INFLUENCE OF RELIGIOSITY AND FATALISM ON SAFETY BEHAVIORS OF MUSLIM SHIPYARD WORKERS IN MALAYSIA

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INFLUENCE OF RELIGIOSITY AND FATALISM ON SAFETY BEHAVIORS OF MUSLIM SHIPYARD WORKERS IN MALAYSIA

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A thesis submitted in fulfilment of the requirements for the award of the degree of Doctor of Philosophy

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DEDICATION

In the name of Allah, the Most Compassionate, the Most Merciful,

I dedicate this thesis to my beloved mother, Dasimah Chik;
as well as my father, Mahmud Omar;
and my family, Tuan Nurlaili, Fauziah,
Faiz, Sarah, Firdaus, Masyitah, Faris, Naseerah, Nazwa,
Amir, Syahirah, Sofea and Fahim.

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ABSTRACT

Increasing accident rates in the construction industry in Malaysia is a concern. Although a plethora of factors are attributed to these accidents, unsafe behavior is one of the main causes of the accidents. The Theory of Planned Behavior assumes that beliefs could affect a person's attitudes and behaviors. Therefore, religious and fatalistic beliefs could potentially shape a person's safety behavior. Religiosity is the intensity of religious belief and practices; while fatalism refers to the inability to control events. Religiosity could possibly enhance safety behavior as a person would feel wrong to God if he or she does anything unsafe. On the contrary, fatalism would make a person feel pointless in practicing safety behavior as he or she believes accident would still happen if it is destined to. Most studies on safety in the construction industry were done in western contexts, and not based on respondents' faith. Very little is known about the safety behaviors of the Muslim workers. Therefore, to fill this knowledge gap, the study attempted to explore the influence of religiosity and fatalism on the behaviors of Muslim workers. The shipyard workers were chosen as the subjects of the study as they represent a good sample of Muslims working in the high-risk construction industry. A cross-sectional survey was based on a convenience sampling, as random sampling was not possible due to the daily changes of the workers in the shipyard. After receiving 452 out of 850 questionnaires distributed, confirmatory factor analysis was conducted using the SEM software, AMOS Version 21, to assess the uni-dimensionality, validity, reliability, normality and fit indexes of the data. This was followed by testing of hypotheses, conceptual framework and mediation. The results indicate that religiosity significantly and positively influenced safety behavior, safety attitude, and safety motivation. While, fatalism shows negative correlations with religiosity, safety attitude, safety motivation and safety behavior. It was also found that safety motivation, safety attitude, and fatalism partially mediated the religiosity and safety behavior relationship, which shows that safety behavior is not solely influenced by religiosity, but by safety motivation, safety attitude, and fatalism as well. The proposed framework was found fit to a structural model produced and all ten hypotheses were supported by the data. Since religiosity shows the strongest influence on fatalism, therefore, enhancing religiosity could substantially reduce fatalism and increase the safety attitude, safety motivation and safety behavior as well. The findings will benefit workers and organizations since both are facing increased risk of injuries and loss of profits resulting from an increased rate of accidents caused by unsafe behaviors. It is hoped that the findings would give a better understanding to the organizations, by considering varied perceptions of Muslim workers when implementing safety interventions or policies. Researchers are recommended to expand this kind of study across people of different religions, as safety interventions that work for people from one religion might not work for people from other religions.

ABSTRAK

Peningkatan kadar kemalangan dalam industri pembinaan di Malaysia merupakan satu kebimbangan. Walaupun terdapat banyak faktor yang menyebabkan kemalangan ini, tingkah laku tidak selamat adalah salah satu punca utama kemalangan. Teori Kelakuan Berencana mengatakan bahawa kepercayaan dapat mempengaruhi sikap dan kelakuan seseorang. Oleh itu, kepercayaan agama dan fahaman berserah berkemungkinan membentuk tingkah laku keselamatan seseorang. Keagamaan adalah tahap kepercayaan dan amalan agama manakala fahaman berserah merujuk kepada ketidakmampuan untuk mempengaruhi peristiwa. Keagamaan berkemungkinan boleh meningkatkan tingkah laku keselamatan kerana seseorang akan merasa bersalah kepada Tuhan sekiranya dia melakukan sesuatu yang tidak selamat. Sebaliknya, fahaman berserah akan membuat seseorang merasa sia-sia dalam mengamalkan tingkah laku keselamatan kerana dia percaya kemalangan akan berlaku jika sudah ditakdirkan. Kebanyakan kajian keselamatan dalam industri pembinaan dijalankan di Barat dan tidak mengambil kira kepercayaan responden. Hanya sedikit yang diketahui tentang tingkah laku keselamatan pekerja Muslim. Oleh itu, untuk mengisi jurang pengetahuan ini, kajian ini mengkaji pengaruh keagamaan dan fahaman berserah terhadap kelakuan pekerja Muslim. Pekerja limbungan kapal dipilih sebagai subjek kerana mereka mewakili sampel umat Islam yang baik yang bekerja dalam industri pembinaan berisiko tinggi. Kajian keratan rentas dibuat berdasarkan persampelan mudah kerana persampelan secara rawak tidak dapat dilakukan kerana pertukaran pekerja berlaku pada setiap hari. Selepas menerima 452 dari 850 soal selidik yang diedarkan, analisa pengesahan faktor telah dijalankan mengunakan perisian SEM, AMOS V21 untuk menaksirkan satu-dimensionaliti, kesahihan, kebolehpercayaan normaliti dan indeks yang bersesuaian dengan data. Ini diikuti dengan ujian hipotesis, kerangka konseptual, dan mediasi. Keputusan menunjukkan bahawa sikap keagamaan secara signifikan dan positif mempengaruhi tingkah laku keselamatan, sikap keselamatan dan motivasi keselamatan walaupun fahaman berserah menunjukkan hubungan negatif dengan keagamaan, sikap keselamatan, motivasi keselamatan dan kelakuan keselamatan. Ia juga mendapati bahawa motivasi keselamatan, sikap keselamatan, dan fahaman berserah menjadi pengantara antara hubungan kegamaan dengan tingkah laku keselamatan yang menunjukkan bahawa tingkah laku keselamatan tidak hanya dipengaruhi oleh keagamaan tetapi oleh motivasi keselamatan, sikap keselamatan, dan fahaman berserah juga. Rangka kerja yang dicadangkan di dapati bertepatan dengan model struktur yang dihasilkan dan kesemua sepuluh hipotesis telah disokong oleh data. Oleh kerana keagamaan menunjukkan pengaruh terkuat pada fahaman berserah, maka, meningkatkan keagamaan boleh mengurangkan fahaman berserah dan meningkatkan sikap keselamatan, motivasi keselamatan, dan tingkah laku keselamatan. Dapatan ini akan memberi manfaat kepada pekerja dan organisasi kerana kedua-duanya menghadapi risiko kecederaan dan kehilangan keuntungan akibat peningkatan kadar kemalangan yang disebabkan oleh kelakuan yang tidak selamat. Keputusan kajian ini boleh memberi kefahaman yang lebih baik kepada organisasi dengan mengambil kira berbagai persepsi pekerja Muslim, apabila membentuk intervensi atau polisi keselamatan. Penyelidik dianjur untuk memperluaskan kajian seperti ini terhadap penganut dari pelbagai agama kerana intervensi keselamatan yang berjaya untuk penganut dari satu agama mungkin tidak berjaya bagi penganut dari agama yang lain.

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LIST OF ABBREVIATIONS

AGFI - Adjusted Goodness-of-Fit Index

AIDS - Acquired Immunodeficiency Syndrome

AMOS - Analysis of Moments Structures AVE - Average Variance Extracted BBS - Behavior Based Safety

CFA - Confirmatory Factor Analysis

CFI - Comparative Fit Index
CSI - Cultural Safety Intervention
CVI - Content Validity Index

DOSH - Department of Safety and Health (Malaysia)

DOSM - Department of Statistics Malaysia

DTPB - Decomposed Theory of Planned Behavior

EFA - Exploratory Factor Analysis EFA - Exploratory Factor Analysis

F - Fatalism

GDP - Gross Domestic Product
GFI - Goodness-of-Fit Index
H.S.E. - Health Safety Environment
HBM - Health Belief Model

HIRS - Hatta Islamic Religiosity Scale
 HIV - Human Immunodeficiency Virus
 HSC - Health and Safety Commission
 HSE - Health, Safety and Environment

HSE - Health Safety Executive

HSEMS - Health, Safety and Environment Management System

IAEA - International Atomic Energy Agency

IBS - Islamic Based Safety

I-CVI - Item-Level Content Validity Index

IFI - Incremental Fit Index

ILO - The International Labour OrganisationINSAG - International Nuclear Safety Advisory Group

KMO - Kaiser-Meyer-Olkin

MARS - Muslim Attitudes toward Religion Scale

NFI - Normed Fit Index NNFI - Non-normed Fit Index

NOSAQ - Nordic Occupational Safety Climate Questionnaire

OCB - Organizational Citizenship Behavior

OGP - Offshore Gas Producers

OSH - Occupational Safety and Health

OSH-MP - Occupational Safety and Health Master Plan For Malaysia
OSHMS - Occupational Safety and Health Management System

PBUH - Peace Be Upon Him

PHD - Doctor of Philosophy

PMT - Protection Motivation Theory

R - Religiosity

RCI - Religious Commitment Inventory

RMSEA - Root-Mean-Square Error of Approximation RSSY - Religiosity and Spirituality Scale for Youth

SA - Safety Attitude
SB - Safety Behavior
SCM - Swiss Cheese Model
SCT - Social Cognitive Theory

S-CVI - Scale-Level Content Validity Index

SEM - Structure Equation Modeling

SM - Safety Motivation SME - Subject Matter Expert

SOCSO - Social Security Organisation of Malaysia

TLI - Tucker-Lewis Index

TPB - Theory of Planned Behavior
TRA - Theory of Reasoned Action
TTM - Trans-Theoretical Model
U.A.E. - United Arab Emirates
UK - United Kingdom
US - United States

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CHAPTER 1

INTRODUCTION

1.1 Introduction

There are three disasters that happened in 1980s which are considered as the three world worst accidents. According to Kletz (2001), the first accident happened in India in 1984, when Union Carbide Bhopal, a chemical plant released toxic clouds of methyl isocynate killing over 2000 people. Two years later, the world witnessed the worst nuclear disaster in history, when Chernobyl nuclear plant exploded in 1986, killing 28 people instantly. Several thousand more were estimated to die from cancer as it spewed radioactive materials over Eastern Europe. In a different setting, in 1988, the Piper Alpha exploded in North Sea, killing 167 workers which is considered as the deadliest accident in offshore (Kletz, 2001). Although, many factors such as technical and system failures were attributed to these accidents, human factors which includes human behavior were considered as the root cause of these disasters (Gordon, 1998). Likewise, there are many factors which affect human behavior such as attitude, belief and perception.

The Theory of Planned Behavior predicts that humans make use of their beliefs, attitudes and available information before taking actions. They also consider the consequences of their behaviors before making decisions whether to do or not to do certain behaviors (Ajzen and Driver, 1992). Therefore, it is not an understatement to say that religious values and beliefs could also influence workers' behaviors in their workplace. In fact, there are a few studies which revealed that there is a link between religion and human behavior in the workplace. For example, religiosity is found to

influence Islamic work ethics of Muslim managers (Wisker and Rosinaite, 2016) and organizational behavior (Ramlee *et al.*, 2016). However, not much is known about how religion or religiosity could affect human safety behavior in the industry. Therefore, this study sought to find out if religiosity has any influence in workers' safe or unsafe behaviors in the workplace.

From the literature review as will be discussed in detail in chapter two, safety behavior is a favourite dependent variable in safety studies and a plethora of independent variables are studied for their influence on the safety behavior variable. However, there are only a few studies which studied the influence of religiosity and fatalism on safety behavior. Therefore, this study intends to fill this gap while at the same time it hopes to give a better understanding on how religiosities and fatalistic beliefs of Muslim workers in a Malaysian shipyard affect their safety behaviors in the workplace.

1.2 Problem Background

Many companies operating in high risks environment are constantly looking at reducing accidents and improving their safety performance. Nonetheless, efforts to improve are seen to focus more upon technological and management systems rather than human factors. Technology, machinery and tools do not offer complete solutions as there are still some accidents due to technological failures (Mansor *et al.*, 2011). Safety management systems are not effective if not properly managed by the people. Since the technology, the workplace processes, and the safety management systems are operated by human, their decisions, actions and inactions during working could affect the safety outcomes of their work. In other words, safety behavior is considered as one of the major causes of accidents (Gonzalez *et al.*, 2016).

In fact, a safety scientist, Heinrich claimed that 88% of the accidents are caused by unsafe behavior of the workers, while 10% are due to unsafe conditions (Manuele, 2014). Although Manuele (2014) argued that Heinrich's claim is not supportable, unsafe behavior still remains as one of the major factors attributable to accidents

(Salminen, 2013; Fam *et al.*, 2010; Neal and Griffin, 2006). Previous researchers have studied many factors affecting safety behavior such as safety climate (Tawaih and Adu, 2016); training (Mashi *et al.*, 2016); safety attitude (Zhou *et al.*, 2015); safety commitment (Salleh, 2010) but very few have looked through the lens of religion and fatalistic belief. Therefore, it is believed that a study on religiosity and fatalism will provide a new perspective on addressing a complex human-accident relationship.

At the same time, there seems to be a growing body of knowledge regarding studies exploring the influence of religiosity on human behavior. Researchers are taking greater interests now to find out if certain events or behaviors happening in our society, be they good or bad, have any connections with the levels of religiosities of the persons involved. Some examples of such behavior studies examined from a religiosity standpoint are: anti-social behavior (Fletcher and Kumar, 2014), job performance (Novia *et al.*, 2016), health behavior (Holt *et al.*, 2017), morality (Zubairu, 2017), and risky behavior such as seat-belt use (Hardy and Willoughby, 2017).

1.3 Problem Statement

According to Social Security Organization (SOCSO, 2018) of Malaysia, the industrial accidents reported had increased from 34,258 in 2015 to 35,304 in 2016. To reflect this alarming concern, a general problem statement such as "Accident rates in industry keep increasing," is not clear as there are many potential factors which need to be examined as to why accident rates increases. Therefore, a much clearer problem statement of "Unsafe behaviors keep happening, thus increases the accident rates," is adopted so that the researcher is well-guided and not thrown off course in tackling an unclear phenomenon. This is because an ill-defined problem could result in addressing the symptoms and not the root causes as inaccurate diagnosis of a problem could result in inaccurate and ineffective interventions. Furthermore, unsafe behavior is easier to measure and has many antecedents which could also be measured such as safety attitudes, safety motivation, religiosity, and fatalism.

Many accidents in high-risk industries have prompted many safety scholars in conducting various studies to understand the causes of such incidents. The Institute of Nuclear Power Operations in America investigated and found that accidents were mainly caused by human performance (52%) and design deficiencies (33%) (Reason, 1999). However, design deficiencies have improved steadily, using latest technologies and safety-enhanced designs. Therefore, most of the design concerns had been addressed accordingly. On the contrary, accidents or disasters continue to happen, despite, the most sophisticated technologies used. So, if technologies cannot reduce accidents, then what does? This question has been plaguing the safety scientist for decades, triggering immense studies on workplace safety. This has led to the studies of behavior of the workers and other underpinning factors that could have contributed to incidents and accidents. There is a vast body of knowledge on the studies of human error, human behavior, human attitude and human personalities conducted by scientists and psychologists in trying to understand the human attributing factors of the accident. This study of human safety behavior has been around for decades but solutions remain "scattered and scarce" (Salleh, 2010). Due to the unpredictable and vulnerable nature of human being, some of the solutions proposed may not be lasting. Therefore, there is a dire need of human solution to address the safety behaviors of the workers.

In a study conducted by Ahmad *et al.* (2014) on 135 students raised in Muslim families in the U.S., it was revealed that their involvement in the high-risk behavior are: 46.2% in alcohol, 24.6% in illicit drug use, 37.3% in tobacco use, 30.4% in gambling, and 53.8% in pre-marital sexual intercourse. It was also found that higher religiosity was significant in reducing the students' involvement in the high-risk behaviors. This is supported by another study conducted by Sinha *et al.* (2007) where a group of 2,004 teens were assessed on the influence of religiosity on ten risk behaviors. It was shown that religiosity was significantly and negatively related to six risk behaviors of smoking, alcohol use, truancy, sexual activity, marijuana use, and depression. The surveyed population is made up of Protestant Christian (48.2%), Roman Catholic (26.7%), Muslim (0.4%), and unknown affiliation (12%).

From the preceding studies, risky behaviors refer to behaviors which have the potential to be harmful or dangerous. Risky behaviors such as driving fast or engaging

in drugs or marijuana use, may give the thrill of a fast ride or a soothing sensation of a drug respectively. However, those behaviors may also lead to car accidents or overdoses, respectively. In other words, risky behavior may cause injuries, cancers, sexually transmitted diseases, or financial losses. On the contrary, safety behavior refers to behavior which could enhance the safety in the workplace or environment (Neil and Griffin, 2006).

These risky behavior studies reported that there exist relationships between religiosity and risky behaviors such as substance abuse, drinking alcohol and riding in a car without seat belts (Montgomery *et al.*, 2014; Mojahed, 2014; Watkins, 2013; Prassel, 2016; Ludema *et al.*, 2015; Lafarga, 2014; Fletcher and Kumar, 2014; Ahmed *et al.*, 2014). Further literature review revealed that there are limited studies on safety behavior and religiosity relationship compared to that of risky behavior and religiosity. The most probable reason for lack of research on religiosity in working environment is that researchers may think that religiosity variable is not relevant enough to influence behavior at workplace. Secondly, the thinking of most safety scientists, psychological researchers could be biased, and that religiosity is seen to relate to only personal lives and have nothing to do with working environment.

Despite the scarcity of relevant studies, literature managed to reveal a few studies on safety behavior and religiosity (Khan, 2007; Gyekye and Haybatollah, 2012; Koubenan, 1998; Peltzer and Renner, 2003). Studies conducted by Peltzer and Renner (2003) and Koubenan (1998) found that religiosity is linked to safety behavior but is not specific to Islamic religiosity. Study by Gyekye and Haybatollah (2012) was done on three Ghanaian religious groups of Christianity, Islam, and Traditional African Religion. The result found is consistent with the findings of Peltzer and Renner (2003) and Koubenan (1998).

In another study conducted by Khan (2007), a positive link between religiosity and safety behavior was revealed. However, only four out of 254 respondents were muslims. Given the lack of safety behavior and religiosity studies, it can be said that little attention has been given to explore the link of religiosity and safety behavior in the work place and therefore exposing the gap of knowledge in this religiosity and safety behavior area of research. Study by Khan (2007) examined the general

religiosity irrespective of their religious affiliations. From the above studies, none of them specifically used Islamic religiosity instruments to measure Islamic religiosity. Therefore, the attempt by this research to use a specific Islamic religiosity instrument in measuring Islamic religiosity of Muslim workers in Malaysia could contribute to this gap of knowledge and could be considered as a novel study.

Another variable which deserves consideration is safety motivation which refers to the driving force which spurs people to perform safe behavior. Therefore, unsafe behavior could result from the lack of driving force to perform safe behavior. For instance, recognition or reward from management could drive a person to perform safe behavior (Braithwaite, 2011). On the contrary, Shehab (2016) claims that Muslims derive their motivation to work more from the spiritual source than from the material reward. However, there are poor evidences regarding safety motivation, religiosity and safety behavior relationships. Therefore, the researcher hopes that this study would be able to trigger the interest of other religious scholars, psychologists and safety scientists to use Islamic religiosity, safety motivation and safety behavior variables more rigorously in future safety studies to fill up this gap.

1.4 Purpose of the Study

The primary problem diagnosed in section 1.3 leads to the aim of this study, which is to reduce the accidents in the high-risk industry. However, the aim should be started by understanding the factors that can cause accidents and the magnitude of their influence. Safety behavior, which has been used in previous research is also selected for this study, together with religiosity and fatalism as the antecedents. This study seeks to understand the effect of religiosity (Islamic) and fatalism (fatalistic belief) on working behavior which is yet to be fully explored. The purpose of this study is to explore if there is an influence of religiosity (Islamic) and fatalistic belief on the safety behavior of the Muslim shipyard workers in Malaysia.

1.5 Research Questions

To examine the effects of Islamic religiosity and fatalism on occupational safety behavior of Muslim shipyard workers in Malaysian shipyard, this study attempted to answer the following five research questions:

- Q1: Does the Islamic religiosity affect fatalism of Muslim shipyard workers in Malaysia?
- Q2: What are the effects of Islamic religiosity and fatalism on the safety behavior of Muslim shipyard workers in Malaysia?
- Q3: What are the effects of Islamic religiosity and fatalism on the safety motivation of Muslim shipyard workers in Malaysia?
- Q4: What are the effects of Islamic religiosity and fatalism on the safety attitude of Muslim shipyard workers in Malaysia?
- Q5: What are the mediators for the Islamic religiosity and safety behavior relationship of Muslim shipyard workers in Malaysia?

1.6 Research Objectives

This study sought to examine the factors of Islamic religiosity, fatalism, motivation, attitude and intention on safety behavior by addressing the following objectives:

- 1. To develop a valid and reliable instrument to measure the safety behavior, Islamic religiosity and fatalism of Muslim workers.
- 2. To develop and test a conceptual framework containing variables of Islamic religiosity, fatalism, safety attitude, safety motivation, and safety behavior

- 3. To determine the level of safety behavior, Islamic religiosity and fatalism of Muslim shipyard workers in Malaysia.
- 4. To investigate the relationships between the safety behavior as dependent variable and Islamic religiosity, fatalism, safety motivation, and safety attitude as independent variables and the relationships of the mediators (fatalism, safety attitude, and safety motivation) upon the influence of Islamic religiosity on safety behavior relationship and to model these relationships in the Structural Equation Modeling software.
- 5. To propose possible interventional measures based on Islamic religiosity and fatalism influence on the safety behavior of Muslim workers.

1.7 Research Hypotheses

To test the research questions stated above, the following hypotheses were developed to determine the relationships between the variables:

Q1: Does the Islamic religiosity affect fatalism of Muslim shipyard workers in Malaysia?

1. Hypothesis H1: Workers' Islamic religiosity has a negative relationship with fatalism.

Q2: What are the effects of Islamic religiosity and fatalism on the safety behavior of Muslim shippard workers in Malaysia?

Specifically:

- 2. Hypothesis H2a: Workers' Islamic religiosity has a positive relationship with safety behavior.
- 3. Hypothesis H2b: Workers' fatalism has a negative relationship with safety behavior.

Q3: What are the effects of Islamic religiosity and fatalism on the safety motivation of Muslim shipyard workers in Malaysia?

Specifically:

- 4. Hypothesis H3a: Workers' Islamic religiosity has a positive relationship with safety motivation.
- 5. Hypothesis H3b: Workers' fatalism has a negative relationship with safety motivation.

Q4: What are the effects of Islamic religiosity and fatalism on the safety attitude of Muslim shipyard workers in Malaysia?

Specifically:

- 6. Hypothesis H4a: Workers' Islamic religiosity has a positive relationship with safety attitude.
- 7. Hypothesis H4b: Workers' fatalism has a negative relationship with safety attitude.

Q5: What are the mediators for the Islamic religiosity and safety behavior relationship of Muslim shipyard workers in Malaysia?

Specifically:

- 8. Hypothesis HM1: Workers' safety motivation mediates the relationship between religiosity and safety behavior.
- 9. Hypothesis HM2: Workers' safety attitude mediates the relationship between religiosity and safety behavior.
- 10. Hypothesis HM3: Workers' fatalism mediates the relationship between religiosity and safety behavior.

1.8 Significance of the Study

One of the safety performance indicators for developed countries such as the United States of America, Japan and the United Kingdom is to maintain their accident rates to acceptable levels. A decreasing rate of accidents signifies that a country is improving as it is having less accidents than the year before. For instance, in 2000, the frequency rate of occupational accidents for Malaysia is 11.0 accidents per 1000 workers and has dropped to 6.1 accidents per 1000 workers in 2007. Promisingly, this downward trend continued until the end of 2013, where the rate of accidents was reduced to 3.28 per 1,000 workers from 3.31 per workers in 2012 ("DOSH Brings 350 Cases to Court", 2014). However, as of August 8, 2017, there has been an increase in workplace accident of 0.07% compared to that of 2016 (Kili, 2017). This should be a cause of concern if Malaysia were to achieve its target of reduced rate of accidents of 2.53 per 1000 workers by 2020 as proposed in the Occupational Safety and Health master plan for 2016 to 2020, by the Malaysian government (Department of Occupational Safety and Health Malaysia [DOSH], 2016a).

Concurrently, increased rate of occurrence of accidents could also be equated to increased cost of accidents whereby Social Security Organization of Malaysia (SOCSO) has incurred an increased payment of RM 136 million in 2012 from RM 63,000,000 in 2002 for those with temporary disablement; RM 364 million in 2012 from RM 167 million in 2002 for those with permanent disablement; and RM 216 million in 2012 from RM 103 million in 2002 for dependents' benefit in 2012 (Aziz Mohammed, 2013). With increasing workforce, the fatality rate and the cost of accidents should be checked and addressed accordingly. Since Islamic religiosity instrument is not appropriate for non-Muslims and that western religiosity instrument is not appropriate for Muslim, therefore, the study would focus on the Muslim workforce. Future studies could therefore consider developing a common instrument acceptable to all religions in Malaysia.

In a study conducted by Ahmad, Abu-Ras, and Arfken (2014) on 135 students raised in Muslim families in the U.S., it was revealed that their involvement in the high-risk behavior are: 46.2% in alcohol, 24.6% in illicit drug use, 37.3% in tobacco use, 30.4% in gambling, and 53.8% in pre-marital sexual intercourse. It was also found

that higher religiosity was significant in reducing the students' involvement in the high-risk behaviors. This is supported by another study conducted by Sinha *et al.* (2007) where a group of 2,004 teens were assessed on the influence of religiosity on ten risk behaviors. It was shown that religiosity was significantly and negatively related to six risk behaviors of smoking, alcohol use, truancy, sexual activity, marijuana use, and depression. The surveyed population is made up of Protestant Christian (48.2%), Roman Catholic (26.7%), Muslim (0.4%), and unknown affiliation (12%). Although both studies revealed negative link between religiosity and risk behavior, it was still claimed by both scholars, Ahmad, Abu-Ras, and Arfken (2014) and Sinha *et al.* (2007) that religiosity studies on Muslims' risk behavior and national teenagers' risk behavior are rather limited.

According to the latest poll study by Pew Research Center (2015), the Muslim population of Malaysia will increase from 63.7 per cent in 2010 to 72.4 per cent in 2050. This means that there will be over 32.7 million Muslims out of the projected 45.2 million population in 2050, compared to around 18 million out of 28.4 million in 2010. With the fastest growing rate in the world, Muslims are expected to increase by 73 % and will almost equal to the number of Christians, 32 years from now (Pew Research Center, 2015). This projection of Muslims clearly demonstrates that Muslims would be the second biggest if not the biggest workforce in the world. Therefore, they deserve to be understood if workers performance and safety are to improve accordingly. Naturally, Islamic attributes such as religiosity and fatalism would be pertinent aspects in studying their working behavior, which this study sought to explore.

While in another poll conducted by WIN-Gallup International (2012), the religiosity index of the Malaysian has increased from 77% in 2005 to 81% in 2012. The Malaysian population are highly religious and therefore this study that sought to understand their religious beliefs is considered important in understanding the work ethic of Muslim workers.

Work ethic as defined by Miller and Coady (1989), refers to as one's reliability, trustworthiness, willingness, and responsibility in delivering his work functions. While, Islamic Work Ethic (IWE) as defined by Rizk (2008), refers to as a

view that work is a virtue in human life which includes Islamic expectations, followed by the attempt to work with cooperation, responsibility, social interactions, sacrifice, and creativity.

In a study by Muhamad, Yap, and Mohd Islam (2008), it was found that religious individuals were more committed to Islamic Work Ethics (IWE) compared to the less religious individuals. While, individuals with higher Islamic work ethics tend to work properly (Ahmad, Rofie, and Owoyemi, 2013) and perform their job better (Novia *et al.*, 2016). In another study, Abdullah and Halim (2016) revealed that individuals with low work ethic tend to engage in counterproductive work behavior, while those with high work ethic are not inclined to do so. The counterproductive work behavior refers to "dangerous" employees' behavior which can affect organizations or injure employees such as not following laws and procedures imposed by the organizations (Fox, Spector, and Miles, 2001). In other words, Islamic Work Ethic (IWE) can be considered important in enhancing safety behavior of the workers. Since Islamic religiosity also found to influence the Islamic Work Ethics of Muslim workers, therefore, it is expected that Islamic religiosity could in turn contribute to enhancement in safe behavior.

Therefore, it is of paramount importance that workers behavior in high risk industries in Malaysia be understood from religious perspective as well, to enhance the safety performance further. Once the influence of factors such as religiosity and fatalistic belief are known, the companies or the government could embark on appropriate intervention programs to reduce the accidents in this industry.

1.9. Definitions of Operational Terms

This study focuses on a cluster of safety related concepts, religiosity and fatalism related elements gathered from the literature. These concepts of safety behavior and its influencing factors of religiosity, fatalism, safety motivation, safety attitude, safety intention will be discussed at length in the next chapter. For this study, these concepts and related terminologies are defined as below.

Safety:

Safety is defined as a condition where nothing goes wrong (injuries, accidents/incidents/near misses) or more cautiously as a condition where the number of things that go wrong is acceptably small (Hollnagel, 2014).

Risk:

Combination of the probability of occurrence of harm and the severity of that harm (The Institution of Engineering and Technology, 2017).

Hazard:

A potential source of harm (The Institution of Engineering and Technology, 2017).

Incident:

An unplanned, unexpected event which has the potential to lead to an accident although may not do so (The Institution of Engineering and Technology, 2017).

Accident:

An incident which results in death, injury loss, or damage (The Institution of Engineering and Technology, 2017).

Injury:

Injury is regarded as physical harm or damage to a person resulting from traumatic contact between the body of the person and an outside agency, or from exposure to environmental factors (Oil and Gas Producers - OGP, 1999).

Workplace:

The workplace may be described as any place where people are at work (The Institution of Engineering and Technology, 2017).

Safety Motivation:

Neal, Griffin, and Hart (2000) refers safety motivation as "the motivation to perform safety behaviors."

Safety Attitude:

Safety attitudes is defined as the opinions and feelings of a person about policies, regulations and practices of safety (Neal and Griffin, 2004; Rundmo and Hale, 2003).

Safety Behavior:

Neil and Griffin (2006) defined safety behavior as behavior needed to enhance the safety at the workplace and behavior that does not have direct influence on the worker safety but assists in nurturing environment that enhance safety.

Religiosity:

In Islam, however, Mokhlis (2006) defined religiosity as the intensity of beliefs in distinct religious values and ideologies which are of interest to a person and translated into actions.

Fatalism:

According to Hazen and Ehiri (2006), fatalism refers to the way in which people regard the events that occur in their lives and is expressed as a belief that an individual does not have personal control over the events and that their lives are determined through a divine or powerful external agency.

1.10 Summary

This study which was conducted on shipyard workers in Malaysia, sought to understand the effect of Muslim workers' level of religiosity and fatalism (fatalistic belief) on their working behavior as not much is known about Islamic religiosity and safety in the workplace. Five research questions, five objectives and ten hypotheses are identified based on the five variables of this study. The five variables of this study are: safety behavior (dependent variable) and four independent variables consisting of religiosity, fatalism, safety attitude and safety motivation.

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