian ini mendapati bahawa persepsi pekerja pekerja universiti terhadap amalan pengurusan keselamatan dan gelagat keselamatan mereka di tahap yang memuaskan. Analisis korelasi menunjukkan terdapat hubungan yang positif antara amalan pengurusan keselamatan dan gelagat keselamatan pekerja. Penemuan ini menunjukkan bahawa amalan pengurusan keselamatan yang baik adalah penting untuk meningkatkan budaya kerja yang selamat di kalangan pekerja.

Kata kunci: amalan pengurusan keselamatan, gelagat keselamatan, pematuhan keselamatan, penyertaan keselamatan dan budaya keselamatan,

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INTRODUCTION

1.1 INTRODUCTION

Safety at work is a major concern for all employees regardless of the type of work they are doing. It is also the right of all employees to be provided with a safe and healthy working environment. The same applies to educational institutions. The main objectives of educational institutions like colleges and universities are to provide academic experience to their students and strive for academic excellence. In doing so, the institutions should also pay attention to safety as 'problems in the areas of occupational safety may undermine such goals' (Wu.et.al, 2007). As pointed out by Fernández-Muñiz et al. (2008), occupational accidents or injuries have adverse effects on an organization in terms of productivity, profitability and competitiveness.

One of the practices that can be employed by the management to secure safety at the work place is the adoption of occupational health and safety (OHS) based management system. Occupational safety and health management provides the legislative framework to ensure the safety, health and welfare among all workforces and to protect others against risks to safety or health in connection with the activities of persons at work (Dessler, 2016).

Internationally, there are many standards and guidelines available for organizations to refer to such as ILO-OSH (2001) and BS 8800 (2004) for developing and implementing Occupational Health Safety Management System (Muhammad Ghulam Subhani, 2010). In Malaysia, the Occupational Safety and Health Act (OSHA) was enacted in 1994 to provide provisions 'for securing the

safety, health, and welfare of persons at work, for protecting others against risks to safety or health in connection with the activities of persons at work, to establish the National Council for Occupational Safety and Health, and for matters connected herewith' (Occupational Safety and Health Act 1994, 2016, p7). The Department of Occupational Safety and Health (DOSH), which is under the Ministry of Human Resource, governs the administration and enforcement of policies and legislations related to OSHA 1994 as well as earlier acts: the Factories and Machinery Act (FMA) 1967 and part of Petroleum Act 1984 (Department of Occupational Safety and Health official website). Employers are expected to adhere to these acts and for further guidance, are encouraged to consult relevant bodies like the National Institute of Occupational Safety and Health (NIOSH) and sources like the OSH management system MS 1722, the Malaysian Standards in OSH (Alwi Saad, 2011). Universities, like any other organizations in Malaysia, are subscribed to the same policies and legislations of the relevant acts.

Another agency related to occupational safety and health in Malaysia is the Social Security Organisation known as PERKESO. It 'was formed under the Employees' Social Security Act 1969 as a government department of the Ministry of Labour and Manpower on I January 1971' (https://www.perkeso.gov.my). Its mission is to provide social security protection to Insured Person and their dependants through its two social security schemes: the Employment Injury Scheme and the Invalidity Scheme. Its other mission is to raise awareness of occupational safety and health which will ultimately improve the social wellbeing of the Insured Persons. Employees 'who are employed under a contract of service or apprenticeship in the private sector and contractual / temporary staff of Federal / State Government as well as Federal / State Statutory Bodies' (https://www.perkeso.gov.my) are

obliged to be registered and insured under PERKESO. This includes employees of all private universities and universities not established under the government's Act.

1.2 BACKGROUND OF THE STUDY

In universities, safety and health administration is one of the important roles of the human resource management department. Prevention of injuries or ill health can bring many benefits to an organization including its productivity (De Greef and Van den Broek, 2004; Lamm, Massey and Perry, 2006). Occupational accidents are associated with higher financial costs and loss of productivity (Beus, McCord, & Zohar, 2016). As stated earlier, occupational safety and health (OSH) management system can greatly help in maintaining and ensuring a safe work environment. However, having the system in place may not be sufficient to guarantee safety at an organization. It has to be effectively implemented. Promoting and implementing a good OSH programme, however, is a challenge and problems can be encountered at every stage of the programme (Koh, 1995). Not only that, enforcement of and compliance to OSHA 1994 require cooperation and coordination from the organization (Alwi Saad, 2011). This means that safety is not only the responsibility of the management but the whole organization which includes the employees. Safety behaviour of employees has been found to predict safety outcome (Panuwatwanich, Al-Haadir, & Stewart, 2017). Unsafe behaviours of employees can also increase the risk of workplace accidents (Mohammadfam, Ghasemi, Kalatpour, & Moghimbeigi, 2017). Workplace injuries and accidents can be detrimental to an organization.

Universities, like other organisations, face similar problems of safety occupational safety behaviours. Many unwarranted incidents have been reported to take place at universities throughout the world. In National Taiwan University of Technology, a graduate student lost her eyes as a result of an accident while conducting a chemical experiment (Lin, 2004). A chemistry laboratory fire in UCLA in 2008 caused the death of a researcher (Gibson et.al. 2014). These incidents raise questions on the adequacy of safety measures that have been provided for academicians, technicians and students in universities and the employees' level of safety behaviours. The extent to which educational institutions communicate, enforce or prioritize safety measures and the employees' safety awareness and behaviours is still questionable. To address some of these issues, the present study undertakes to examine safety management practices and employees' safety behaviours at the International Islamic University Malaysia to gauge the level of safety management practices and safety behaviours at the university and the relationship between the two. Findings from this study can highlight the safety areas that need to be addressed to maintain or improve safety at the university.

1.3 RESEARCH CONTEXT

The university has three campuses. It has 14 faculties and a few other centres and service departments catering for more than 23,000 students, both local and foreign. The academic programmes offered are Medicine, Nursing, Science, Pharmacy, Dentistry, Engineering, Allied Health Sciences, Laws, Education, Architecture and Environmental Design, Information and Communication Technology, Economics and Management Science, Islamic Revealed Knowledge and Human Sciences and Language and Management. At the time of the study, eight of the faculties were

located at the main campus in Selangor. There are about 3500 employees. 60% of them are academic while another 40% are administrative staff. As an academic institution, the university also has a significant number of employees and students who deal with equipment and laboratories almost on a daily basis for which good safety conduct and practices, and behaviour are of paramount importance. The university has a department called Occupational Safety, Health and Built Environment (OSHBE) responsible for the occupational health and safety environment of the campus under the purview of the Office of the Executive Director (Development and Planning). Its services include inspection and checking on all aspects of safety at workplace, organising trainings on occupational safety and health and managing environmental issues. As stated on the department's website (http://www.iium.edu.my/division/oshbe), it strives to achieve excellence in instilling awareness among its employees and the public dealing with the university on the importance of safety and health.

1.4 STATEMENT OF THE PROBLEM

Issues related to occupational safety and health in academic settings should be investigated for a number or reasons. Firstly, incidents in academic settings are often not recorded in a way that would allow a clear understanding of the risks of such incidents. For example, the US 'Bureau of Labor Statistics groups chemical injuries together in its annual report of workplace injuries, illnesses and fatalities (Langerman, 2009). Similarly, in Malaysia, the occupational accidents statistics provided by the Department Occupational Safety and Health (DOSH) does not assign a specific category for accidents and incidents in the educational sector (www.dosh.gov.my) while the PERKESO (Social Security Organization)'s annual

reports (https://www.perkeso.gov.my) for 2015 (p. 334) and 2016 (p 402) group accidents related to all education services under one category. The lack of specific statistics on accidents at universities makes it difficult to estimate the risks of such incidents and as a result, for university employees to realize or become aware of these risks and pay attention to safety on campus.

Secondly, incidents do happen on campus some of which are not known by the general population of the university. The statistics provided by OSHBE department of the International Islamic University from 2013-2017 indicates that there are accidents and near misses that occurred on campus for that period of time as shown by Figure 1.1 below:

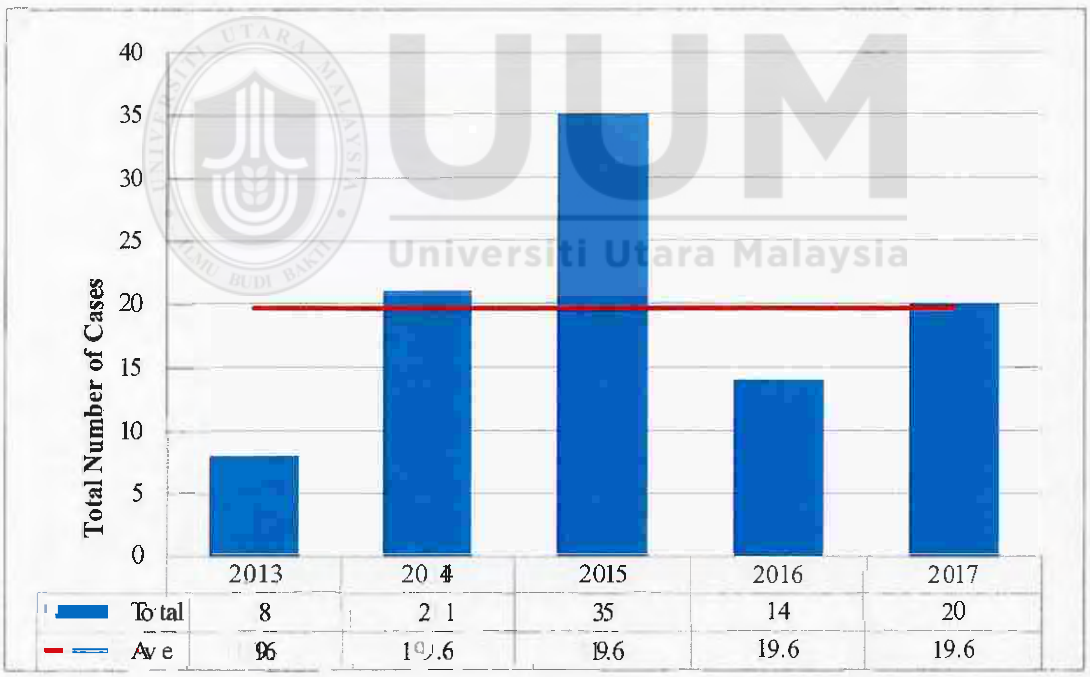
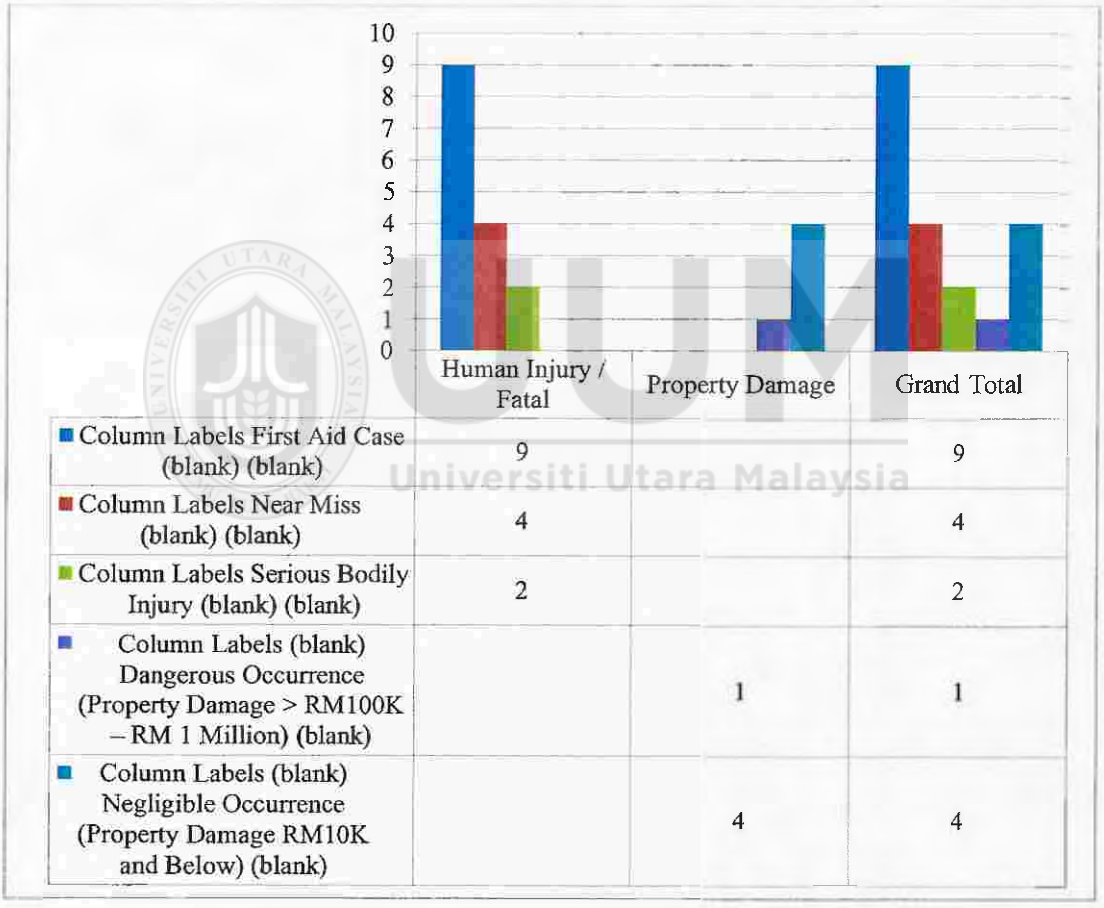


Figure 1.I
Number of accidents and near misses in 2013-2017

Figure 1.I shows that the number of accidents and near misses reported fluctuates by year with an average of 19.6 cases per year. There were 8 cases in 2013, 21 cases in 2014, 35 cases in 2015, 14 cases in 2016 and 20 cases as of

September 2017. 2015 had the highest number of accidents and near misses and this drops in 2016 to 14 cases. In 2017, there is again an increase in cases. The fluctuation of cases shows that safety issues on IIUM campus have not been successfully addressed.

Thirdly, accidents of any type, no matter how small it is, can have negative implications on the employees and the university. Figure 1.2 below shows the breakdown of types of accidents from January till September 2017 at IIUM:



	Human Injury / Fatal	Property Damage	Grand Total
Column Labels First Aid Case (blank) (blank)	9		9
Column Labels Near Miss (blank) (blank)	4		4
Column Labels Serious Bodily Injury (blank) (blank)	2		2
Column Labels (blank) Dangerous Occurrence (Property Damage > RM100K – RM 1 Million) (blank)		1	1
Column Labels (blank) Negligible Occurrence (Property Damage RM10K and Below) (blank)		4	4

Figure 1.2
Accident Types January- September. 2017 (IIUM)

As displayed by figure 1.2, from January to September 2017, the report on occupational safety, health and the environment reports 9 first aid cases, 4 near miss cases, 2 serious bodily injuries, 1 dangerous property damage involving between

RM100k- RM 1million and 4 cases of negligible property damages. Among the reported cases involve a technician who tripped while walking to the store on campus, a lecturer who had her palm stuck in a hinge while trying to help a student fixed an unstable table during an examination and an unknown liquid which was found flowing through a floor crack in the garbage store by two employees. This shows that though relatively small in number, some of the cases are serious ones. More importantly, any of these incidents can lead to more serious consequences and in some cases may affect more than one employee. Incidents or damages like the ones reported above can affect the health and well- being of the employees as well as incur high financial cost and losses to both the employees and the university. A study examining its employees' perceptions of safety is one way of assessing safety and raising the employees' awareness of safety at the university. A quantitative research using a questionnaire studying specific dimensions of safety management practices and safety behaviours at IIUM will be able to show areas of weaknesses that should be improved to reduce accident rates and improve general safety on IIUM campus.

1.5 RESEARCH QUESTIONS

1. What is the level of safety management practices at the International Islamic University Malaysia?
2. What is the level of safety behaviour at the International Islamic University Malaysia?
3. Is there any relationship between safety management practices and safety behaviour of employees at the International Islamic University Malaysia?

1.6 RESEARCH OBJECTIVES

The study aims to

1. examine the level of safety management practices at the International Islamic University Malaysia as perceived by the academic and administrative employees.
2. examine the level of safety behaviour at the International Islamic University Malaysia as reported by the academic and administrative employees.
3. assess if there is a relationship between safety management practices and safety behaviour of employees at the International Islamic University Malaysia.

1.7 SIGNIFICANCE OF STUDY

Findings from the study can create awareness of the level of safety behaviours and safety management practices in the institution. With heightened awareness of safety, positive safety behaviours can be reinforced and negative ones discouraged to eliminate or minimise the risk of future mishaps. The findings can be also useful to the management as the findings of this study can provide insights into measures to be taken and guidelines to be prepared and provided for the employees in improving safety at the institution. Collective efforts from all parties including the management, academicians, administrators and technicians are important in developing a safe working environment. In addition, this study can be a source of reference for scholars especially those interested in safety in universities since there have not been many investigations on safety in such settings.

1.8 ORGANIZATION OF THESIS

This thesis comprises five chapters. Chapter one presents an overview of the study. Chapter two defines the relevant terms and reviews the literature in the field of safety management practices and safety behaviour. Chapter three describes the methodology used in this study. Chapter four presents the results and findings of this study. Chapter five discusses the findings and concludes the thesis by summarising the content of the thesis, stating its limitations and providing recommendations for future research.

CHAPTER2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter is divided into three major parts. The first part describes two terms that are relevant to this topic and closely associated with safety management practices and safety behaviours: safety culture and safety climate. The second part reviews safety management practices and safety behaviours. The third part reviews studies on safety management practices and safety behaviours as variables. The chapter concludes with a summary of the literature review.

2.2 SAFETY CULTURE AND SAFETY CLIMATE

Although safety culture and safety climate are often used interchangeably (Bahn and Barratt-Pugh, 2014) and the dimensions covered in studies on safety culture and safety climate may overlap, the two terms are distinguished in the literature (Huang et.al, 2013). From their various use in the literature, Yule (2003) concludes that safety culture is characterised by shared values, beliefs, and attitudes held by the employees towards their work and organization and are subjected to theoretical discussion. Meanwhile, safety climate is characterised by the employees' current perceptions of the working environment, working practices, organizational policies and management that are empirically measured. Safety culture encompasses fundamental values, norms, assumptions, and expectations whereas safety climate is regarded as a reflection or a measurable aspect of safety culture (Olsen, 2009). While a clear consensus on the dimensions to be considered for each concept has yet

to be reached, there are good predictors of safety related outcomes that are widely accepted by scholars. Among these, safety management practices have been noted to be a common indicator of safety climate in an organization (Vinod and Bhasi, 2010)

Studies on safety management practices are usually conducted in relation to either safety behaviour or injuries as improved safety management practices should lead to improved safety behaviours or lesser injuries. As this study examines safety management practices and safety behaviours, the following section describes safety management practices and safety behaviours.

2.3 SAFETY MANAGEMENT PRACTICES

Safety management can be defined as ``the management process to achieve a state of freedom from unacceptable risks of harm" (Cox and Tait, 1991; p. 244). Safety management is practised by implementing the organisation's safety management system consisting of its rules, procedures, policies, training and so on "which acts as a system of control over work activities and working methods" (Kennedy and Kirwan, 1998).

In a study on U.S trucking firms, Arboleda et.al (2003) observed that three of four management practices they examined namely safety training, opportunity for safety input and top management commitment, contribute to strong safety culture perceptions and thus will potentially lead to fewer accidents.

Mearns et.al (2003) assert that an examination of safety management practices is essential in determining the safety climate within an organization. Their study on the safety climate, safety management practices and safety performance of offshore oil and gas installations in the UK found that in general safety management

practices was associated with lower rates of accidents experienced or reported by employees.

Hassan Ali et.al (2009) investigated the effectiveness of management practices in reducing workplace injuries by surveying the employees on management practices and studying the injury data at companies in a major industrial zone in Malaysia. The results showed that three management practices: rewards, management commitment, feedback and selection decreased injury rates while feedback and employee participation significantly predicted the injury rates. The paper concluded that good management practices can reduce injury rates.

Vrendeburgh (2002) examined the contribution of six management practices: management commitment, rewards, communication and feedback, selection, training, and participation to workplace safety for hospital employees in the United States. Management practices were found to be a reliable predictor of injury rates.

The studies mentioned above show that safety management practices contribute to safety performance and comprise a variety of dimensions. The present study examines more closely six of these dimensions namely management commitment, safety training, workers' involvement, safety communication and feedback, safety rules and procedures and safety promotion policies. Each of these dimensions is elaborated below:

2.3.1 Management Commitment

Review of the literature shows that a strong management commitment to safety is important for the success of safety programmes in industrial organisations (Zohar, 1980). Other more recent studies have shown similar evidence.

Based on major studies on safety culture, Fernández-Muñiz et.al (2007) formulated a safety culture model with three key indicators namely the managers' commitment, employees' involvement and safety management system. The model was tested on employees working in a wide array of Spanish companies. As shown by the coefficients indicated in the model, managers' commitment has a statistically significant, direct and positive relationship with employees' involvement and safety management. Employees' involvement and safety management system each had a similar relationship with safety performance. The findings showed the importance of managers' commitment in promoting employees' safe behaviour and involvement in safety activities and indirectly in supporting the safety management system of an organisation.

In addition to examining the link between job strain and job resources to safety violations, Hansez and Chmiel (2010) tested a job demands-resources model that integrates employee perceptions of their management's commitment to safety at a large energy company in Belgium. A significant correlation was found between perceived management commitment and job-related factors to safety. Perceived management commitment to safety added to the explanatory power of the job demands-resources model.

From these studies, it can be deduced that commitment of the management is necessary for improving the safety level in organisations.

2.3.2 Safety Training

Bahn and Barrat-Pugh (2014) examined the impact of mandatory Construction Induction Training Initiative on work-related injuries in the construction industry in Western Australia. The statistics showed a downward trend in injury rates indicating

that safety practices were used in the industry. In addition, most of the managers surveyed reported that the training had improved safety on their work and the employees interviewed were generally pleased with the training. Though the training might not be the sole contributor to the decrease in work-related injuries in the industry, the researchers believe that the training has a positive effect on the safety culture of the industry.

Hare and Cameron, (201 I) who investigated the relationship between the training level received by site managers and the accident incidence rates in construction firms in the UK found that higher level of training, as measured by the durations of training, is associated with lower accident rates or better safety performance.

Ricci et.al (2016) conducted a meta-analysis of studies published between 2007-2014 from ten databases to find out whether or not occupational health and safety training has any benefit on a number of factors including workers' behaviour. It was found that the studies showed a moderate benefit of training on workers' behaviour.

The studies reviewed above show that there has been some evidence to suggest that safety training can reduce work related injuries through safety behaviours or practices.

2.3.3 Workers' Involvement

Ariss (2003) reported the implementation of the Employee Involvement Model at an automotive bumper finishing and repair plant in America. Safety level at the plant deteriorated to the extent that it was almost uninsurable. The intervention successfully lowered incident/injury occurrences and safety violations in the plant

which resulted in among other things accountability from employees and management. Employees' involvement was considered a solution to the safety issue.

Dedobbeleer and Beland (1991) tested Browm and Holmes' (1986) three-factor safety climate model. Results from their survey involving workers in nine nonresidential construction sites in Baltimore, USA, however, provided only some support for the model. A model emphasizing two factors, that is, management and workers' involvement in safety gave a better fit. Their results suggest the need to address workers' involvement as well as management commitment in developing safety policies.

Studies on worker's involvement seem to show that it is an important aspect of safety that should be considered by the management.

2.3.4 Safety Communication and Feedback

Vendrenburgh (2002) assert that consistent and direct communication is a necessary attribute of any strong organization and to encourage safety practices, feedback needs to be given to the employees who can use it at the time when their actions can effectively improve safety outcomes.

Micheal et.al (2006) studied the influence of leader-member exchange (LMX) and safety communication on safety outcomes at manufacturing facilities in Pennsylvania, USA. Leader-member exchange relationship was found to be a greater predictor of safety-related events than safety communication alone indicating the importance of effective communication between a leader-member in enhancing workplace safety. It was proposed that safety-related communication may still influence safety outcomes, through its interactions with other variables such as management commitment.

Thomson et.al (2011) compared the perceptions of safety climate by nursing staff from various types of patient care units with different ratings of leader-member exchange (LMX) at a large academic medical center. The study also examined the leadership behaviours that might explain the difference in perceptions. The study found that higher ratings of LMX were associated with positive staff perceptions of safety behaviours. The finding was supported with regard to supervisors' expectations and actions on safety, organizational learning-continuous improvement, communication openness, feedback and communication about error, and nonpunitive response to error.

Findings from these studies suggest that positive leader-member relationships can influence safety outcomes.

2.3.5 Safety Rules and Procedures

In a study on contract workers within the Norwegian petroleum industry, Dahl (2013) examined the most significant factors that affect adherence to rules and procedures, or as commonly referred to as safety compliance. The findings suggest that to improve safety compliance, workers should be made aware of the risks that these rules and procedures are supposed to minimise and the level of understanding that is expected of the workers in relation to rules and procedures

Katz-Navon et.al (2005) employed a multidimensional approach in studying safety climate in three general hospitals in Israel. The results showed that the relationship between perceived safety procedures and safety performance is curvilinear indicating that increased safety procedures do not necessarily lead to better safety performance, in this context, treatment errors. The employees' perceptions of priority given to safety were found to moderate the relationship

between safety procednres and treatment errors, as well the linear relationship between managerial safety practices and treatment errors in a hospital nnit. Thus, it is not sufficient for organizations to impose more safety requirements which then resulted in more formal procedures in order to improve safety performance without assigning priority to safety.

The studies show that safety rules and procedures can have an impact on safety directly or through the interactions with other variables.

2.3.6 Safety Promotion Policies

Dejoy et.al (2004) conducted a study on retail stores in the US to find out the determinants of safety climate with a specific focus on environmental conditions, safety policies and programs, and organizational climate and the extent to which safety climate mediates between these work factors and safety-related outcomes. The results showed that all three factors significantly contributed to employees' perceptions of safety climate. Among these, safety policies and programs was the largest contributor to safety climate. Safety climate was not found to mediate between the relevant work factors and safety-related outcomes but there was partial evidence showing safety policies and programs was a mediator for safety at a workplace.

Huang et.al (2004) examined employees' perceptions of the quality of safety policies execution and the effect of these perceptions on safety outcomes in shipping companies in the USA. The results indicate that the employees' perceptions of safety policies, safety support provided by the supervisor, and safety control by the employees are vital in predicting injuries and employees' satisfaction with the company. These findings point to the importance of integrating safety policies and

relevant constructs such as employees' safety behaviour, safety cognition and safety control in improving organisational safety outcomes.

Probst and Estrada (2010) studied accident under-reporting in industrial sectors in the USA and whether safety climate and supervisor safety enforcement of policies would moderate the relationship between unreported and reported accidents. Under-reporting was found to be higher where organisational safety climate was perceived to be lower or where enforcement of safety policies by supervisor was not consistent. It was also found that perceptions of safety climate and supervisor enforcement of safety policies predicted under reporting of accidents.

These studies indicate that the implementation of safety policies is one of the important factors in improving safety outcomes.

2.4 SAFETY BEHAVIOURS

Based on Borman and Motowidlo's (1993) and Campbell et.al (1993), Neal and Griffin (1997) proposed a safety performance model which distinguishes between two dimensions of safety behaviour, that is, compliance and participation. Safety compliance describes "the core activities that individuals need to carry out to maintain workplace safety" (Neal and Griffin, 2006, p 947) like putting on a protective gear. Safety participation relates to "behaviours that do not directly contribute to an individual's personal safety but that do help to develop an environment that supports safety" (Neal and Griffin, 2006, p 947) such as volunteering in safety activities.

2.5 STUDIES ON SAFETY MANAGEMENT PRACTICES AND SAFETY BEHAVIOURS

Cooper and Phillips (2004) studied the implementation of behavioural safety initiative at a packaging production plant as well as the relationship between safety climate which include dimensions such as the importance of safety training, effects of work pace, management attitudes toward safety and safety behaviour. The findings indicate that the behavioural improvement programs which involved monitoring safe and unsafe behaviour may lead to behaviour changes but these changes may not be reflected in the perceptions of safety climate. Similarly, changes in safety climate perceptions may not lead to behaviour changes.

Griffin and Hu (2013) studied supervisors' safety leadership in motivating safety participation and safety compliance in Australia. Safety compliance was found to be positively correlated with safety participation. Safety leadership role namely safety monitoring, safety inspiring, and safety learning were significantly and positively related to safety compliance and safety participation.

Neal, Griffin, and Hart, (2000) proposed a model that accounts for the relationship among organizational climate, safety climate and safety behaviours. They argued that organisational climate predicts safety climate. For instance, if the employees perceive that the management is concerned about their welfare and well-being in general, the employees will also be more likely to perceive that their management values employees' safety and this in turn leads to self-compliance and employees' participation in safety-related activities within the workplace. Findings from their study in an Australian hospital supported the model. This means that there is a relationship between general perceptions of the working environment and safety

climate which includes management practices and quality of management systems. There is also a relationship between safety climate and safety behaviours mediated by safety knowledge and motivation.

Schröder et.al (2015) compared the safety perceptions, safety practices and safety compliance behaviour of researchers working in academic, government and industry laboratories in the United States. The study found that safety training was similar in all three institutions. However, self- reported compliance behaviour showed that researchers working in industry labs were more compliant than those working in academic and government labs. The study also found that principal investigators' or lab supervisors' active safety involvement in academic labs correlated significantly with the numbers of reported accidents. This finding indicates the importance of safety supervision in academic labs.

Vinodkumar and Bhasi (2010) examined employees' perception of the safety management practices and relating it to safety behaviours. Employees at eight chemical factories in India were surveyed to find out the employees' perceptions of six safety management practices, their level of safety knowledge and safety motivation and their influence on safety compliance and safety participation, two safety behaviour dimensions related to safety performance. The study found that workers' involvement in safety and safety promotion policies predicted safety participation directly while management commitment predicted safety compliance directly. However, three management practices, namely safety training, safety communication and feedback and safety rules and procedures were found to have indirect relationships with safety compliance as well as safety participation. Safety knowledge was the key mediator in predicting safety compliance and safety participation for all there management practices while safety motivation was the

mediator in predicting safety compliance and safety participation for safety training only. Thus, safety training was identified as the only safety management practice that predicts safety knowledge, safety motivation, safety compliance and safety participation.

2.6 STUDIES ON SAFETY MANAGEMENT PRACTICES AND SAFETY BEHAVIOURS IN MALAYSIA

There have been a few studies on this topic in the Malaysian context. With special reference to Vinodkumar and Bhasi (2010), Lukman Arif Sidek (2015) studied the relationship between six management practices, that is, management commitment, safety training, employees' involvement, communication and feedback, safety rules and procedures and safety promotions policies and safety behaviours among employees of an automotive company in Malaysia. Management practices were found to have a strong relationship with safety compliance and safety participation.

Using the questionnaire by Vinodkumar and Bhasi (2010), Subramaniam et.al (2016) investigated whether safety participation mediates the same six dimensions of safety management practices and safety compliance by surveying the employees of small and medium enterprises (smes) in the northern part of Malaysia. Three safety management practices namely management commitment, safety training, and safety rules and procedures were found to be significantly related to safety compliance. It was also found that safety participation is a mediator in the relationship between management commitment and safety training and safety compliance. The study highlights the importance of employees' safety participation in fostering a safe work environment.

Alia Kamaruddin (2013) studied the awareness of IIUM library staff at the main library in Gombak on the availability of occupational safety and health policies at the library and their perceptions of those policies. The study found that most library staff considered the library a safe workplace although several safety and health risks were identified. The study also found that a small portion of library staff were not attentive to the availability of the occupational and health policies.

Like studies in an international context, findings of the Malaysian studies with a specific focus on safety management practices and safety behaviours show that there is a relationship between some or all safety management practices examined and employee's safety behaviours. The review also indicates that studies on safety management practices and safety behaviours in Malaysia are still limited particularly in an academic setting. The present is undertaken to fill in this research gap.

2.7SUMMARY

This chapter reviews the concepts and literature related to two main concepts in this study: safety management practices and safety behaviours. The review shows that there are many factors underlying organisational safety culture or climate and management practices and safety behaviours are major components of safety-related efforts. Safety management practices are multi-dimensional comprising dimensions such as safety communication and safety training. Similarly, safety behaviours are multi-dimensional and the two common ones are safety compliance and safety participation. Although the different dimensions of safety management practices vary in their contributions to safety behaviours, in general, findings from previous studies

demonstrate that safety management practices may influence safety behaviours directly or indirectly.

Past studies were conducted in various countries and settings that are mostly non-academic. There is a dearth ofresearch on this topic in an academic setting. The present study fills in this gap by examining some dimensions of safety management practices and safety behaviours of employees in an academic institution in Malaysia. Like in any other organisations, it is also essential to find out if there is a relationship between safety management practices in this particular institution and the safety behaviour of its employees and thus the safety of the organisation. This kind of study is timely in light of Schröder et.al's (2015) finding that researchers in academic and government labs were less compliant than those working in industry labs.

CHAPTER3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter describes the methodology employed in this study. This includes the conceptual framework, research design, instrument and measurement, sampling procedures, data collection, pilot study and the summary of chapter 3.

3.2 CONCEPTUAL FRAMEWORK

To develop the conceptual framework, this study refers to Vinodkumar and Bhasi (2010) who studied safety management practices and safety performance using three types of variables. The three variables are safety management practices as the independent variables, safety performance determinants as the mediator variables and safety performance components as the dependent variables.

Vinodkumar and Bhasi (2010) examined six dimensions of safety management practices (management commitment, safety training, worker's involvement, safety communication and feedback, safety rules and procedures, and safety promotion policies), two dimensions of safety performance determinants (safety knowledge and safety motivation) and two dimensions of safety performance components conceptualized as safety behaviours (safety participation and safety compliance). The model of Vinodkumar and Bhasi's (2010) study is illustrated by Figure 3.1 below.

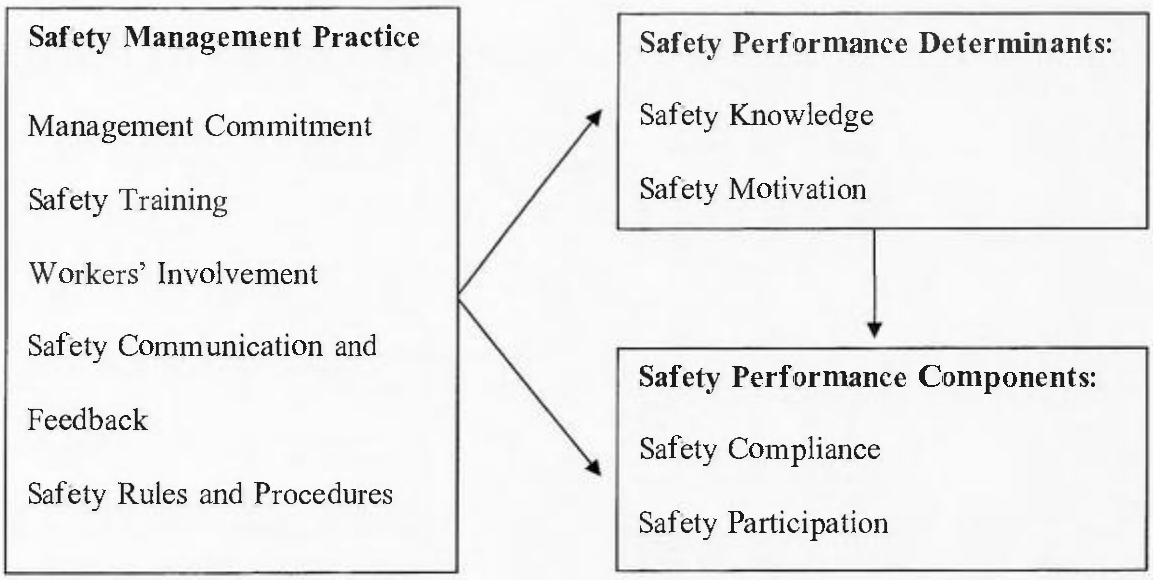


Figure 3.1
Model by Vinodkumar & Bhasi (2010)

However, this study focuses on only two variables, namely safety management practices as the independent variables and safety behaviours (which Vinodkumar and Bhasi (2010) refer to as safety performance components) as the dependent variables. Like Vinodkumar and Bhasi (2010), this study examined the same six dimensions of safety management practices and two dimensions of safety behaviours. The six dimensions of safety management practices examined are management commitment, safety training, worker's involvement, safety communication and feedback, safety rules and procedures, and safety promotion policies while the two dimensions of behaviours are safety participation and safety compliance. Thus, the conceptual framework for this study is as shown in Figure 3.2 below:

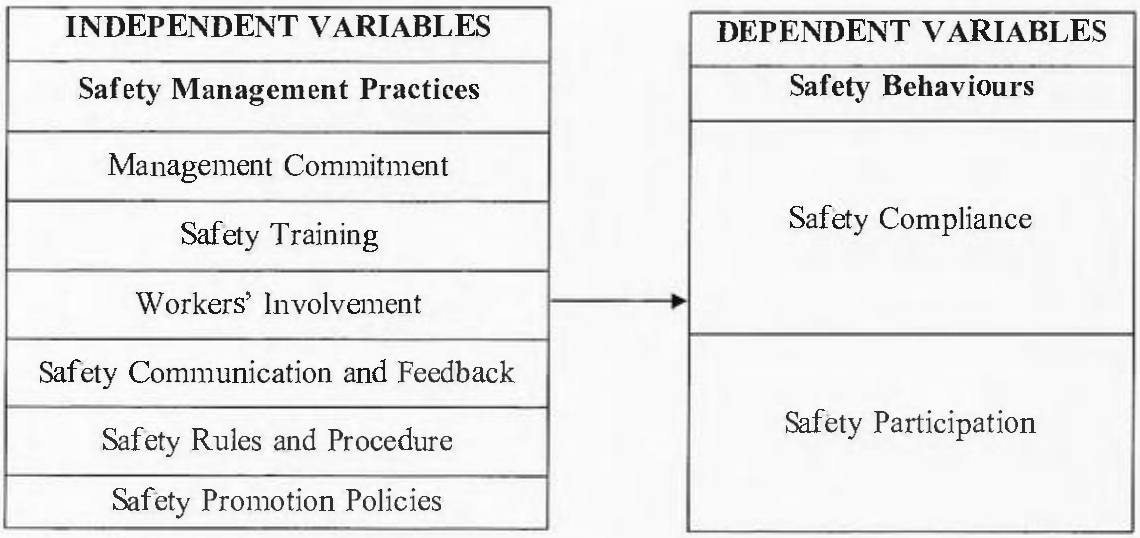


Figure 3.2
Research Conceptual Framework

3.3 RESEARCH DESIGN

The aim of this study is to measure safety management practices and safety behaviours of employees and the relationship between safety management practices and safety behaviours at International Islamic University Malaysia. Safety management practices are the independent variables while safety behaviours are the dependent variables. The study is a case study as it examines safety management practices and safety behaviours within a single organization. The unit of analysis in this study is the individual level. Due to time and cost constraints, this study employs a quantitative approach. A quantitative research has been claimed to be useful in determining whether or not an idea or a concept is better than the alternative (Anderson et.al, 2012).

3.4 INSTRUMENT DEVELOPMENT

The data for this study were collected through a survey questionnaire. A survey is considered suitable for this study as it is an excellent method 'for measuring attitudes and orientations in a large population' (Babbie, 2014, p 261). A survey is also useful

due to its economical design and effective data collection (Creswell, 2014). A questionnaire is one of the popular methods of collecting data (Sekaran & Bougie, 2010). In addition, questionnaires are valued by three dimensions of reliability: stability, equivalence, and internal consistency (O'Sullivan, Rassel and Berner, 2003).

The questionnaire consists of three parts. Section A contains questions on demographic characteristics. The demographic information requested is gender, age, work position and length of employment at the university. Section B contains 35 items on safety management practices while section C contains 12 items on safety behaviours. The university employees responded to the questionnaire by stating the extent to which they agreed or disagreed with each statement on a five-point Likert Scale as shown in Table 3.1 below.

Table 3.1
Five-Point Likert Scale

Judgement	**Scale**
Strongly disagree	1
Disagree	2
Disagree nor agree	3
Agree	4
Strongly agree	5

3.4.1 Safety Management Practices and Safety Behaviours: Questionnaire Development

The items for the questionnaire were derived and adapted from many previous studies.

a) Safety Management Practices

There are six dimensions examined for safety management practices namely management commitment (9 items), safety training (6 items), employees' involvement (5 items), communication and feedback (5 items), safety rules and procedures (5 items), and safety promotions policies (5 items).

I. Management commitment: The contents and items were derived and adapted from Cheyne et.al (1998), Cox and Cheyne (2000), Mearns et.al, 2003, Neal et al (2000), Neal and Griffith (2006) and Vredenburgh, (2002).

   i. Safety is given high priority by the management

   ii. My organization provides sufficient personal protective equipment (PPE) for the workers.

   iii. Corrective actions is always taken when the management is told of unsafe practices

   iv. Management considers safety to be equally important as production

   v. When near-miss accidents are reported, management acts quickly to solve the problem

   vi. The management is willing to compromise on safety to increase production

   vii. Safety rules and procedures are strictly followed by the management

viii. In my workplace managers/supervisors do not show interest in the safety of workers

ix. There are frequent safety training/briefing sessions that are useful/relevant to me

II Safety training: The contents and items were derived and adapted from Cheyne et.al (1998) and Vredenburgh (2002).

i. My organization gives comprehensive training to the employees in workplace health and safety issues

ii. New employees are adequately trained to learn safety rules and procedures

iii. Safety issues are given high priority in training programs

iv. Safety training given is adequate to enable employees to assess hazards at workplace

v. Management encourages the workers to attend safety training programs

vi. I am not adequately trained to respond to emergency situations in my workplace

III Employees' involvement: The contents and items were derived and adapted from Cheyne et.al (1998) and Cox and Cheyne (2000).

i. Management promotes employees' involvement in safety related matters

ii. My organization has safety committees consisting of representative of management and employees

iii. Management always welcomes opinion from employees before making final decisions on safety related matters

iv. Management consults with employees regularly about workplace health and safety issues

v. There are always enough people available to get the job done safely

IV Safety communication and feedback: The contents and items were derived and adapted from Cheyne et.al (1998), Cox and Cheyne (2000), Glendon & Litherland (2001), Mearns et.al, 2003, Neal et al (2000) and Vredenburgh, (2002).

i. There is sufficient opportunity to discuss and deal with safety issues in meetings

ii. Management operates an open door policy on safety issues

iii. The targets and goals for safety performance in my organization are not clear to the employees

iv. There is open communication about safety issues in this workplace

v. My organization doesn't have a hazard reporting system where employees can communicate hazard information before hazards occur

V Safety rules and procedures: The contents and items were derived and adapted from Cox and Cheyne (2000) and Glendon & Litherland (2001).

i. I know what are the hazards associated with my jobs and the necessary precautions to be taken while doing my job

ii. I know how to use safety equipment and standard work procedures

iii. My supervisors and managers always try to enforce safe working procedures

iv. The safety procedures and practices in this organization are useful and effective

v. I know how to maintain or improve workplace health and safety

VI Safety promotion policies: The contents and items were derived and adapted from Huang (2004), Probst and Estrada (2010) and Vredenburgh (2002).

i. I feel that it is important to promote safety programs

ii. In my organization safety week celebration and other safety promotional activities arranged by the management are very effective in creating safety awareness among the workers

iii. In my organization safe conduct is considered as a positive factor for job promotions

iv. In my organization, employees are rewarded for reporting safety hazards (thanked, cash or other rewards, recognition in newsletter)

v. There exists very healthy competition among the employees to report unsafe conditions and acts.

b) Safety Behaviours:

The contents and items were derived and adapted from Neal, Griffin and Hart (2000) and Neal and Griffin (2006).

I. Safety compliance

i. I use all necessary safety equipment to do my job

ii. I follow correct safety rules and procedures while carrying out my job

iii. I ensure the highest levels of safety when I carry out my job

iv. Occasionally due to lack of time, I deviate from correct and safe work procedures

v. It is not always practical to follow all safety rules and procedures while doing a job

vi. Occasionally due to overfamiliarity with the job, I deviate from correct and safe work procedures

vii. I carry out my work in a safe manner

II. Safety participation

i. I help my co-workers when they are working under risky or hazardous conditions

ii. I always point out to the management if any safety related matters are noticed in my company

iii. I put extra effort to improve the safety of the workplace

iv. I voluntarily carryout tasks or activities that help to improve workplace safety

v. I encourage my co-workers to work safely

These instruments have also been used by Vinodkumar and Bhasi (2010) in their study on safety management practices, safety performance determiners and safety performance components of employees at a petrochemical industry. They have adapted some of the items and added new ones many of which are also used in this study.

3.5 SAMPLING PROCEDURE

The measurement tool is a self-administered questionnaire which was developed based on previous studies. The population of this study covers employees of International Islamic University Malaysia's main campus. The employees were from all the eight faculties located at the main campus, IIUM at the time of study namely the faculty of Architecture and Built Environment, Economics, Law, Education,

Engineering, Information and Communications Technology, Islamic Revealed Knowledge and Human Sciences and an additional two ancillary service divisions. The samples were selected using convenience sampling technique. This sampling technique was chosen as it would be not be easy to get respondents in a large number due to the nature of the topic which requires respondents to reveal their own safety behaviours. Respondents would also be more willing to provide insights into the topic investigated.

3.6 DATA COLLECTION PROCEDURE

The questionnaire was piloted on 40 samples. Another 400 questionnaires were distributed to the employees. Employees at the faculties and divisions were informed of the questionnaire and were encouraged to respond to it. The respondents were asked to complete the questionnaires on their own at any time convenient to them so that they have ample time to reflect on the questions. From the 400 questionnaires distributed, only 329 questionnaires were returned to the researcher. The researcher faced some issues with 71 unreturned questionnaires due to lack of support by the respondents. According to Thomas (2004), who cited Dillman (2000), many questionnaires "with careful attention to design have response rates as high as 70 %" (p.124). The return rate of the questionnaire in this study is 82.25 %, which is comparable to the rate mentioned by Thomas.

Table 3.2
Number of Questionnaires Distributed and Returned

Item	Quantity
Questionnaire distributed	400
Questionnaire returned	329

3.6 PILOT STUDY

A pilot study acts as a guide for a bigger scale study. It is conducted to determine the degree of clarity of questions and identify problem areas that need attention (Borg & Gall, 1979). To ensure clarity and reliability of the questionnaire used in this study, it was piloted on 40 employees of the university. The demographic characteristics of the employees involved in the pilot study are presented in the Table 3.3:

Table 3.3
Demographic Characteristics of Respondents (Pilot Study)

Items	Profile	Frequency	Percentage
1	Gender		
	• Male	22	55.0
	• Female	18	45.0
	Total	40	100.0
2	Age		
	• 18–24	1	2.5
	• 25–34	4	10.0
	• 35–44	11	27.5
	• 45–54	14	35.0
	• 55 and above	10	25.0
	Total	40	100.0
3	Position		
	• Professor/Assoc Prof	9	22.5
	• Senior Lecturer/Lecturer	9	22.5
	• Director/Senior Deputy Director	2	5.0
	• Assistant Director	1	2.5
	• Executive Officer/Technician	3	7.5
	• Clerk	7	17.5
	• Support Group	9	22.5
	Total	40	100.0
4	Length of employment in this institution		
	• Less than 1 year	1	2.5
	• 1–4 years	1	2.5
	• 5–9 years	6	15.0
	• 10–14 years	8	20.0
	• 15–19 years	6	15.0
	• 20 years or more	18	45.0
	Total	40	100.0

Majority of the respondents were males, aged between 45-54 years old, academicians and employees from the support group and have served the university for more than 20 years. The respondents did not report any confusion or ambiguity of the questionnaire items and as such it was assumed that the questionnaire was clear to the respondents. As for reliability, the raw data obtained from this pilot study were analysed using Statistical Package for Social Sciences (SPSS) version 19.0. Instrument reliability refers to the degree of consistency and stability of an instrument and the most widely used measure of instrument's internal consistency is a statistic called Cronbach's Alpha (Aron and Aron, 2002). Reliability is described by the coefficient of reliability (Alpha) between the values of 0.00 to 1.00. Thus, the higher the Cronbach's Alpha value, the higher the reliability of the instrument. Cronbach's Alpha values of the dimensions measured in the pilot study are shown in Table 3.4 below.

Table 3.4
Cronbach's Alpha Values (Pilot Study)

Construct Dimensions	**No of items**	**Cronbach's Alpha**	
Safety Management Practices	**35**	**0.948**	0.9
Management commitment	9	0.821	0.8
Safety training	6	0.888	0.9
Employees' involvement	5	0.807	0.8
Safety communication and feedback	5	0.665	0.7
Safety rules and procedures	5	0.862	0.9
Safety promotions policies	5	0.650	0.7
Safety Behaviours	**12**	**0.843**	**0.8**
Safety compliance	7	0.670	0.7
Safety participation	5	0.834	0.8
Total	47	**0.951**	**0.9**

A Cronbach's Alpha value that is less than 0.6 is considered as poor (Sekaran and Bougie, 2010) and should be at least 0.6 or 0.7 for it to be useful (Aron and Aron, 2002). Table 3.4 shows that the Cronbach Alpha values for all dimensions are above 0.6. This means that all variables and dimensions have good internal consistencies (Nunnally, 1994). Thus, the questionnaire can be considered reliable.

3.7 DATA SCREENING AND ANALYSIS

The statistical package for social science (SPSS) version 19 was used to analyse the assessment data. Before the analysis, the data were checked for its distribution. A box plot analysis shows that there was no outlier in the data. Kolmogorov-Smirnov test shows that the data were normally distributed (statistic=.046, p=.088). To answer the three research questions, the data were analysed using frequencies and percentages, descriptive as well as inferential statistics. Further descriptions on the analysis are provided in chapter 4.

3.8SUMMARY

This chapter describes the methodology used in the study including the conceptual framework, questionnaire and pilot study. The conceptual framework was based on Vinod and Bhasi (2010). The contents and items for the questionnaire were adapted from many previous studies. The pilot study was based on 40 questionnaire samples that examine the employees' perceptions of safety management practices and employees' safety behaviours at the International Islamic University Malaysia. The SPSS software version 19 was used to analyse the pilot study data for reliability of the instrument. The result shows that the instrument has a high degree of reliability. The following chapter presents the results of the data analysis for the main study.

CHAPTER4

RESULTS AND ANALYSIS

4.1 INTRODUCTION

This chapter presents the findings of this study on safety management practices and safety behaviours of employees conducted at the International Islamic University Malaysia. The data were collected using a questionnaire. All the data gathered from the study were analysed for instrument reliability, respondents' profile, respondents' responses to items on safety management practices and safety behaviours and the relationship between safety management practices and safety behaviours.

4.2 DATA ANALYSIS

The data were analysed in the following ways:

Firstly, the reliability analysis was used for testing the reliability of the variables in the questionnaire which are safety management practices and safety behaviours. Secondly, the frequency and percentage analyses are used for describing demographic information about the respondents. Thirdly, the mean is used to analyse the respondents' responses to the items given in the questionnaire to find out the level of safety management practices and safety behaviours at the International Islamic University. This answers research question 1: What is the level of safety management practices at the International Islamic University Malaysia? And research question 2: What is the level of safety behaviours of employees at the International Islamic University Malaysia? Fourthly, the Pearson Correlation Coefficient test is employed to answer question 3: Is there any relationship between

safety management practices and safety behaviours of employees at the International Islamic University Malaysia?

4.3 DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

There were in total 329 respondents. Table 4.1 and Table 4.2 display the gender and different work positions held by the academic and administrative staff of the university respectively.

Table 4.1
Gender of Respondents

Gender	N	%
Male	146	45.3
Female	176	53.7
Total	322	100.0

Table 4.2
Work Positions of Respondents

Positions	N	%
Academic staff	98	45.3
Administrative staff	231	53.7
Total	329	100.0

As shown by tables 4.1 and 4.2 above, 45.3% of the respondents were male and another 53.7% were female employees. Slightly more female respondents completed and returned the questionnaire. 29.8% of the employees who returned the questionnaire were academic and 70.2% were administrative staff. Interestingly, a lot more administrative staff returned the questionnaire probably because of the

inclusion of two ancillary service departments in which all employees are administrative staff.

Table 4.3 below shows the positions held by the academic staff while table 4.4 shows the position held by the administrative staff.

Table 4.3
Positions of Academic Staff

Positions	**N**	**%**
Professors or Associate Professors	49	50.0
Senior lecturers or lecturers	49	50.0
Total	98	100.0

Among the academic staff (N=98), 50.0 % were Professors or Associate Professors, and 50.0 % were senior lecturers or lecturers indicating a balance between the higher and lower ranks among the academics who responded to the questionnaire.

Table 4.4
Positions of Administrative Staff

Positions	**N**	**%**
Director/Senior Deputy Director	4	1.7
Deputy Director/Senior Asst Director	22	9.6
Assistant Director	14	6.1
Executive Officer/Technicians	61	26.5
Clerk	59	25.7
Support Group	70	30.4
Total	230	100.0

Among the administrative staff (N=230), 1.7% were Director or Senior Deputy Director, 9.6% were Deputy Director or Senior Assistant Director, 6.1% were Assistant Director, 26.5% were Executive Officer or Technicians, 25.7% were clerks, and 30.4% were in the support group. More respondents were from the lower positions reflecting the general population of an organization where fewer people are in the leadership positions. Table 4.5 below shows the age groups of the respondents.

Table 4.5
Age Groups of Respondents

Age groups	**N**	**%**
18 to 24 years	9	2.7
25 to 34 years	71	21.6
35 to 44 years	127	38.7
45 to 54 years	108	32.9
55 years and above	13	4.0
Total	328	100.0

As shown by Table 4.5, most of the respondents were between 34-44 years old. Generally, the respondents were between 25 - 54 years old except for a small percentage who were between 18-24 years old or above 55 years old.

Table 4.6
Respondents' Length of Service at the University

Respondents' Length of Service	N	%
Less than 1 year	8	2.4
1-4 years	21	6.4
5-9 years	48	14.6
10-14 years	93	28.4
15-19 years	76	23.2
20 years or more	82	25.0
Total	328	100.0

Most of the respondents have worked for between 10-14 years. In general, the respondents have served the university for between 5 - 20 years or more except for a small percentage who have served the university for less than 10 years.

The demographic profile shows that respondents of the questionnaire were from both gender and from academic as well as administrative positions. They are of different age groups, positions held and length of service at the university.

4.4 QUESTIONNAIRE RELIABILITY TEST

Table 4.7 below shows the Cronbach's Alpha Values of Variables.

Table 4.7
Cronbach's Alpha Values of Variables

Construct Dimensions	No of items	Cronbach's Alpha	
Safety Management Practices	**35**	**0.956**	**0.9**
Management commitment	9	0.839	0.8
Safety training	6	0.870	0.9
Employees' involvement	5	0.817	0.8
Safety communication and feedback	5	0.707	0.7
Safety rules and procedures	5	0.833	0.8
Safety promotions policies	5	0.743	0.7
Safety Behaviours	**12**	**0.865**	0.9
Safety compliance	7	0.800	0.8
Safety participation	5	0.865	0.9
Total	**47**	**0.960**	**0.9**

The reliability analysis is necessary to find out 'the degree of stability or consistency' of the questionnaire (Aron and Aron, 2002, p 271). As mentioned earlier, a Cronbach's Alpha value that is less than 0.6 is considered as poor (Sekaran and Bougie, 2010) and should be at least 0.6 or 0.7 for it to be useful (Aron and Aron, 2002). The Cronbach's Alpha for each construct and dimension in this study exceeds 0.7 while the Cronbach's Alpha for the questionnaire is 0.96. Thus, the questionnaire can be said to have a high degree of reliability.

4.5 LEVEL OF SAFETY MANAGEMENT PRACTICES

To answer the research question 'What is the level of safety management practices at the International Islamic University Malaysia?', the mean was computed for each dimension of safety management practices. The results are shown in Table 4.8.

Table 4.8
Mean and Standard Deviation (SD): Safety Management Practices

Construct / Dimensions	**N**	**Mean**	**SD**
Safety Management Practices	329	3.61	0.52
1. Management Commitment	329	3.62	0.55
2. Safety training	329	3.59	0.68
3. Employees' involvement	329	3.64	0.62
4. Safety communication and feedback	329	3.50	0.56
5. Safety rules and procedures	329	3.74	0.61
6. Safety promotion policies	329	3.50	0.61

The mean of the employees' responses to the six dimensions of safety management practices are interpreted based on the classification of mean described by Lukman Arif Sidek (2015) as shown by Table 4.9 below:

Table 4.9
Classification of Mean

Range of Mean	**Description**
1.00-1.80	Very low
1.81-2.60	Low
2.61-3.40	Moderate
3.41-4.20	High
4.21-5.00	Very High

Table 4.8 shows that the means of all dimensions can be considered high, that is, between 3.41- 4.20. These findings are similar to those of Lukman Arif Sidek (2015) who surveyed employees at an automative company in Malaysia. Except for safety promotion policies dimension which has a moderate mean value, the means of management commitment, safety training, employees' involvement, safety communication and feedback and safety rules and procedures in Lukman Arif Sidek's study are also classified as high. This indicates that like the employees in Lukman Arif Sidek's study, the employees in this study generally have a positive perception of the safety practices at their organization.

Table 4.8 also shows that the highest mean is of safety rules and procedures, 3.74 (SD= 0.61). This is followed by the mean of employees' involvement, 3.64 (SD = 0.62), management commitment, 3.62 (SD = 0.55) and safety training, 3.59 (SD =0.68). The lowest mean is 3.50 which is the mean of safety communication and feedback (SD = 0.56) and safety promotion policies (SD = 0.61). This shows that certain dimensions are perceived by the employees to be relatively better and others.

4.6 LEVEL OF SAFETY BEHAVIOUHS

To answer the research question 'What is the level of safety behaviours of employees at the International Islamic University Malaysia?, the mean of each dimension of safety behaviours was computed. The results are shown in Table 4.10.

Table 4.10
Mean and Standard Deviation (SD): Safety Behaviours

Construct / Dimensions	**N**	**Mean**	**SD**
Safety Behaviours	329	3.77	0.49
1. Safety Compliance	329	3.68	0.54
2. Safety Participation	329	3.90	0.59

The means of the employees' responses to the two dimensions of safety behaviours are also interpreted based on the classification of mean in Table 4.3 shown previously.

The mean of safety compliance which is 3.68 (SD = 0.54) is lower than the mean of safety participation which is 3.90 (SD = 0.59). However, the means of both safety compliance and safety participation are between 3.41- 4.20 which can be considered high. This indicates the employees' positive attitude towards safety.

4.7 SAFETY MANAGEMENT PRACTICES AND SAFETY BEHAVIOURS

To answer the research question 'Is there any relationship between safety management practices and safety behaviours of employees at the International Islamic University Malaysia?', the Pearson Correlation Coefficient test was computed. The results are shown in Table 4.11 and Table 4.12.

Table 4.11
Mean and Standard Deviation (SD): Safety Management Practices and Safety Behaviours

Dimensions	**N**	**Mean**	**SD**
Safety Management Practices	329	3.61	0.52
Safety Behaviours	329	3.77	0.49

Table 4.11 shows the mean of the independent and dependent variables. The mean of the independent variable, safety management practices, is 3.61(SD = 0.52) while the mean of the dependent variable, safety behaviours, is 3.77 (SD = 0.49). Like in Lukman Arif Sidek's (2015) study, the mean of safety behaviours, the dependent variable, is higher than the mean of safety management practices, the independent variable.

4.8 RELATIONSHIP BETWEEN SAFETY MANAGEMENT PRACTICES AND SAFETY BEHAVIOURS

Table 4.12
Correlation Coefficient: Safety Management Practices and Safety Behaviours

	Safety Management Practices	Safety Behaviours
Safety Management Practices	1	.672**
Safety Behaviours	.672**	1
N	329	329

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

The correlation values given in Table 4.12 are interpreted as follows:

Table 4.13
Correlation Values

Range of Correlation	Description
0.91 to 1.00 or -0.91 to -1.00	Very strong
0.71 to 0.90 or -0.71 to -0.90	Strong
0.51 to 0.70 or -0.51 to -0.70	Moderate
0.31 to 0.50 or -0.31 to -0.50	Weak
0.01 to 0.30 or -0.01 to -0.30	Very Weak
00	No Correlation

Source: Chua (2008), p 246.

The correlation value between safety management practices and safety behaviours is .672. Based on Table 4.13, it can be said that two constructs are moderately correlated. This supports the finding of some studies for example, Griffin and Hu, (2013) and Lukman Arif Sidek (2015) that there is a positive relationship between safety management practices and safety behaviours. However, unlike

Lukman Arif Sidek's (2015) study which found a strong relationship between safety management practices and safety behaviours, this study found that the relationship between the two constructs is only moderate. Cooper and Phillips (2004) for instance found that changes in safety climate perceptions which include management practices may not lead to behaviour changes. In other words, it not always the case that safety management practices is strongly correlated with good safety behaviours. For a better understanding of the relationship between safety management practices and safety behaviours in this study, the relationship between each dimension of safety management practices and each dimension of safety behaviours was examined.

4.9 RELATIONSHIP BETWEEN SAFETY MANAGEMENT PRACTICES AND SAFETY COMPLIANCE

Table 4.14 shows the correlation coefficient values of the six dimensions of safety management practices examined in this study and safety compliance.

Table 4.14
Correlation Coefficient Values of Safety Management Practices and Safety Compliance

Variables	B1	B2	B3	B4	B5	B6
Management commitment (B1)	1					
Safety training (B2)	.804**	1				
Employees' involvement (B3)	.764**	.776**	1			
Safety communication and feedback (B4)	.678**	.683**	.641**	1		
Safety rules and procedures (B5)	.723**	.749**	.767**	.604**	1	
Safety promotions policies (B6)	.705**	.746**	.741**	.679**	.708**	1
Safety compliance (C2)	.498**	.561**	.499**	.440**	.570**	.535**

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

Table 4.14 shows that the six safety management practices are positively correlated with safety compliance. Management commitment, employees' involvement and safety communication and feedback have a weak correlation with safety compliance while safety training, safety rules and procedures and safety promotion policies have a moderate correlation with safety compliance. These findings are similar to the findings of Subramaniam et.al (2016) who found that safety management practices, specifically management commitment, safety training, and safety rules and procedures were significantly related to safety compliance.

4.10 RELATIONSHIP BETWEEN SAFETY MANAGEMENT PRACTICES AND SAFETY PARTICIPATION

Table 4.15 below shows the correlation coefficient values of the six dimensions of safety management practices examined in this study and safety participation.

Table 4.15
Correlation Coefficient Values of Safety Management Practices and Safety Participation

Variables	B1	B2	B3	B4	B5	B6
Management commitment (B1)	1					
Safety training (B2)	.804**	1				
Employees' involvement (B3)	.764**	.776**	1			
Safety communication and feedback (B4)	.678**	.683**	.641**	1		
Safety rules and procedures (B5)	.723**	.749**	.767**	.604**	1	
Safety promotions policies (B6)	.705**	.746**	.741**	.679**	.708**	1
Safety participation (C1)	.524**	.507**	.462**	.507**	.514**	.571**

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

Table 4.15 shows that the six safety management practices are correlated with safety participation. Safety training, employees' involvement, and safety communication and feedback are weakly correlated with safety participation while management commitment, safety rules and procedures and safety promotion policies are moderately correlated with safety participation. These findings support Vinodkumar and Bhasi's (2010) findings on three of these dimensions namely employees' involvement, safety promotional policies and safety training. In their study, workers' involvement in safety and safety promotion policies were found to predict safety participation and safety training predicted a number of dimensions including safety compliance and safety participation.

4.11 SUMMARY

This chapter presents the findings of a study on safety management practices and safety behaviours at the International Islamic University Malaysia. To find out the level of safety management practices and safety behaviours, six dimensions of safety management practices and two dimensions of safety behaviours were analysed using the mean. The study found that the mean of the six safety management practices dimensions and the two safety behaviours dimensions are in the high range. These findings imply that the employees perceived that the safety management practices and their own safety behaviours are at the high level. In addition, the Pearson Correlation Coefficient test was run to find out if there is a relationship between safety management practices and safety behaviours. Similar to many previous studies, the study found a positive relationship between safety management practices and safety behaviours. This suggests that safety management practices may influence safety behaviours in this case in a moderate way.

CHAPTER5

DISCUSSION AND CONCLUSION

5.1 SUMMARY OF RESEARCH

Safety is a cause of great concern for any organization and understanding this issue can help in improving the safety level of that organization. This study surveyed employees of a university in Malaysia to answer three research questions on safety:

1. What is the level of safety management practices at International Islamic University Malaysia?
2. What is the level of safety behaviours at International Islamic University Malaysia?
3. Is there any relationship between safety management practices and safety behaviours of employees at International Islamic University Malaysia?

Safety management practices is the independent variable while safety behaviours is the dependent variable in this study. Six dimensions of safety management practices and two dimensions of safety behaviours were examined. Results of the study show that the employees rated the safety management practices and their own safety behaviours at the high level. The study also found that there is a positive relationship between safety management practices and safety behaviours.

5.2 DISCUSSSION

The high mean obtained by all six dimensions of safety management practices shows that these practices are noticeable to the employees. The university has been

established for more than 30 years and has been awarded the ISO certification and other accreditations. Certification and accreditations are evidence for credibility and competency for which safety is one important component. This could explain the high ratings given by the employees to safety management practices at the university. Vinodkumar and Bhasi (2010) for example found that organizations with ISO 9001 certifications had higher levels of safety behaviours and almost all safety management practices compared to uncertified organizations.

The high mean value obtained by management commitment dimension implies that the employees appreciate and recognize the efforts put in by the management in maintaining safety at the university. The university, in particular the OSHBE department, plans and implements a number of safety initiatives such as conducting safety trainings and setting up safety committees. As stated by Fernández-Muñiz (2007) managers' commitment is important in promoting employees' safe behaviour and involvement.

The high mean value of safety training indicates that the employees are aware of the trainings provided by the university. Training is one of the activities organized by the management in maintaining safety at the university. In-house trainings such as in identifying hazards and precautionary measures to be taken to avoid accidents in laboratories are given to safety representatives of the faculties. The university invites officers from other government agencies such as the Fire and Rescue Department, DOSH and NIOSH to train the faculty representatives. There are also seminars, briefings or talks on safety arranged for the employees. Training has been associated with lower accident rates or better safety performance as found by Hare and Cameron (2011).

The high mean value obtained for employees' involvement means that the university's employees notice the management's effort to involve them in safety activities. The university sets up safety committees headed by the Dean of a faculty or Director of a center and the faculty or center appoints a safety liason officer to liase with the OSHBE department. The OSHBE department conducts regular meetings with the representatives and the representatives are expected to conduct meetings with members of their faculties. Employees' involvement can influence safety behaviours. For instance, Ariss (2003) in a study on Employee Involvement Intervention Model found that the programme lowered injury and safety violation occurrences at an automotive plant.

The employees also rated safety communication and feedback highly. The university uses various means of communicating safety matters like through the OSHBE department website, trainings, briefings and talks. The university sends emails to employees to inform them of perceived risks or threats when necessary. For instance, employees are reminded of precautions that should be taken such as during long holidays and undesirable weather condition. Where relevant and when necessary, there are notices or posters regarding safety posted on boards at the faculties or the campus in general. The OSHBE department sends online questionnaire to the employees annually for them to provide feedback on safety matters. The employees can also convey their concerns to the safety committee or liason officer at their faculty. Safety communication can influence safety behaviours. As discovered by Thomson et.al (2011), higher ratings of interactions between the management and employees were associated with positive staff perceptions of safety behaviours.

The mean of safety rules and procedures is also high which means that the employees are aware of the safety rules and procedures provided by the university either on the website or at each faculty and consider them useful. As suggested by Dahl (2013), in order to improve safety compliance, employees should be made aware of the level of understanding expected of them in terms of rules and procedures and what these rules and procedures are supposed to reduce.

Like the other safety management practices, the mean of safety promotion policies is also within the high range indicating the employees' positive perception of safety promotional efforts made by the university. Huang et.al (2004) asserts that safety policies execution is vital in predicting injuries and employees' satisfaction.

In short, the high mean obtained for all the safety management practices is a good sign for the university as employees' perception of these practices may influence their safety behaviours. According to Neal, Griffin, and Hart (2000), if the employees perceive that the management cares about their welfare and well-being in general, they will more likely perceive that their safety is valued by the management. This leads to employees' compliance and participation in safety-related activities.

Since the means of the six safety management practices dimensions are all classified as high, not much can be deduced regarding the difference in employees' perception of these six dimensions. However, in comparison to the other dimensions, safety rules and procedures obtained the highest mean which can be taken to mean that it is more noticeable to the employees. This is encouraging as Vinodkumar and Bhasi (2011) found that the enforcement of safety rules and procedures was the common predictor of safety behaviours in certified and non-certified companies.

Meanwhile, safety communication and feedback and safety promotion policies (which have the lowest mean) are perceived to receive relatively less attention by the management. The management may like to improve their communication and promotional efforts more compared to the other safety dimensions. Although there are various ways used by the management to communicate and get feedback about safety, they may not be sufficient and effective for the employees. The employer may need to do more regarding not just the methods of communicating but probably also the contents of safety communication and feedback to make them more visible to the employees. It is also possible that safety information is not always effectively cascaded down to the employees through the faculty safety representatives. As for safety promotional policies, the university needs to consider integrating safety contents in other activities where appropriate. The university may also want to consider promoting safety through special activities devoted to safety such as a safety week, safety awards and more rigorous safety campaigns.

The means of the two dimensions of safety behaviours namely safety compliance and safety participation are also at the high level. This indicates the employees' positive attitude towards safety. This could be reflective of a well-established university which has acquired many experienced employees. The mean of safety participation is higher than the mean of safety compliance but the difference is rather small so, it can be inferred that the difference in perception may be quite small too. However, it does imply that the employees rated themselves slightly better in participating in safety activities than complying with safety procedures.

Despite the high mean obtained by all the six dimensions of safety management practices and the two dimensions of safety behaviours, accidents and

injuries still occur on campus. This implies that the employees do not always comply with the safety regulations and procedures. For example, some employees may use personal protective equipment (PPE) only when they are supervised or safety regulations are being enforced by the management. The working environment in the university also gradually changes with new technology and operation mechanism that lead to the implementation of new safety rules, regulations or procedures. The employees, however, may not fully understand or lack in-depth knowledge of the new rules, regulations and procedures and this can cause accidents or injuries. Safety trainings are required to increase the employees' awareness of and knowledge about safety as well as to inculcate a positive attitude towards occupational safety.

Overall, the mean of safety behaviours, the dependent variable, is higher than the mean of safety management practices, the independent variable. This indicates that the employees perceived their own safety behaviours slightly more positively than the safety practices of the management possibly because the employees are more aware of their own actions and believed that they are concerned about safety. This study also found that there is a positive relationship between safety management practices and safety behaviours. This confirms the finding of previous studies among others, Griffin and Hu (2013), Langford, Rowlinson and Sawacha (2000), Lukman Arif Sidek (2015), and Neal, Griffin, and Hart (2000) and hence suggests that safety management practices is associated with employees' safety behaviours.

As these findings replicate some findings of other studies, it shows that some dimensions of safety management practices and safety behaviours are stable across industries and cultures. The positive relationship between safety management practices and safety behaviours suggests that organizations should provide reliable safety management practices to inculcate good safety behaviour in its employees.

5.3 THEORETICAL AND PRACTICAL IMPLICATIONS

5.3.1 Theoretical Implications

The study has a few theoretical implications. By obtaining the data from the International Islamic University Malaysia, the study extends the investigation on occupational safety to a context that has not been widely studied. Thus, findings from the study can add to the literature on safety in academic institutions especially in Malaysia. With ample opportunities for similar research still to be conducted in Malaysia, researchers can find out the industry average for benchmarking and identifying the best practices with regard to safety in an academic setting. The study can also inform the literature of similarities or differences between safety in an academic setting and that in other industries and if dimensions of safety management practices and safety behaviours are stable across industries or organizations. For data collection, this study utilised a questionnaire. Correlation tests conducted on the individual items yielded acceptable results which indicate that the questionnaire is generally a reliable tool for data collection.

5.3.2 Practical Implications

This study examined specific dimensions of safety management practices and safety behaviours of employees at the International Islamic University Malaysia and the findings highlight specific items that can be improved to enhance the general safety environment at the university. In particular, the OSHBE department may want to prioritise on promoting and finding ways to better communicate with the employees on safety related matters. Among others, the department should consider informing employees of accidents and injuries that happen especially on campus. Though the employees rated the management highly on safety practices, the statistics on injuries

occurring on campus show that additional efforts are still necessary. The department may want to enhance other safety practices too like providing further trainings and involvement by the employees. To conduct these activities, the OSHBE department may need to source for more funds.

The findings can also be a source of reference not only to the said institution but other academic institutions in terms of safety issues and safety related efforts. A better understanding of employees' perceptions of managements' practices and their own behaviours toward safety can help organizations align safety policies and regulations with human behaviours so that a safer work environment can be created (Huang and Chen, 2004).

The study could also help employees become more aware of hazards and safety issues at the workplace. The employees may not be aware of injuries or accidents that have occurred on campus and that their behaviours can cause safety hazards. Knowing that accidents do occur and some quite seriously will be an eye-opener to the employees. Findings of the study highlight some areas of safety that employees need to be aware of, actions they can take to comply with safety regulations and activities they can participate in to maintain and promote safety. With increased awareness, employees will not only avoid unsafe behaviours but they will also be more responsible of their own safety and cooperate with the management to enhance workplace safety.

5.4 LIMITATIONS

This study has a number of limitations. The study does not examine personal demographic variables in analyzing the results. For example, academic staff' perceptions of safety management practices and safety behaviours may be different

from those of non-academics. Differences in these personal variables can be informative for the organization (Cooper, 2004). The only tool used for data collection was a survey and as such more in-depth and personal opinions of the employees could not be obtained. The study was conducted at only one university and one of its campuses. Thus, the findings cannot be generalised to other universities or the university as a whole.

5.5 RECOMMENDATIONS FOR FUTURE RESEARCH

For a better understanding of safety issues, future research should examine personal demographic variables to see how the safety practices at the organization affects different employees. Future research should also consider interviewing some employees to give them the opportunity to voice out their concerns that cannot be expressed through a questionnaire. Future research could also investigate if employees' behaviours contribute to injuries at the workplace, another component of safety performance. It will also be interesting to carry out a similar study at other Malaysian universities or colleges for a better understanding of safety management practices and safety behaviours at academic institutions in Malaysia generally.

5.6 CONCLUSION

It cannot be denied that health and safety are significant issues in any organization. Having a safety management system is only the first step towards enhancing safety at the workplace. It may not be sufficient to prevent or reduce unwanted incidents. For successful and continuous improvement of workplace safety, the management needs to pay attention to many other factors including safety trainings, the involvement of its employees in safety related activities, its commitment to safety activities and

communication with the employees regarding safety matters. The employees too should have safety awareness and good safety practices to maintain safety at an organization. This means that for a safety system in an organization to thrive, all employees at all levels including the management must have the awareness, the right attitudes and the desire to be actively involved in safety practices. In other words, the management and employees of an organization should strive to create a good safety climate which should ultimately develop into a positive safety culture.

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