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**SAFETY MANAGEMENT PRACTICES AND SAFETY COMPLIANCE
AMONG CONSTRUCTION WORKERS IN KLANG VALLEY**

By

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**Thesis Submitted to
School of Business Management
College of Business, Universiti Utara Malaysia,
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Master of Sciences (Occupational Safety and Health Management)**



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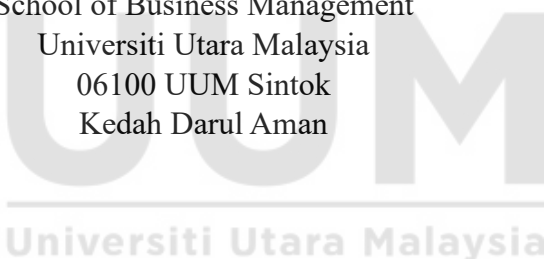
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ABSTRACT

In recent years, unsafe actions have emerged as a leading cause of injuries and accidents among construction workers in Klang Valley where they impact the company's reputation and individuals themselves. This study aims to determine the correlation between safety management practices and safety compliance among construction workers in Klang Valley. In this dissertation/project paper, a quantitative method is employed, utilizing a questionnaire adapted from the previous researcher. A total of 190 construction workers related to this sector participated in responding to the questionnaire. This study employed descriptive statistics for data analysis through IBM SPSS Statistics Version 27. Out of all the dimensions in safety management practices, worker involvement has a significant relationship with construction workers' safety compliance. Meanwhile, the remaining dimensions did not show a significant association with safety compliance among workers such as management commitment, safety training, safety communication and feedback, safety rules and procedures, and safety promotion policies. The findings of this study may guide the management of the construction companies in Klang Valley in improving the safety compliance of the employees in the future.

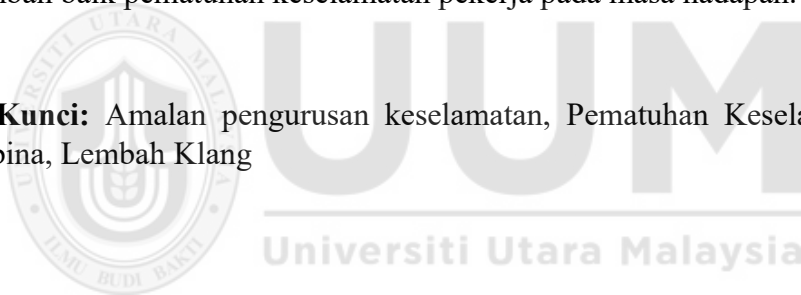
Keywords: Safety Management Practices, Safety Compliance, Construction workers, Klang Valley



ABSTRAK

Sejak beberapa tahun kebelakangan ini, kelakuan tidak selamat di kalangan pekerja di tapak bina merupakan antara punca berlakunya kemalangan di tempat kerja di mana ia memberi kesan terhadap syarikat dan individu itu sendiri. Kajian ini bertujuan untuk menentukan hubungan antara amalan pengurusan keselamatan dan pematuhan keselamatan dalam kalangan pekerja tapak bina di Lembah Klang. Kajian ini telah dijalankan secara kuantitatif menggunakan soal selidik yang diadaptasi daripada kajian sebelumnya. Seramai 190 pekerja tapak bina yang terlibat dalam industry ini menjawab soal selidik. Untuk kajian ini, data dianalisis menggunakan kaedah statistik deskriptif melalui Statistik SPSS IBM Versi 27. Daripada semua dimensi dalam amalan pengurusan keselamatan, penglibatan pekerja mempunyai hubungan yang signifikan dengan pematuhan keselamatan di kalangan pekerja tapak bina. Sementara itu, dimensi yang tidak mempunyai hubungan yang signifikan dengan pematuhan keselamatan dalam kalangan pekerja tapak bina ialah komitmen pengurusan, latihan keselamatan, maklumbalas dan komunikasi keselamatan, peraturan dan prosedur keselamatan, dan dasar promosi keselamatan. Dapatan dari kajian ini boleh menjadi panduan kepada pihak pengurusan syarikat pembinaan di Lembah Klang dalam menambah baik pematuhan keselamatan pekerja pada masa hadapan.

Kata Kunci: Amalan pengurusan keselamatan, Pematuhan Keselamatan, Pekerja tapak bina, Lembah Klang



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LIST OF ABBREVIATIONS

GDP	Gross Domestic Product
DOSH	Department of Occupational Safety and Health
SOCSSO	Social Security Organisation
OSHA	Occupational Safety and Health
CIDB	Construction Industry Development Board
WHO	World Health Organisation
DV	Dependent Variable
IV	Independent Variable
SPSS	Statistical Package for Social Sciences
SD	Standard Deviation
SCT	Social Cognitive Theory



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CHAPTER 1

INTRODUCTION

In this chapter, the study's background is outlined, the problem statement is addressed, and the research questions and objectives are presented. The scope of the study elucidates key terms and offers a comprehensive summary. It offers a comprehensive perspective on the correlation between management practices and safety compliance among the construction workers of the Klang Valley, Malaysia.

1.1 Background of Study

The background of the study delves into the context of safety management practices and safety compliance among the construction workers in the Klang Valley, considering pertinent variables. This bustling region in Malaysia is marked by a vibrant construction industry (Ibrahim et al., 2010) essential for its economic growth but fraught with safety challenges. In this context, the focus on preventing occupational accidents has transitioned from human and technical errors to prioritizing employee safety through management practices (Alingh et al., 2018), with safety management practices playing a pivotal role in intervening in the accident prevention process (Anderson & Chun, 2014).

Safety management practices encompass a range of measures aimed at ensuring the safety and well-being of workers and mitigating risks associated with construction activities. These practices include management commitment, safety training, worker involvement, safety communication and feedback, safety rules and procedures, and safety promotion policies. Safety compliance behavior develops gradually,

originating from earlier actions until it becomes integrated into their behavioral patterns (Wu et al., 2016).

Research by Wong et al. (2023) emphasizes the importance of addressing challenges in safety management practices to enhance safety outcomes in construction projects. Fruhen et al. (2019, as cited in Ajmal et al., 2022), inquiries into significant industrial accidents have identified key factors that highlight the need for comprehensive strategies to improve safety management. These studies underscore the significance of understanding the interplay between safety management practices and safety compliance within the dynamic context of the construction sector in Klang Valley.

The construction industry in Malaysia is a cornerstone of economic advancement, significantly contributing to the national Gross Domestic Product. Report from *Trading Economics, Malaysia's GDP from Construction* stated that the data provided in Figure 1.1, in the quarter of 2023, the GDP from Malaysia's construction sector rose to 14,641 MYR Million, up from 13,759 MYR Million in the previous quarter.

Figure 1.1 Malaysia GDP by Construction Sector from Jan 2021 – Jul 2023



While catalyzing economic growth, the construction sector faces inherent challenges, especially concerning the occupational safety of its workforce. The paramount importance of preserving the safety and well-being of construction workers cannot be overstated as it is pivotal for maintaining a robust workforce and promoting sustainable development.

Despite the enactment of laws and regulations like the Occupational Safety and Health Act 1994 (OSHA) and the Construction Industry Development Board Act 1994 (CIDB), construction accident rates in Malaysia remain high (Wu et al., 2016).

The data released by the Department of Occupational Safety and Health (DOSH), presented in Table 1.1 indicates that Klang Valley (Selangor and Wilayah Persekutuan Kuala Lumpur) recorded the highest overall number of occupational accidents in Malaysia.

Table 1.1 Occupational Accident Statistic by State from Jan 2022 – Nov 2022

OCUPATIONAL ACCIDENT STATISTICS BY STATE JANUARY TO NOVEMBER 2022 (REPORTED TO DOSH ONLY)

STATE	NPD	PD	DEATH	TOTAL
JOHOR	1082	59	24	1165
KEDAH	396	3	7	406
KELANTAN	115	4	5	124
MELAKA	362	7	2	371
N SEMBILAN	382	13	6	401
PAHANG	366	9	19	394
PERAK	747	26	20	793
PERLIS	12	0	2	14
PULAU PINANG	695	15	13	723
SABAH	227	22	9	258
SARAWAK	290	26	20	336
SELANGOR	1301	38	29	1368
TERENGGANU	135	3	11	149
WPKL	188	1	19	208
WP LABUAN	8	1	0	9
TOTAL	6306	227	186	6719

LEGEND:

PD - PERMANENT DISABILITY

NPD- NON PERMANENT DISABILITY

Source: International Policy and Research Development Division

From the accident statistics by state recorded by DOSH in table 1.1 above, table 1.2 below shows the statistics by sector recorded the same duration as above.

Table 1.2 Occupational Accident Statistic by Sector from Jan 2022 – Nov 2022

OCCUPATIONAL ACCIDENT STATISTICS BY SECTOR JANUARY TO NOVEMBER 2022 (REPORTED TO DOSH ONLY)

SECTOR	NPD	PD	DEATH	TOTAL
Hotel and Restaurant	118	1	0	119
Utilities (Electricity, Gas, Water and Sanitary Service)	178	2	9	189
Finance, Insurance, Real Estate and Business Services	345	4	24	373
Construction	87	2	59	148
Transport, Storage and Communication	234	4	10	248
Manufacturing	4273	183	58	4514
Wholesale and Retail Trade	114	3	2	119
Public Services and Statutory Authorities	74	3	0	77
Mining and Quarrying	27	2	8	37
Agriculture, Forestry and Fishery	856	23	16	895
TOTAL	6306	227	186	6719

LEGEND:
PD - PERMANENT DISABILITY
NPD- NON PERMANENT DISABILITY

Source: International Policy and Research Development Division

From the table above, it is apparent that the construction sector ranks as one of the contributors to accidents in the workplace in Malaysia (Ayob et al., 2018). Despite concerted efforts aimed at improving safety within the construction industry, incidents of accidents and fatalities persist, emphasizing a necessity for a deeper understanding of the challenges and deficiencies within existing safety protocols (Chan et al., 2023). This study aims to fill this void by conducting a thorough investigation into construction safety practices in Malaysia. The objective of the study is to highlight the safety management practices and safety compliance among construction workers in Klang Valley.

1.2 Problem Statement

According to Mohammad and Hadikusumo (2017) workplace fatality rates within the construction industry surpass those observed in other sectors. Jaafar et al. (2017) despite being among the top three major economic sectors, the construction industry has a significantly high fatality rate, primarily attributed to the inherent hazards associated with construction activities.

According to Malaymail (2022) in 2021, a cumulative compensation of RM1.4 billion was disbursed by the Social Security Organisation (SOCSO) for industrial accidents spanning various industries, encompassing both local and foreign workers. As of 2021, interim data from SOCSO, there were 61,447 total recorded cases of accident, with 36,794 categorized as industrial accidents, leading to almost 700 fatalities. The construction sector experienced a particularly high number of fatal accidents (Malaymail, 2022).

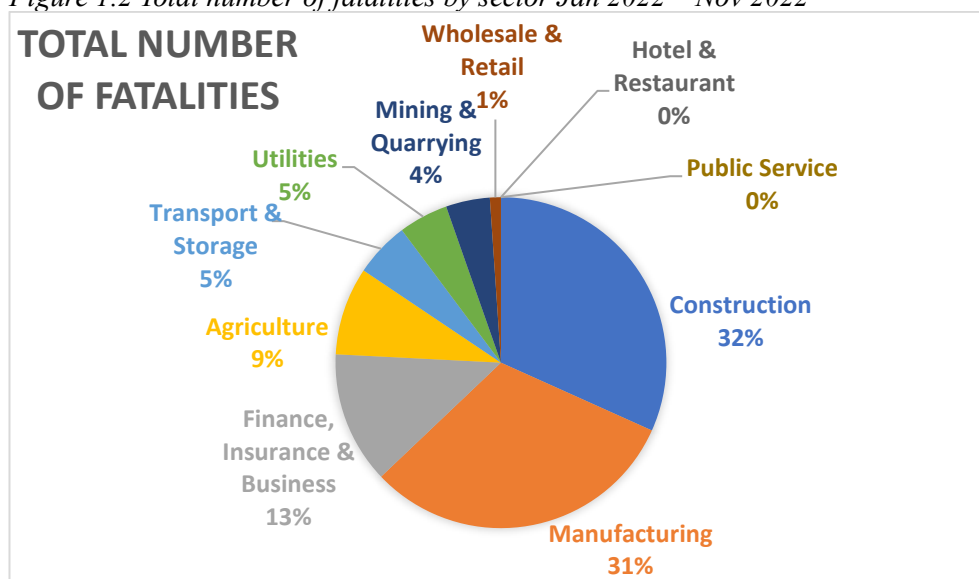
Awwad et al., (2016, as cited in Halim et al., 2017), stated that the primary factors contributing to the high rates of injuries and fatalities include poor management practices. Accidents stem from various sources, spanning both individual and organizational levels. At the individual level, eight factors contribute to accidents, including experience, task duration, training and skill level, familiarity with regulations, risk perception, use of personal protective equipment, deviation from standard work procedures, and prior experience with accidents (Fass et al., 2017).

Accidents do not arise spontaneously; rather, they are often precipitated by specific factors (Halim et al., 2020). Typically, accidents on construction sites often stem

from a combination of factors including inadequate knowledge or training, lack of top-down oversight, and individual negligence, with unsafe behavior emerging as the primary driver, indicative of insufficient safety practices (Hamid et al., 2019). Halim et al. (2020) stated that the majority of accidents stem from human actions. Consequently, to mitigate the occurrence of accidents and enhance safety, attention must be directed towards addressing unsafe behavior at the construction site.

Figure 1.2 sourced from the DOSH, presents detailed statistics categorized by sector, revealing in 2022, the construction industry has shown the highest number of fatalities with 32% compared to other sectors. This statistical data underscores a concerning trend, indicating that the safety management practices currently implemented by construction companies are still inadequately adapted to ensure workplace safety (Chan et al., 2023b). Consequently, this deficiency in safety measures has resulted in the construction industry experiencing the largest number of fatalities across all industries in Malaysia.

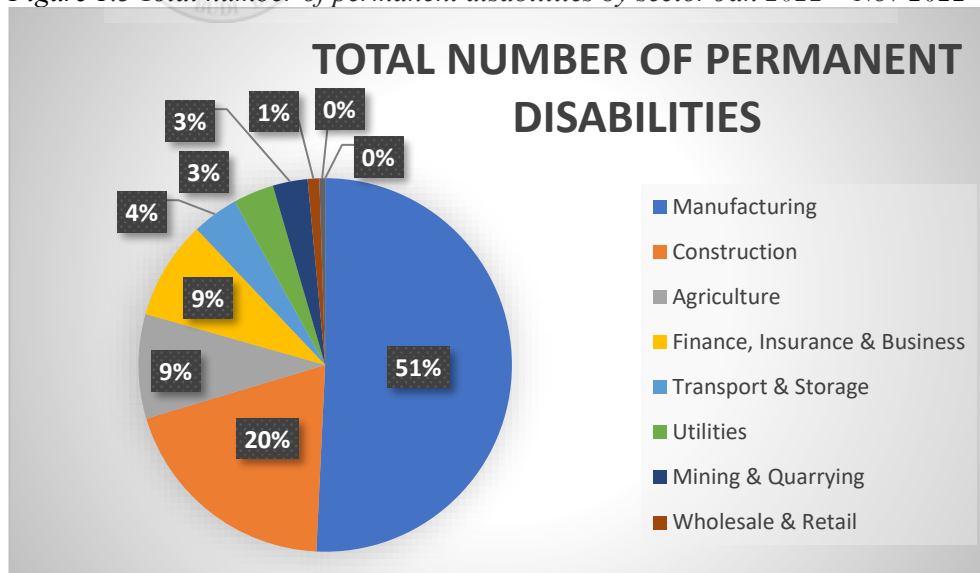
Figure 1.2 Total number of fatalities by sector Jan 2022 – Nov 2022



The extended consequences of accidents including temporary and lasting impairments leading to sick leave, rehabilitation and disability remain insufficiently understood (Lund & Bjerkedal, 2001). According to the World Health Organization WHO (as cited in Lund et al., 2001), rehabilitation involves restoring bodily structure or physiological and psychological functions to their normal state, while disability is defined as restricted activity.

Figure 1.3 shows that the construction sector in Malaysia recorded the second highest number of permanent disabilities due to workplace accidents at 20% and the manufacturing sector recorded 51% of permanent disabilities due to workplace accidents. Permanent disabilities constitute job loss and can lead workers to lose motivation to sustain their daily routine life due to both physical and psychological hardships.

Figure 1.3 Total number of permanent disabilities by sector Jan 2022 – Nov 2022



Based on observation of the past two years of workplace accidents in the construction industry it appears that safety is not prioritized by management or

employees. As a result, the example from a past recent accident published by the newspaper The Star (January 2023) “Construction worker dies after 70 meters fall” shows that management lacked safety measures at the construction site. This underscores the crucial significance of management practices in ensuring safety at construction sites. DOSH instructs that all employers are responsible for identifying hazards, making risk assessments, and conducting safety training before employees carry out work. Additionally, the main objective aims to explore the safety management practices and the safety compliance of construction workers in Klang Valley. It will investigate how the management addresses all these practices in their organization. The emphasis focuses on how safety practices influence safety compliance of employees.

In summary, this study seeks to examine safety management practices and safety compliance among construction workers in Klang Valley. It analyses six key independent variables: management commitment, safety training, worker involvement, safety communication, safety rules and procedures and safety promotion policies.

1.3 Research Questions

- i. What is the level of management practices being practiced within the construction site in Klang Valley?
- ii. What is the level of safety compliance among construction workers in Klang Valley?
- iii. Is there any correlation between safety management practices and safety compliance among construction workers in Klang Valley?

1.4 Research Objectives

- i. To determine the level of safety management practices among construction workers in Klang Valley
- ii. To determine the level of safety compliance among construction workers in Klang Valley
- iii. To analyze the correlation between safety management practices and safety compliance among construction workers in Klang Valley

1.5 Scope of Study

The scope of this study encompasses the examination of safety management practices and safety compliance among construction workers in Klang Valley. The unit of analysis comprises individual workers employed within construction companies operating in this area. Variables investigated include management commitment, safety training, worker involvement, safety communication and feedback, safety rules and procedures, safety promotion policies and safety compliance. A data collection method using a self-completion survey through Google Forms was used to gather all the information required.

1.6 Significant of Study

The goal is to identify the safety management practices and safety compliance among construction workers in several construction sites in Klang Valley. The findings will guide the management of the construction site organization to implement and improve the current safety management practices that will directly lead to establishing a safe environment.

1.7 Definition of Terms

1.7.1 Safety Management Practices

Safety management practices not only enhance the quality of working conditions but also exert a positive impact on employees' attitudes and behaviors concerning safety, consequently leading to a reduction in workplace accidents (Vinodkumar & Bhasi, 2010).

1.7.2 Management Commitment

In the construction industry, where hazards are prevalent, management commitment plays a significant role in preventing accidents and injuries. Organizations with strong management commitment experience lower accident rates and higher levels of employee engagement in safety practices (Zohar, 2002).

1.7.3 Safety Training

Safety training plays a vital role in educating employees about safety practices and compliance, thereby preventing accidents, and implementing effective controls (Cooper, 2000).

1.7.4 Worker Involvement

Characterized as a behavior-oriented approach that engages individuals or groups involved in the upward flow of communication and the process of making decisions within an organizational setting (Vredenburg, 2002)

1.7.5 Safety Communication

Entails the exchange of information among two or more individuals concerning safety-related matters (Siu et al., 2004). Safety communication methods not only improve working conditions but also positively influence employees' behaviors and attitudes toward safety, ultimately resulting in fewer incidents in the workplace environment (Naji et al., 2022).

1.7.6 Safety Rules and Procedures

Relate to the degree of a corporate entity defines its mission, duties, and objectives. It involves establishing employee conduct guidelines and implementing a safety system aimed at addressing and rectifying workers' safety behavior (Lu & Yang, 2011).

1.7.7 Safety Promotion Policies

Systems that are designed to establish and uphold conditions essential for achieving and maintaining an optimal level of safety. The enactment of safety promotion policies not only demonstrates management's commitment to safety but also indicates a proactive stance towards safety (Subramaniam et al., 2016).

1.7.8 Safety Compliance Behavior

The observable actions or conduct that an individual has exhibited in connection with other individuals and the surrounding world (Noor Adi et al., 2021). It involves actions undertaken by individuals within the organizational context to ensure protection He et al., (2019, as cited in Noor Adi et al., 2021).

1.7.9 Safety Compliance

It involves conforming to the safety regulations established by regulatory bodies and legislators. The goal is to safeguard workers, the public, property, and the environment by addressing various workplace hazards (Mishra, 2022).

1.7.10 Construction Industry

The construction industry encompasses activities involved in the creation, repair, renovation, and maintenance of structures or infrastructures within the manufacturing and trade sectors significantly impacting the country's technological progress and sustainability (Hussain et al., 2022).

1.8 Organization of Thesis

This section furnishes a summary of the study's development and context of safety compliance among construction workers. This chapter also offers the reader insight into the study's rationale, research goals, and objectives. The information has been sourced from many articles, journals, and reports.

Chapter 2 delves into the literature review, emphasizing key safety management for promoting safety compliance. This section incorporates perspectives drawn from the literature review and delineates a rationale behind the present study.

The subsequent chapter addressed the study's design and methodologies employed. The sampling technique is a randomized selection. This chapter detailed the sample selection process, data collection procedures, and the measurement of variables.

Chapter 4 presents details regarding the data analysis. The results were further analyzed to provide a more comprehensive understanding.

Chapter 5 offers an overview and conclusion of the findings in this chapter. Finally, in this chapter, the limitations, implications, and suggestions are addressed and could guide future research.



CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter emphasizes relevant prior studies on safety management practices and safety compliance. All this literature review will be as a guide for this research. This chapter will additionally incorporate the hypothesis development and theories related. This study will focus on the construction workers in Klang Valley.

2.2 Conceptualization of the Variables

2.2.1 Safety Compliance Behavior

Defined as all observable and measurable actions undertaken by an individual (Vijayakumar, 2007). Results obtained from a conducted study by S. Fugas et al. (2012) indicated that safety-oriented compliance is significantly influenced by the formal systems implemented by the organization. Based on Johnson (2003, as cited in Zin & Ismail, 2012), promoting safety compliance is crucial for minimizing workplace injuries and influencing events leading to injuries or accidents before they occur.

Adhering to safety compliance is an obligatory and fundamental safety that employees must engage in to uphold workplace safety Griffin and Neal (2000, as cited in Zhao & Yan, 2023). Safety compliance is assessed on a spectrum ranging from good to poor with those meeting safety requirements considered to have good safety compliance, while those not adhering to safety requirements are categorized as exhibiting inadequate adherence to safety protocols. Frederick (1982, as cited in Zin et al., 2012), formulated

the ABC model, which clarifies behavior is influenced by two separate elements: triggers and outcomes.

Numerous studies view safety compliance behavior as a constructive response that individuals adopt when they genuinely perceive a threat, helping to mitigate the impact of the danger. Nevertheless, such behavior may also serve to evade perceived threats more than actual dangers, often being unnecessary and contributing to the maintenance of anxiety toward certain stimuli.

2.2.2 Safety Management Practices

Involves practical execution, responsibilities, and tasks associated with upholding safety measures Kirwan (1998, as cited in Mearns, Whitaker, Flin, 2003). Improving safety management practices not only improves working conditions but also fosters positive attitudes and compliance among employees toward safety, leading to a decrease in workplace accidents (Vinodkumar & Bhasi, 2010).

Labodova (2004, as cited in Vinodkumar & Bhasi 2010), means that the practices, often referred to as the initial system within an organization, constitute a series of practices associated with employee safety and act as the fundamental components of a safety management system; these methodologies are implemented and planned through effective safety planning to control workplace hazards and safeguard employee health and safety.

According to Barlow & Iverson (2005), safety management practices encompass the organization's workforce are safeguarded through the establishment of guidelines and procedures aimed at ensuring the safety, health, and welfare of the workers. Analyzing the formal safety management system or audit typically involves analyzing the paperwork but this approach provides limited insight into accessing the system's implementation in practical settings (Mearns et al., 2003) while such an examination delineates the measures an organization outlines measures to safeguard workers, the public, and the environment, it does not disclose the actual incidents that occur at the worksite, nor does it confirm the assessment determines whether individuals and the environment are effectively safeguarded and if adverse events are being averted.

2.2.3 Management Commitment

The commitment of the company makes a crucial contribution to safety performance, ultimately shaping safety compliance behavior (Setyawan et al., 2021). According to Hofmann et al. (1995, as cited in Vinodkumar et al. 2010), the commitment of management to safety should manifest in observable actions, evident in both their behavior and verbal expressions. Mills and Lin (2014), the company's size significantly influences the OSH performance.

Based on Deming (1986, as cited in Vinodkumar et al., 2005), states that the top management is significantly responsible for safety issues as they oversee resource allocation, establish work methods, formulate policies, and handle various related aspects. Due to these considerations, each management team should bear sole responsibility for the outcomes they support Sznaider (1998, as cited in Vinodkumar et al., 2005).

An investigation carried out by Nishigaki (1994, as cited in Mills & Lin (2004), found that the construction injuries that occurred were due to ‘humanware’ which the responsible for a significant portion of the root causes contributing to the recurrence of occupational accidents. ‘Humanware’ is categorized as a function that results from the interaction between leadership and fellowship.

2.2.4 Safety Training

Aims to provide workers accompanied by the necessary information, skills, and competency to recognize and adhere to sound health and safety practices within a closely monitored setting Barbara (as cited in Ramasamy, 2020). According to Copper (2000, as cited in Razali et al., 2018), safety training is crucial for educating workers on safety practices and ensuring compliance which will control and prevent accidents.

Based on the previous study carried out by McDonald & Hrymak (n.d.) a limited number of sites indicated having a formalized safety training program for their workers, and safety training was generally overlooked during the recruitment of personnel. Their result showed that the inadequate availability of safety training is a cause for concern, particularly noteworthy is that 25% of the sample has less than one year with varying levels of experience in the construction sector, while 50% have a period of experience totaling less than two years. Thus, their degree of familiarity varies with job-related risks and effective management strategies may be limited.

Effective training for workers should incorporate hands-on experiences, utilizing senses beyond listening (Mohana Priya et al., 2021). Thus, regular assessments by the proprietor or contractor of the industry are essential to ensure that trained workers are applying the required skills and knowledge effectively.

2.2.5 Worker Involvement

Empowering workers through participation in safety committees was a cornerstone of the organization's safety performance, highlighting the significance of involving employees in the safety management process Ford and Tetrick (2011, as cited in Razali et al., 2018).

Masso (2015, as cited in Zulkifle, Hanafi 2018), worker denotes the extent to which employees can impact and manage occupational health and safety issues within the workplace. Based on Vinodkumar & Bhasi (2010), this involvement will empower workers grants endowed with authority, responsibility, and accountability for critical decisions, ensuring active involvement in establishing goals and objectives, both employees and management share responsibility and accountability. This motivates individuals and teams to deliver their utmost effort while also allowing managers to focus on planning, leading, and mentoring Cohen & Cleveland (1983, as cited in Vinodkumar et al., 2010).

Therefore, involving workers in safety practices is considered a managerial approach, evaluated through aspects like the representation of workers on safety committees, their participation in making safety-related decisions, contributing to recognizing safety issues,

and consulting with workers on safety matters, all of which are crucial (Vinodkumar et al., 2010).

2.2.6 Safety Communication

Communication aims to transmit information within the organization, ensuring that the recipient comprehensively understands the communicator's message, specifically the action to the organization anticipates taking (Noor Adi, Eliyana, Hamidah, 2021). Effective safety communication and feedback play a crucial role, especially in reporting issues, causes, challenges, accidents, and non-compliance Razali et al. (2018) and Vinodkumar et al. (2010) where a two-way communication channel between employees and management is essential, encouraging employees to provide feedback and comments for continuous safety improvements.

According to Dejoy et al. (2004, as cited in Amponsah-Tawaih and Appiah Adu 2016), effectiveness has been recognized as a predictor of workplace safety. As a result, from Zohar & Polachek (2014, as cited in Zara, Md Nordin, and Isha 2023), enhancing workplace safety involves fostering active communication to reduce accident rates. Additionally, it is inferred that unsafe safety compliance behavior, partly attributed to the organization's safety system, serves as a precursor to accidents and can be addressed through effective communication. Thus, safety communication assumes a critical role in recognizing and monitoring potential hazards before incidents occur (Noor Adi et al., 2021).

2.3 Previous Literature Review

2.3.1 Management Commitment and Safety Compliance

The relationship between management commitment and safety compliance is a critical aspect of fostering a positive safety culture within an organization. It is widely acknowledged that management commitment is vital for reducing workplace accidents (Vinodkumar et al., as cited in Subramaniam et al., 2016).

According to Yule, S., Flin, R., and Murdy (2006) when employees believe in the dedication to safety, they are inclined to prioritize safety, leading to a notable reduction in accident and injury rates.

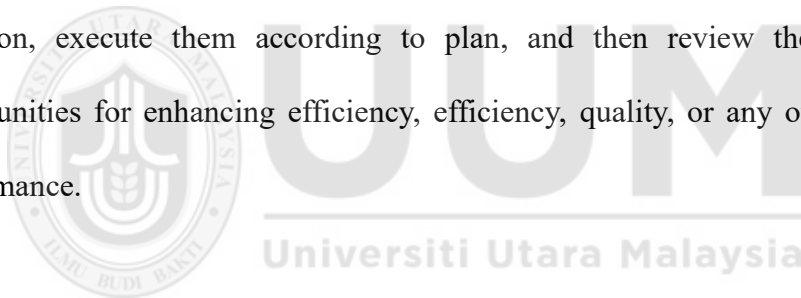
In summary, the relationship between management commitment and safety compliance is a two-way relationship and dynamic. A strong commitment from management sets the tone for a positive safety culture, influencing employee attitudes and actions. At the same time, the safety compliance of employees can influence and reinforce the commitment of management to safety, establishing a reciprocal cycle that improves workplace safety overall.

Therefore, by considering the findings and explanations presented in previous studies by Vinodkumar et al. (2010); Subramaniam et al. (2016); Razali et al. (2018) and Alfayez (2021) the hypothesis of this study can be formulated as in chapter 2.4.

2.3.2 Safety Training and Safety Compliance

Cooper & Philips (2004) say that multiple regression analysis indicated how safety training is perceived and reflective of actual safety compliance behavior levels. Ramasamy (2020) stated that this encompasses the task itself, along with training on the optimal utilization of fall protection equipment, for example, understanding scaffold usage and protocols for unexpected changes or accidents.

A procedure by Praveen, B. (2011, as cited in Ramasamy 2020), encourages employees to adopt a “Wait, Consider, Act and Review” approach for any actions they engage in. This method, when applied effectively, prompts each supervisor to assess tasks before initiation, execute them according to plan, and then review the task to identify opportunities for enhancing efficiency, efficiency, quality, or any other aspect of task performance.



2.3.3 Worker Involvement and Safety Compliance

Montague, J. (2019) states that within organizational safety management, the engagement of workers stands as a fundamental practice, playing a pivotal role in attaining the company’s goals concerning occupational safety and health. A previous study investigated worker involvement to assess both unsafe safety compliance behavior and the frequencies of occupational accidents (Armstrong, P.A, 2007), and outcomes indicated that increased participation in safety initiatives correlated with a higher likelihood of suggesting safety improvements and reduction in occupational accidents.

Shanon et al. (1996) actively engaging employees in the strategic safety decision of the organization has been shown to decrease lost-time frequency rates (LTFR). The previous examination done regards to workers' involvement aimed to reduce the occurrence of unsafe practices and harm within the company (Camuffo, De Stefano & Paolino, 2015; Rooney, 1992 as cited in Mashi, Subramaniam & Johari, 2016)

2.3.4 Safety Communication and Safety Compliance

Ensuring the well-being of workers is essential for every organization operating in high-risk environments. Safety communication's significance and connection to workplace safety are acknowledged throughout various sectors and nations (Hon, Chan & Wong, 2010; Keffane & Delhomme, 2013; Vinodkumar & Bhasi 2010).

Effective safety communication, entailing the sharing of pertinent information regarding internal safety concerns, improves the effectiveness of the safety management system, ensuring safer workplace practices (Zara et al., 2023). This factor reported is one of the most important in reducing the frequency of injuries and accidents within the organization Ali et al., (2009, as cited in Alfayez, 2021). Hofmann & Mark (2006, as cited in Alfayez 2021), said it's a crucial element in comprehending nurses' safety, potentially functioning as a primary safety indicator for accidents and injuries.

2.4 Underpinning Theory

2.4.1 Theoretical Framework

This research has formulated a conceptual framework grounded in foundational theory: Social Cognitive Theory (SCT). Originally conceived as the Social Learning Theory (SLT) in the 1960s by Albert Bandura, The Social Cognitive Theory (SCT) evolved into its current form in 1986 (*The Social Cognitive Theory, n.d.*). SLT proposes a reciprocal deterministic association among individuals, their environment, and behavior (Bandura, 1986, 2001) wherein these elements interact dynamically and reciprocally, forming the basis for behavior and interventions aimed at behavior modification.

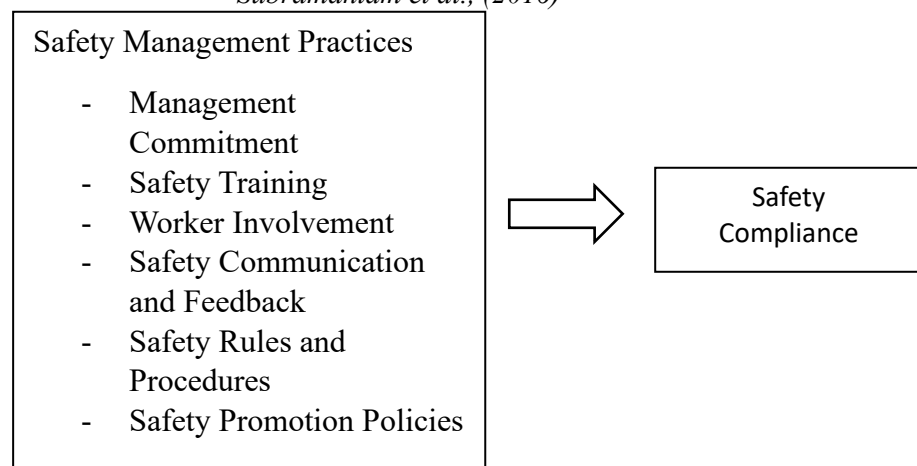
This theory is relevant to the construction industry in Klang Valley because it provides a framework to understand how individuals in this industry learn and adopt safety compliance behaviors through social interactions, environmental factors, and personal experiences. According to Bandura (2000), social cognitive theory regards cooperation as a collective agency, which entails a shared belief in the ability of the group to achieve desired outcomes. In this concept, individuals collaborate to attain goals beyond their capacities. Perceived collective efficiency affects the group's objectives, resource utilization, effort exertion, persistence in the face of challenges, and susceptibility to discouragement when confronted with a task.

Ye et al. (2020) proved that interactions with managers, supervisors, and general workers gradually reduce workers' unsafe behaviors in the construction industry. The supervisor's demonstration of safe practices is particularly influential. Social identity plays a significant role in reducing unsafe behaviors, with preventive measures proving more

effective than reactive ones. Chang and Mosleh (2007, as cited in Ye et al., 2020) stated that the processes underlying workers' unsafe behaviors have emerged as a central concern in construction site safety research. Wang et al. (2017) identified the primary constraints contributing to unsafe behaviors in intricate work settings. The study carried out by Zhang & Fang (2013) viewed through the lens of cognitive process primarily focuses on their impact of unsafe behavior on why Chinese scaffolding workers refrain from using safety harnesses during a single stage of the process.

Figure 2.1 illustrates the conceptual framework of safety management practices, as outlined by Vinodkumar et al. (2010), and Subramaniam et al. (2016), and establishes connections to safety compliance. The dependent variable (DV) pertains to safety compliance and the independent variable (IV) is safety management practices. Safety management practices included management commitment, safety training, worker involvement, safety communication and feedback, safety rules and procedures and safety promotion policies.

Figure 2.1 Research Framework by Vinodkumar et al., (2010) & Subramaniam et al., (2016)



2.5 Conclusion

Within this chapter, the author explored various topics that lay the groundwork for the theoretical aspects of safety management practices in conjunction with safety compliance, drawing from the study of previous scholars. Safety compliance is conventionally described as actions taken to avert, reduce, or alleviate the risk of an anticipated outcome and related distress Telch et al., (2012, as cited in Meyer, 2019). The model employed in past research may be effective in certain contexts but might be avoided universally appropriate for other research methodologies. This study aims to identify all the relationships associated with safety compliance, particularly focusing on the aspects of safety management practices. The selected theory in this study is Social Learning Theory where to gain deeper insights into employee safety compliance in the construction site in Klang Valley.



CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

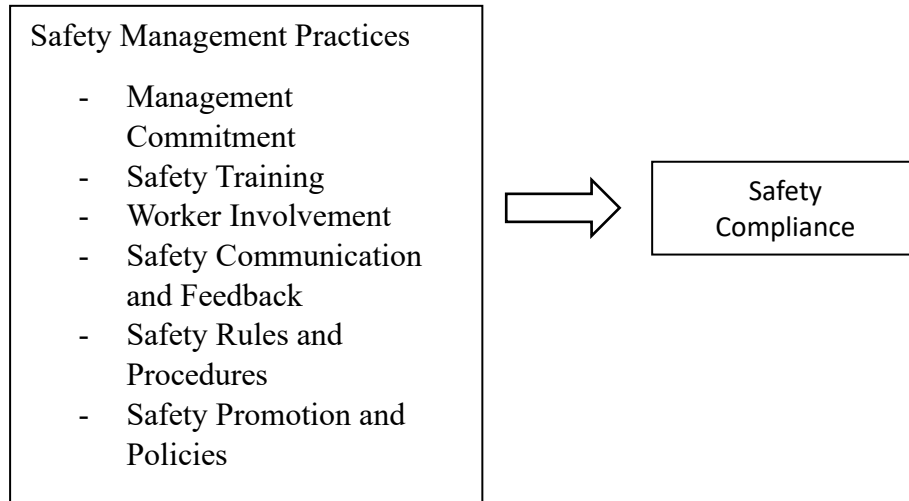
A literature review of this field has already been addressed in the previous chapter. Chapter 3 concentrates on the research framework and hypotheses, research design, research population, sample size, sampling technique that was employed, questionnaire design, data collection method, pilot studies, and data analysis technique. This approach aims to provide a comprehensive overview of the research, elucidating the method by which the technique or data that was applied to analyze the newly acquired information.

3.2 Research Framework

The research framework, devised by the author, is a conceptual model derived from the logical connections amidst the concerns that have already surfaced and are acknowledged and considered authoritative in addressing the research problem in this study (Sekaran, 2016). It delves into the interconnections among the variables involved in this study, constructing a foundation for formulating hypotheses and assessing whether they exhibit positive or negative correlations. By doing so, the author enhances the comprehension of the dynamics within the situations under investigation. Once it is devised, the author intends to verify the hypotheses to examine the validity of the developed theory (Sekaran, 2016).

The framework includes a literature review, and problem statements, as well as the subsequent research framework depicted in the following Figure 3.1:

Figure 3.1 Research Conceptual Framework



3.3 Hypothesis Development

The formulation of the following hypothesis stems from the examination of existing literature conducted by (Vinodkumar & Bhasi, 2010) and aligns with the developed conceptual framework.

H1: Management commitment has a significant relationship with safety compliance.

H2: Safety training has a significant relationship with safety compliance.

H3: Worker involvement has a significant relationship with safety compliance.

H4: Safety communication and feedback have a significant relationship with safety compliance.

H5: Safety rules and procedures have a significant relationship with safety compliance.

H6: Safety promotion and policies have a significant relationship with safety compliance.

3.4 Research Design

After defining the research problem, the subsequent challenge lies in formulating the design for research projects (Kothari, 2004). A research design entails structuring the parameters for gathering and examining data in a way that balances relevance to the objectives with procedural efficiency (Kothari, 2004). This study has employed the quantitative method. In this method dissertation, a dedicated section of the research proposal may be allocated to presenting the overarching theory that guides the study hypotheses (Creswell et al., 2018). Correlation and regression analysis between variables are employed. The respondents comprise individuals employed within construction sectors in the Klang Valley area over the past 5 years of experience.

3.5 Research Population and Sampling Size

The respondents are the people who relate to construction sectors and have been working under my company's supervision in the Klang Valley area for these 5 years. They are from various sectors of construction such as architecture, civil, structural, mechanical, and electrical engineering, interior designers, landscape architects, contractors, and specialists. The contractors participating belong to various classes based on project costs; class G1 covers projects not exceeding 200,000MYR, G2's up to 500,000MYR, G3's up to 1,000,000MYR, G4's up to 3,000,000MYR, G5's up to 5,000,000MYR, G6's up to 10,000,000MYR and G7's with unrestricted project costs.

This sampling size has been based on Krejcie & Morgan's (1970, as cited by Kenpro, 2012). The population in several construction sites in Klang Valley over the past 5

years selected is 360 respondents and the sample size selected is 187 as in Figure 3.2 below.

Figure 3.2 Raosoft Sample size calculated

Raosoft® Sample size calculator

What margin of error can you accept? %
5% is a common choice

What confidence level do you need? %
Typical choices are 90%, 95%, or 99%

What is the population size?
If you don't know, use 20000

What is the response distribution? %
Leave this as 50%

Your recommended sample size is **187**

The margin of error is the amount of error that you can tolerate. If 50% of respondents answer yes, while 10% answer no, you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size.

The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer yes would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size.

How many people are there to choose your random sample from? The sample size doesn't change much for populations larger than 20,000.

For each question, what do you expect the results will be? If the sample is skewed highly one way or the other the population probably is, too. If you don't know, use 50%, which gives the largest sample size. See below under **More Information** if this is confusing.

This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large sample where only a small percentage of the sample responds to your survey.

Online surveys with Yovici have completion rates of 66%!

Alternate scenarios							
With a sample size of	100	200	300	With a confidence level of	90	95	99
Your margin of error would be	8.34%	4.63%	2.31%	Your sample size would need to be	155	187	234

3.6 Sampling Technique

This research employs the probability sampling technique, specifically utilizing random sampling for this study. This technique is used because it can reduce biases and may yield findings that accurately reflect a broad population and cost-effective approach. The data underwent a refinement process involving several steps, including screening to guarantee the inclusion of solely applicable and high-quality data. The respondents are construction workers from various fields and positions in Klang Valley.

3.7 Questionnaire Design

A questionnaire is a method or process to gather information from the respondents. The questionnaire was designed properly and was understandable for the respondent.

The data was consistent and valid for the analysis. Well-crafted questions make for confident and meaningful responses (Creswell, 2012).

The questionnaire was presented utilizing English and Bahasa Malaysia. For this study, a questionnaire is designed for closed-ended questions which is simpler to analyze than a large-scale sample. A questionnaire is divided into two parts as outlined in Table 3.1 below.

Table 3.1 Parts of Questionnaire design

PART	DESCRIPTION
A	Demographic Information Comprises respondent profile data such as gender, marital status, age, qualification, position, or sector, working experience, and history of workplace incidents.
B	Survey on Workplace Safety Management Practices and Safety Compliance 1 - Consists of questions that examine the management commitment to safety and health at the workplace. 2 - Consists of questions that examine the safety training. 3 - Consists of questions that examine the worker involvement. 4 - Consists of questions that examine safety communication and feedback. 5 - Consists of questions that examine safety rules and procedures. 6 - Comprises questions that examine the safety promotion policies. 7 - Consists of questions that examine safety compliance.

Table 3.2 below states the five-point Likert Rating scale for measurement. This Likert Rating scale makes it easy to complete the survey, provides reliable data and is easy for the researcher to determine the complexity and diversity of worker's behavior.

Table 3.2 Five-Point Likert Rating Scale

Rating	1	2	3	4	5
Satisfaction	Strongly Disagree	Slightly Disagree	Not Sure	Agree	Strongly Agree

3.8 Operationalization of Variables

3.8.1 Management Commitment

Refers to a dedication, involvement, or participation and active support demonstrated by organizational leaders, particularly top management toward achieving specific goals or objectives (Albrecht et al., 2015). Top management holds significant responsibility for safety issues, as they wield authority in resource allocation, development and execution of work methods, policy formulation, and related tasks Deming (1986, as cited in Vinodkumar & Bhasi, 2005). Management's role is pivotal in promoting a workplace that is safe and conducive to good health. The management's commitment to safety consistently emerged as a pivotal element toward effective safety initiatives, while other contributing factors were also identified by Cohen (1977, as cited in Vinodkumar et al., 2005).

The frequency of safety-related messages from the top management such as the number of memos, speeches, or meetings to be recorded contributes to workplace safety (Griffin & Neal, 2000). The allocation of resources to safety programs such as a budget dedicated to safety initiatives to be considered as well (Zohar, 2010). The presence of a written safety policy endorsed by top management (Neal et al., 2000), as well as an assessment of employees' perceptions, reported to top management through surveys or interviews, are to be considered (Clarke, 2006).

3.8.2 Safety Training

A systematic process of educating and instructing employees on the principles, procedures, and practices are necessary to ensure the maintenance of a safe and healthy workplace environment. The assessment of the effectiveness of the training program must include effective implementation, demonstration, and maintenance even after the conclusion of the performance feedback (Vinodkumar et al., 2005). According to Cohen et al. (1998) training initiatives targeting worksite health protection, when combined with health protection goals, may mutually strengthen each other.

In the organization, the management evaluates the pre- and post-training effectiveness through the training assessment (Geller, 2005) and measures the frequency of safety training sessions organized by the organization (Goldenhar & Schulte, 1994).

3.8.3 Worker Involvement

A behavioral strategy that enables workers to participate in the organizational decision-making process and offer recommendations for enhancing safety also impacts the effectiveness (Fang et al., 2015). According to Sofijanov et al. (2013), worker involvement is a managerial initiative wherein workers have the chance to engage in discussions about their work-related issues and influence managerial decisions while management retains the authority to govern.

The assessment includes determining the percentage of employees engaged in safety committees or teams (Zohar & Luria, 2005), tracking the frequency of safety meetings

attended by employees (Neal & Griffin, 2006), monitoring the number of safety improvement suggestions submitted by employees (Probst, 2003) and gauging employees' perception of their influence on safety decisions (Clarke & Ward, 2006).

3.8.4 Safety Communication and Feedback

Naji et al. (2022) efficient safety communication methods not only improve working conditions but also positively influence employees' behaviors and attitudes regarding safety, thereby reducing workplace incidents. Effective workplace communication is essential for cultivating a safe working environment and involves the sharing of information encompassing risk controls and hazards that shape behavior and attitudes, fostering ownership and commitment Geller (1998, as cited in Narayan & Nair, 2021).

The assessment entails examining the frequency of safety-related communications from management such as emails and evaluating the accessibility of safety-related resources like safety manuals and posters. Assessing the openness of communication channels for reporting safety concerns or incidents, and reviewing the frequency of safety feedback sessions or debriefing following incidents or near misses also contribute to improved safety.

3.9 Data Collection Method

The researcher has various choices for gathering the respondent's data through email, self-administration, and postal mail (Zikmund, Babin, Carr & Griffin, 2010). The advancements in computer technology has facilitated smoother data collection from

the internet (Zikmund et al., 2010). The researcher adopted the self-completion survey through the internet using the Google Form platform. The self-completion method is employed for its convenient administration, rapid data collection, and flexibility to the respondent's ability to complete surveys at their own pace. The questionnaire will draw upon previous research conducted on the same topics. The questionnaire is adopted from Vinodkumar & Bhasi (2010).

3.10 Pilot Study

Before releasing data widely, a pilot test study was conducted to validate the questionnaire's reliability, serving as a guide for the broader investigation by addressing questions and pinpointing potential issues.

Thirty respondents from the construction sector were involved in the pilot test project. Data collected was analyzed using SPSS version 27. This aimed to evaluate instrument reliability in the survey form and gather respondent feedback on the questionnaire.

Instrument dependability, which refers to the consistency and stability of measurements, is assessed through internal consistency, often measured by Cronbach's alpha. A high correlation between the two items was revealed by Cronbach's alpha with the reliability coefficient ranging from 0.00 to 1.00, indicating reliability. A higher alpha value signifies greater reliability.

The Cronbach's α coefficient was employed to assess the internal consistency of responses for both the individual scale and the entire instrument (Shirali et al., 2018). Based on Nunnally et al., 1994, Bland et al., 1997, DeVellis 2003, (as cited in Tavakol

and Dennick 2011), stated that the value that shows satisfaction on Cronbach's Alpha ranges from 0.7. However, Shi et al. (2012, as cited in Raharjanti et al., 2022), stated the value of Cronbach's alpha should be 0.6 is deemed satisfactory. Values below 0.6 are deemed insufficient while exceeding 0.7 is preferable and satisfactory. Optimal reliability approaches a value of 1.0.

Table 3.3 demonstrates that Cronbach's Alpha value for management commitment is 0.703, safety training 0.730, worker involvement 0.735, safety communication and feedback 0.616, safety rules and procedures 0.809, safety promotions policies 0.640, and safety compliance 0.731. Since all the Cronbach's Alpha values scored above 0.60 (0.616 – 0.809), it can be concluded that these variables are suitable to be measured.

Table 3.3 Result of Tested Reliability for a pilot study

Variables	Type of variable	Cronbach's Alpha
Management Commitment	Independent	0.703
Safety Training	Independent	0.730
Worker Involvement	Independent	0.735
Safety Communication and Feedback	Independent	0.616
Safety Rules and Procedures	Independent	0.809
Safety Promotion Policies	Independent	0.640
Safety Compliance	Dependent	0.731

3.11 Data Analysis Technique

This research utilizes SPSS software which presents reliable and fast answers. The chances of errors are low with this software. SPSS statistical package 27 was used to result in multiple linear regression analysis, Pearson correlation analysis, descriptive analysis and reliability analysis. In this study, the testing utilized was correlation and multiple regression analysis.

3.12 Conclusion

This chapter has covered comprehensively the research design, research hypothesis, framework, population, data collection method, and analysis technique. It also highlights the significance as it ensures the systematic management of research and aims to minimize future problems in any subsequent research. It required detailed data collection and analysis to test the research hypotheses.

CHAPTER 4

RESULTS AND ANALYSIS

4.1 Introduction

The research findings obtained from data collection will be discussed in detail in this section. It focuses on the main aspect of the research, namely the hypotheses outlined in the previous chapter, assessing whether they are supported. The study's findings include the respondents' social demographic, descriptive frequency, correlation and regression analysis. Additionally, all the data results will be provided and comprehensively defined.

4.2 Response Rate

Of the 240 questionnaires distributed, 190 were filled out by the respondents resulting in a 79.2% response rate. Two reasons may have contributed to the lack of response from the remaining 20.8%, one is the perceived notion that their data and information would be revealed, and the other is the questionnaire was released during the Chinese New Year.

4.2.1 Background of Respondents

The social demographic information of the respondents selected for this research is shown in Table 4.1

Table 4.1 Social Demographic Information (n=190)

		Frequency	Percentage (%)
Gender	Male	131	68.9
	Female	59	31.1
Marital Status	Single	69	36.3
	Married	121	63.7
Age	Below 25 Years old	5	2.6
	25 – 34 Years old	85	44.7
	35 – 44 Years old	64	33.7
	45 – 54 Years old	27	14.2
	55 Years and above	9	4.8
Qualification	No education	4	2.1
	SPM/SKM	18	9.5
	STPM	2	1.1
	Diploma and above	166	87.3
Position	Architect	56	29.5
	Mechanical & Electrical Engineer	18	9.5
	Civil & Structure Engineer	21	11.0
	Interior Designer	18	9.5
	Landscape Architect	1	0.5
	Contractor & General worker	42	22.1
	Specialist	34	17.9
Working Experience	Below 1 Year	9	4.7
	2 – 5 Years	36	19.0
	6 – 10 Years	50	26.3
	10 Years and above	95	50.0
History of Occupational Accidents	Yes	78	41.1
	No	112	58.9
Number of accidents	Below 2 times	55	70.5
	2 times and above	23	29.5

Descriptive frequency analysis has been adapted to examine the respondent's social demographic as per Table 4.1. One hundred ninety respondents involved in the survey are construction workers in Klang Valley. As depicted in the table, the majority of respondents were male (68.9%). A slight majority fell within the age of 25 – 34 years old (44.7%) and 35 – 44 years old (33.7%). Among these age groups, a significant portion had been employed in the industry for more than 6 - 10 years (26.3%) and 10 years above (50%). From this, we can say that more than half of the respondents are well experienced in this industry.

The qualifications that have been shown show that most of the respondents have a diploma form of higher education and above (87.3%), as oppose to respondents that did not receive any formal education (2.1%). This percentage of respondents without formal education, many conclusions can be made. From this low percentage of respondents' circulation, one conclusion may be that they had difficulties answering the survey through the self-completion (Google Form), and the second might be that they didn't care to be involved in the survey.

The next demographic is the sectors that the respondents came from. In order for the construction project to function well and be completed, many sectors are involved. Trade sectors involved are Architect (29.5%), Contractor and General workers (22.1%), Specialists (17.9%), Civil & Structure Engineers (11.0%), Mechanical & Electrical Engineers (9.5%), Interior Designer (9.5%) and the lowest are Landscape Architect (0.5%).

Of the total respondents (41.1%) had experienced occupational accidents at the workplace compared to the respondents with no history of accidents (58.9%). Of the total percentage that had accidents in the workplace (70.5%) of respondents had less than 2 accidents and (29.5%) had 2 or more accidents. This percentage showed that the construction industry contributed to a significant number of accidents at the workplace. Table 4.2 below displays the mean for demographic information.

Table 4.2 Mean value for all demographic information (n=190)

Variables	Minimum	Maximum	Mean	SD
Gender	1	2	1.3105	0.46393
Marital status	1	2	1.6368	0.48218
Age	1	5	2.7368	0.90514
Qualification	1	4	3.7368	0.71582
Position or sector	1	7	3.8579	2.41814
Working experience	1	4	3.2158	0.91476
History of workplace accident	1	2	1.5895	0.49323
Number of accidents	0	2	0.5316	0.70264

4.3 Descriptive Statistics

Within this section, descriptive statistics regarding the variables tested are discussed. Means and SD were utilized to investigate the statistics for the variables, utilizing a Five-Point Likert scale, where 1 represents ‘strongly disagree’ and 5 signifies ‘strongly agree’. Table 4.3 illustrates the analysis score of the mean according to previous researchers as a guide for this research.

Table 4.3 Analysis score of mean

Mean Score	Mean Score
1.00 – 2.00	Low
2.01 – 3.00	Moderate low
3.01 – 4.00	Moderate high
4.01 – 5.00	High

Source: Nunnally, 1997 (as cited in Rahman and Nasri, 2018)

Table 4.4 compares the descriptive statistics of this study's research variables. The table indicates the mean score of all variables was a moderately high score, where the highest mean in this research, score for safety rules and procedure was 3.931 and the lowest was for safety communication and feedback 3.415. The standard deviation for safety rules and procedures is 0.335 and safety communication and feedback are 0.576.

Table 4.4 The descriptive statistics of the research variable (n=190)

Variables	Mean	SD
Management Commitment	3.916	0.743
Safety Training	3.906	0.480
Worker Involvement	3.868	0.369
Safety Communication and Feedback	3.415	0.576
Safety Rules and Procedures	3.931	0.335
Safety Promotion Policies	3.459	0.445
Safety Compliance	3.608	0.913

4.3.1 Safety Compliance

Table 4.5 below outlines the particular adherence to safety compliance examined in this study. The results for this dependent variable are shown. Overall, the mean values range from 2.51 to 4.52 with SD ranging from 0.680 to 1.450. As shown in the table below, the “*I ensure the highest levels of safety when carrying out my job*” statement has the highest mean. At the same time, the “*It is not always practical to follow all safety rules and procedures while doing a job*” records the lowest mean.

Table 4.5 Descriptive Analysis of Safety Compliance items (n=190)

	Mean	SD
I use all necessary safety equipment to do my job.	4.04	0.953
I carry out my work in a safe manner.	4.38	0.773
I follow correct safety rules and procedures while carrying out my job.	4.36	0.770
I ensure the highest levels of safety when carrying out my job.	4.52	0.680
Occasionally due to lack of time, I deviate from correct and safe work procedures.	2.77	1.450
Occasionally due to over-familiarity with the job, I deviate from correct and safe work procedures.	2.66	1.401
It is not always practical to follow all safety rules and procedures while doing a job.	2.51	1.398

4.3.2 Management Commitment

Table 4.6 presents the specific items related to management commitment that were queried in this study. The analysis results for this independent variable are displayed in the table below. Overall, the mean values span from 2.38 to 4.49 with SD ranging from 0.762 to 1.294. As shown in the table below, the “*Safety is given a high priority*

by the management” statement has the highest mean. In contrast, the “*Members of the management do not attend safety meetings*” records the lowest mean.

Table 4.6 Descriptive Analysis of Management Commitment items (n=190)

	Mean	SD
Safety is given a high priority by the management.	4.49	0.808
Safety rules and procedures are strictly followed by the management.	4.40	0.762
Corrective action is always taken when the management is told about unsafe practices.	4.29	0.870
In my workplace, managers/supervisors do not show interest in the safety of the workers.	2.94	1.294
The management considers safety to be equally important as healthcare delivery.	4.32	0.907
Members of the management do not attend safety meetings.	2.38	1.232
I feel that management is willing to compromise on safety to increase healthcare delivery.	3.91	1.169
When near-miss accidents are reported, my management acts quickly to solve the problem.	4.27	0.872
My workplace provides sufficient personal protective equipment for the workers.	4.25	0.930

4.3.3 Safety Training

Table 4.7 presents the specific items related to safety training that were queried in this study. The analysis results for this independent variable are displayed in the table below. Overall, the mean values span from 2.94 to 4.24 with SD ranging from 1.062 to 1.252. As shown in the table below, the “*Safety issues are given high priority in training programs*” statement has the highest mean, while the “*I am not adequately trained to respond to emergencies in my workplace*” records the lowest mean.

Table 4.7 Descriptive Analysis of Safety Training items (n=190)

	Mean	SD
My company gives comprehensive training to the employees in workplace health and safety issues.	4.06	1.062
New recruits are trained adequately to learn safety rules and procedures.	3.99	1.113
Safety issues are given high priority in training programs.	4.24	1.024
I am not adequately trained to respond to emergencies in my workplace.	2.94	1.252
Management encourages the workers to attend safety training programs.	4.13	1.062
Safety training was given to me adequately to enable me to assess hazards in the workplace.	4.08	1.069

4.3.4 Worker Involvement

Table 4.8 presents the specific items related to worker involvement that were queried in this study. The analysis results for this independent variable are displayed in the table below. In general, the mean values span from 3.23 to 4.15 with SD ranging from 0.961 to 1.103. As shown in the table below, the “*Management promotes employees’ involvement in safety-related matters*” statement has the highest mean, while the “*Workers do not sincerely participate in identifying safety problems*” records the lowest mean.

Table 4.8 Descriptive Analysis of Worker Involvement items (n=190)

	Mean	SD
Management always welcomes opinions from employees before making final decisions on safety-related matters.	3.97	1.018
My company has safety committees consisting of representatives of management and employees.	4.08	1.103

Table 4.8 (Continued)

Management promotes employees' involvement in safety-related matters.	4.15	0.961
Management consults with employees regularly about workplace health and safety issues.	3.91	1.063
Workers do not sincerely participate in identifying safety problems.	3.23	1.093

4.3.5 Safety Communication and Feedback

Table 4.9 presents the specific items related to safety communication and feedback that were queried in this study. The analysis results for this independent variable are displayed in the table below. Overall, the mean values span from 2.63 to 3.99 with SD ranging from 1.074 to 1.444. As shown in the table below, the “*There is open communication about safety issues in this workplace*” statement has the highest mean, while the “*The targets and goals for safety performance in my workplace are not clear to the workers*” records the lowest mean.

Table 4.9 Descriptive Analysis of Safety Communication and Feedback items (n=190)

	Mean	SD
In my workplace does not have a hazard reporting system where employees can communicate hazard information before incidents occur.	2.99	1.444
Management operates an open-door policy on safety issues.	3.71	1.162
There is sufficient opportunity to discuss and deal with safety issues in meetings.	3.75	1.216
The targets and goals for safety performance in my workplace are not clear to the workers.	2.63	1.384
There is open communication about safety issues in this workplace.	3.99	1.074

4.3.6 Safety Rules and Procedures

Table 4.10 presents the specific items related to safety rules and procedures that were queried in this study. The analysis results for this independent variable are displayed in the table below. Overall, the mean values span from 3.34 to 4.15 with SD ranging from 0.916 to 1.161. As shown in the table below, the “*My supervisors and managers always try to enforce safe working procedures*” statement has the highest mean, while the “*The facilities in the safety department are not adequate to meet the needs of the workplace*” records the lowest mean.

Table 4.10 Descriptive Analysis of Safety Rules and Procedures items (n=190)

	Mean	SD
The safety rules and procedures followed in my company are sufficient to prevent incidents from occurring.	4.06	0.955
The facilities in the safety department are not adequate to meet the needs of the workplace.	3.34	1.161
My supervisors and managers always try to enforce safe working procedures.	4.15	0.916
Safety inspections are carried out regularly.	3.98	1.061
The safety procedures and practices in this organization are useful and effective.	4.11	0.916

4.3.7 Safety Promotion Policies

Table 4.11 presents the specific items related to safety promotion policies that were queried in this study. The analysis results for this independent variable are displayed in the table below. Overall, the mean values span from 3.01 to 4.08 with SD ranging from 1.041 to 1.357. As shown in the table below, the “*In my workplace, safe behavior is considered as a positive factor for job promotions*” statement has the highest mean, while the “*Our supervisor becomes very unhappy and angry when*

employees find out and report unsafe conditions and acts in our section” records the lowest mean.

Table 4.11 Descriptive Analysis of Safety Promotion Policies items (n=190)

	Mean	SD
In my workplace, safe behavior is considered as a positive factor for job promotions.	4.08	1.041
In my workplace, employees are rewarded for reporting safety hazards (thanks, cash or other rewards, recognition in the newsletter, etc.)	3.05	1.314
In my workplace, safety week celebrations and other safety promotional activities arranged by the management are very effective in creating safety awareness among the workers.	3.62	1.228
There exists very healthy competition among employees to find out and report unsafe conditions and acts.	3.54	1.220
Our supervisor becomes very unhappy and angry when employees find out and report unsafe conditions and acts in our section.	3.01	1.357

4.4 Hypothesis Testing

4.4.1 Correlation Analysis

Within the framework of this research, obtaining a correlation matrix was essential for determining the interconnections among variables. The analysis also included evaluating the inter-item and item-total correlation matrices to gauge internal consistency. Specifically, the inter-item correlation matrix was scrutinized to gauge the connections between individual items (Ferketich, as cited in Lyu et al., 2018). This matrix, commonly referred to as the Pearson Correlation, facilitates the discernment of potential relationships between said variables. The Pearson Correlation coefficient varies between 1 and -1. A value of 1 suggests a strong

positive linear correlation, -1 suggests a negative correlation, and 0 indicates no linear correlation between the variables. Significantly, as the Pearson Correlation Coefficient approaches 1.0, indicates an increased level of correlation between variables. Table 4.12 displays the range of Pearson's Correlation Coefficient by previous researchers as a guide for this research followed by a thorough relationship among all the variables summarized in Table 4.13.

Table 4.12 The scale of Pearson's Correlation Coefficient

The scale of a correlation coefficient	Value
$0 < r \leq 0.19$	Very Low
$0.2 \leq r \leq 0.39$	Low
$0.4 \leq r \leq 0.59$	Moderate
$0.6 < r \leq 0.79$	High
$0.8 < r \leq 1.0$	Very High

Source: Selvanathan et al. (2020)

Table 4.13 represents three variables which are worker involvement, safety communication and feedback and safety promotion policies show a very low correlation, and one variable safety rules and procedures shows a low correlation. On another note, these four variables show the value of a positive significant correlation towards the dependent which is safety compliance.

Table 4.13 Correlation Matrix among variables (n=190)

Variables		1	2	3	4	5	6	7
Safety Compliance (1)	Pearson Correlation Sig.(2-tailed)	1 -						
Management Commitment (2)	Pearson Correlation Sig.(2-tailed)	-.035 .636	1 -					
Safety Training (3)	Pearson Correlation Sig. (2-tailed)	-.048 .511	.554** <.001	1 -				
Worker Involvement (4)	Pearson Correlation Sig. (2-tailed)	.164* .024	.437** <.001	.519** <.001	1 -			
Safety Communication and Feedback (5)	Pearson Correlation Sig. (2-tailed)	.138 .057	.244** <.001	.317** <.001	.325** <.001	1 -		
Safety Rules and Procedures (6)	Pearson Correlation Sig. (2-tailed)	.026 .726	.558** <.001	.738** <.001	.561** <.001	.357** <.001	1 -	
Safety Promotion Policies (7)	Pearson Correlation Sig. (2-tailed)	.161* .027	.296** <.001	.452** <.001	.447** <.001	.320** <.001	.507** <.001	1 -

* Significant at the 0.05 level (2-tailed)

** Significant at the 0.01 level (2-tailed)

4.4.2 Regression Analysis

Six hypotheses were formulated and tested for this analysis. The rationale behind conducting regression analysis is to allow the author to examine the variances and their dependency. The standard error of the estimate denotes the average deviation between the observed values and predictions made by this model.

Table 4.14 shows that ($R = 0.294$) and ($R^2 = 0.086$) have been depicted in this study.

In this scenario, approximately 8.6% of the independent variables account for the

variability in the dependent variable indicating a relatively low explanatory power. However, a lower standard error of the estimate indicates better predictive accuracy. For this case, the model in the table below shows that the model's predictive accuracy is moderate, as indicated by the standard error of the estimated value 1.76916.

Table 4.14 Model Summary

Model	R	R Square	Adjust R Square	Std. Error of the Estimate
1	.294 ^a	.086	.056	1.76916

The F-value functions as a gauge of the extent to which the model clarifies differences. If the F-value is not significant, the author is not required to continue the analysis, regardless of whether the R-squared value provides enough explanation to evaluate. Table 4.15 displays the outcome of ANOVA, presenting the F value = 2.886 and significance value 0.010 ($p < 0.05$) indicating that it holds a statistical significance, implying that at least one of the predictors in the model has a non-zero coefficient and contributes to elucidating the variance in the dependent variable. Overall, this result has a statistically significant impact as evidenced by the significant F-value and low significance level.

Table 4.15 Result of ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54.196	6	9.033	2.886	.010 ^b
	Residual	572.778	183	3.130		
	Total	626.974	189			

a. Dependent Variable: Safety Compliance

b. Predictors: (Constant), Safety Promotion Policies, Management Commitment, Safety Communication and Feedback, Worker Involvement, Safety Training, Safety Rules and Procedures

The correlation coefficient, Beta value allows comparison to gauge the strength correlation between variables, indicating whether positive or negative. Typically, the Beta values range between -1 and 1.

Table 4.16 Outcomes of Regression Analysis

Variables	Unstandardized Coefficient		Standardized Coefficient	T	Sig
	B	Std. Error	Beta		
Management Commitment	-.094	.111	-.075	-.843	.401
Safety Training	-.199	.104	-.211	-1.912	.057
Worker Involvement	.216	.095	.206	2.283	.024
Safety Communication and Feedback	.100	.070	.110	1.423	.156
Safety Rules and Procedures	-.011	.118	-.011	-.097	.923
Safety Promotion Policies	.148	.081	.156	1.824	.070

In summary, this analysis has effectively addressed the research objectives and tested the proposed hypotheses. Table 4.17 provides a summary of the hypotheses testing.

Table 4.17 Summary of Hypotheses Status

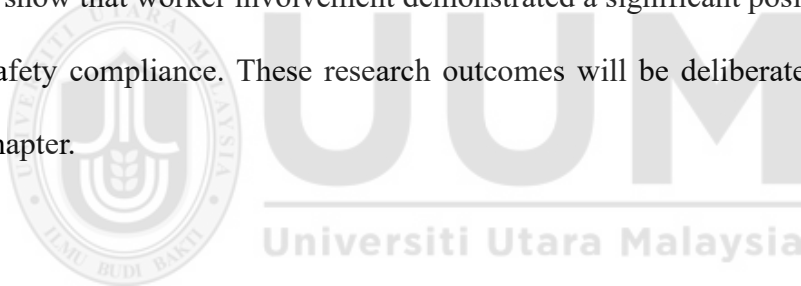
Research Hypotheses		Status
H1	Management commitment has a significant relationship with safety compliance	Not supported
H2	Safety training has a significant relationship with safety compliance	Not Supported
H3	Worker involvement has a significant relationship with safety compliance	Supported

Table 4.17
(Continued)

H4	Safety communication and feedback have a significant relationship with safety compliance	Not Supported
H5	Safety rules and procedures have a significant relationship with safety compliance	Not Supported
H6	Safety promotion and policies have a significant relationship with safety compliance	Not Supported

4.5 Conclusion

In summary, this analysis chapter provides a detailed presentation of all findings. Initially, a descriptive statistic was conducted for each variable, followed by correlation, and regression analysis to assess the outcomes of the hypotheses. The results show that worker involvement demonstrated a significant positive relationship with safety compliance. These research outcomes will be deliberated further in the next chapter.



CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 Introduction

This section discusses the findings presented in Chapter 4, focusing on the primary aim, discovery of safety management practices, and safety compliance among construction workers in Klang Valley. Initially, the study revisits all objectives and clarifies the research direction. This chapter also comprises various crucial sections aimed at addressing the outcomes, examining the study's significance, and proposing practical and effective methods to improve safety compliance among employees.

5.2 Overview of the Research Study

This study investigated the various factors influencing safety compliance among construction workers in Klang Valley. Of the 240 questionnaires distributed, 190 were completed and returned with answers by the respondents resulting in a 79.2% response rate. The respondents represent diverse roles within the construction sector including architects, mechanical and electrical engineers, interior designers, civil and structure engineers, landscape architects, contractors, general workers, and specialists from various fields. Additionally, all returned questionnaires were considered suitable for analysis.

5.3 Recapitulation of the Study

According to the correlation analysis presented in the previous chapter, Table 4.13 represents three variables which are worker involvement, safety communication and feedback and safety promotion policies, which show a very low correlation, and safety rules and procedures show a low correlation. However, these four variables show the value of a positive correlation towards safety compliance.

The correlation analysis presented in Table 4.13 indicates the degree of the correlation (r) between each variable. Worker involvement exhibits a correlation of 0.164, safety communication and feedback 0.138, safety rules and procedures 0.026, and safety promotion and policies 0.161. Conversely, management commitment shows a correlation of -0.035 and safety training -0.048, indicating no significant correlation with other variables. The model summary provided in Table 4.14 indicates an R-value of 0.294 and R^2 0.086, approximately 8.6% account for a segment of the variability in the dependent variable, as indicated by a relatively low explanatory power. However, a decreased standard error of the estimate reflects improved predictive precision. In this case, the model demonstrates moderate predictive accuracy, as evidenced by the standard error of the estimated value of 1.76916.

In this study, the variables that have a positive significant correlation to safety compliance are worker involvement ($\beta = 0.206$, $p < 0.05$) while management commitment ($\beta = -0.075$, $p > 0.05$), safety training ($\beta = -0.211$, $p > 0.05$), safety communication and feedback ($\beta = 0.110$, $p > 0.05$), safety rules and procedures ($\beta = -0.011$, $p > 0.05$) and safety promotion policies ($\beta = 0.156$, $p > 0.05$) have a negative

correlation to safety compliance. Overall, for this analysis, only one hypothesis was supported in correlation to safety compliance among construction workers in Klang Valley which is worker involvement.

5.4 Discussion of the Findings

This study proves how safety management practices relate to safety compliance among construction workers in Klang Valley. Safety management practices and safety compliance are crucial in the construction industry (Him et al., 2023) to protect workers, ensure legal compliance, reduce costs, enhance productivity, maintain reputation, retain employees, manage risks, and fulfill ethical obligations. By prioritizing safety, construction companies can create safer, more efficient, and more sustainable work environments for their employees (Zou et al., 2007).

5.4.1 Level of safety management practices among construction workers in Klang Valley

The safety management practices implemented at construction sites within the Klang Valley, which encompass management commitment, safety training, worker involvement, safety communication and feedback, safety rules and procedures, and safety promotion policies, exhibit a moderately high level of effectiveness with the mean values range 3.415 – 3.931. The moderately high values of the mean show that the construction workers in Klang Valley are taking safety issues seriously in the workplace. Safety rules and procedures show a high level of mean value among all the practices with a value of 3.931. This shows that the construction workers reflect a combination of regulatory compliance, risk awareness, workplace culture, personal

accountability, management support, ongoing training, and education initiatives aimed at promoting a safe and healthy work environment. Based on Vinodkumar and Bhasi (2010), clear and well-documented safety rules and procedures along with their enforcement by supervisors and managers, have the potential to enhance the safety compliance of the workers.

Secondly, the management commitment shows a value of 3.916 which proves that two-way communication is functioning well among the management and the workers. When management demonstrates a commitment to safety, they are more inclined to proactively identify, manage, and mitigate hazards that may lead to accidents (Subramaniam et al., 2016). When employees recognize this commitment from management, they are more likely to prioritize safety, resulting in a reduction in overall accident and injury rates Yule et al. (2006, as cited in Subramaniam et al., 2016).

Safety training shows a value of 3.906, worker involvement 3.868, and safety promotion policies 3.459. For employees to actively engage in a safety program, they are required to undergo safety training. According to Cohen and Jensen (1984, as cited in Vinodkumar et al., 2005), a well-designed and properly administered safety training program emphasizes safe work practices and is based on a thorough assessment of needs, that can effectively enhance on-the-job behavior. Worker involvement in safety management encompasses upward communication and decision-making processes among individuals or groups within the organization (Vredenburg, 2002). This involvement is facilitated by employees' familiarity with

safety improvement recommendations, particularly regarding the adoption of new technologies and materials Butler et al. (2005, as cited in Mat et al., 2021). The promotion policies involve factors like rewarding safe conduct, offering incentives for hazard reporting, conducting awareness programs during safety week, promoting competition to report unsafe conditions, and encouraging supervisors to support workers in reporting safety issues (Vinodkumar et al., 2010).

Finally, the lowest value of mean recorded among all the elements in safety management practices in this study is safety communication and feedback with a value of 3.415. Mat et al., (2021) utilizing safety communication methods like safety meetings, regular personal interactions, and signage can enhance organizational safety behavior. By disseminating information through these channels, employees are reminded of the significance of prioritizing safety and working safely (Mat et al., 2021).

Overall, the levels of safety management practices show a value of a moderately high level of effectiveness.

5.4.2 Level of safety compliance among construction workers in Klang Valley

This analysis shows that the mean value of safety compliance among construction workers within Klang Valley is 3.608, indicating a moderately high level. This indicates that the construction workers within Klang Valley display notable

dedication and awareness regarding safety. Their commitment is evident in their adherence to the safety policies set forth by management.

Overall, the moderately high level of safety compliance among construction workers in Klang Valley is attributed to a combination of regulatory compliance, robust safety training programs, effective worksite supervision, access to safety equipment, transparent communication channels, and a commitment to continuous improvement in safety practices.

5.4.3 Correlation between safety management practices and safety compliance among construction workers in Klang Valley

A correlation exists between safety management practices and safety compliance among construction workers in Klang Valley. The analysis ($R = 0.294$) and ($R^2 = 0.086$) have been depicted in this study. In this scenario, approximately 8.6% account for a portion of the variability in the dependent variable, as indicated by a relatively low explanatory power. However, a lower standard error of the estimate indicates better predictive accuracy. For this case, the model in Table 4.14 shows that the model's predictive accuracy is moderate, as indicated by the standard error of the estimated value of 1.76916.

5.4.4 Management Commitment and Safety Compliance

Drawing upon the analysis in the previous chapter has identified a non-significant correlation among construction workers in Klang Valley, ($r = -0.035$, $p > 0.05$)

demonstrating that, there might be a discrepancy. Within the construction industry, cultural norms emphasizing productivity or deadline-driven work may overshadow the importance of safety. Even if the management expresses commitment towards safety, deeply ingrained cultural attitudes prioritizing efficiency over safety may hold back employees, willingness to comply with safety procedures. These findings contrast with those of previous studies (Su, 2021).

The lack of visible leadership involvement in safety initiatives, including supervisors and managers failing to actively promote or enforce safety protocols can weaken the perceived commitment to safety. For example, when leadership fails to lead by example or prioritize safety over competing demands, employees may not view safety compliance as a priority.

5.4.5 Safety Training and Safety Compliance

These current findings demonstrate that no significant correlation among construction workers in Klang Valley ($r = -0.048$, $p > 0.05$). Factors within the workplace, such as organizational culture, support from leadership, and peer influences can markedly influence the efficacy of safety training. For example, if the organizational culture does not prioritize safety or if there is insufficient support from the supervisors or peers for safety initiatives, employees may not feel motivated to apply the knowledge gained from training to their daily work tasks, diminishing the correlation between training and compliance. The results demonstrate a non-significant correlation that aligns with a prior researcher, R. Sharma & D.K. Mishra (2020, as cited in Mat et al. 2021).

Assessing the direct influence of safety training on adherence to safety compliance is complex, requiring accurate and reliable measurement tools. If the methods used to measure safety compliance are not sensitive or comprehensive enough to capture the nuances of employee behavior, it may obscure any significant correlations between training and compliance. Low levels of employee engagement or participation in safety training sessions can undermine its effectiveness. If employees are disinterested or disengaged during training sessions they are unable to realize and understand the safety concepts leading to a weak correlation.

5.4.6 Worker Involvement and Safety Compliance

It was hypothesized that worker involvement would result in a correlation with safety compliance and this study proves it, ($r = 0.164$, $p < 0.05$). Worker involvement in the safety management process involves the exchange of information and decision-making among individuals or groups within the organization, fostering upward communication channels Vredenburg (2002, as cited in Mat et al., 2021) due to employees' familiarity with safety improvement suggestions, particularly regarding the integration of novel technologies and introduction of new materials Butler et al. (2005, as cited in Mat et al., 2021). Worker involvement in safety initiatives increases their awareness of potential hazards and risks in the workplace. As they become more engaged in identifying and addressing safety issues, they are more likely to adhere to safety procedures and guidelines to mitigate risks and prevent accidents. In addition, when workers are actively involved in safety planning and decision-making, they are prone to understand the rationale behind safety rules and regulations.

The findings on the positive relationship are in line with the research conducted by Vinodkumar et al. (2010), Priya et al. (2021), and Mat et al. (2021). Based on Podgórski (2005), worker involvement aids in achieving organizational goals by enhancing occupational safety and health conditions to benefit both employees and the organization.

5.4.7 Safety Communication and Feedback and Safety Compliance

The present study reveals that the correlation analysis presented in Table 4.13 indicated a positive relationship between both variables. However, the regression analysis in Table 4.16 indicated that safety communication and feedback do not exhibit a significant correlation among construction workers in Klang Valley, ($r = 0.138, p > 0.05$).

Despite efforts to communicate safety information, the effectiveness of the communication may be lacking. For example, if safety messages are not clear, timely, or relevant to workers' tasks and concerns, they may not influence behavior as intended. Moreover, the absence of an efficient feedback loop could impede the effectiveness of safety communication initiatives. This happens when the workers do not feel motivated or empowered to offer feedback regarding safety matters or propose enhancements, communication endeavors may inadequately address their requirements or apprehensions. These findings align with the research of other scholars who have explored safety communication as demonstrated by their studies, for example, Subramaniam et al. (2016), Chong et al. (2018, as cited in Mat et al., 2021).

5.4.8 Safety Rules and Procedures and Safety Compliance

These current findings reveal that the correlation analysis presented in Table 4.13 indicated a positive relationship between both variables. However, the regression analysis in Table 4.16 indicated that no significant correlation among construction workers in Klang Valley, ($r = 0.026$, $p > 0.05$). Although safety rules and procedures may be established, there may be a lack of consistent enforcement on construction sites. If rules are not effectively communicated, monitored, or enforced by supervisors and management, workers may not perceive them as essential or may choose to disregard them. In addition, the way workers perceive safety rules and procedures is crucial. If rules seem arbitrary, excessively strict, or unrelated to their daily tasks, workers might be less motivated to adhere to them. Therefore, it is imperative to communicate safety rules clearly and provide explanations for their importance to encourage understanding and compliance.

5.4.9 Safety Promotion Policies and Safety Compliance

The present study reveals that the correlation analysis presented in Table 4.13 indicated a positive relationship between both variables. However, the regression analysis in Table 4.16 revealed that that no significant correlation among construction workers in Klang Valley, ($r = 0.161$, $p > 0.05$). While safety promotion policies may exist on paper, there may be a gap between policy formulation and implementation on construction site. If safety promotion initiatives are not effectively communicated, enforced, or integrated into daily work practices, workers may not perceive them as relevant or impactful. Furthermore, worker's perception of safety promotion policies also influences their behavior. If policies are perceived as

bureaucratic or superficial, workers may not take them seriously or feel compelled to adhere to them. Clear communication and demonstration of the tangible benefits of safety promotion initiatives are essential for fostering positive behavior change.

These findings align with the research of other scholars who have explored safety promotion policies as demonstrated by their studies, for example, Subramaniam et al. (2016).

Finally, the prevailing organizational culture within construction companies plays a significant role. If safety is not prioritized or valued by management and supervisors, workers may not feel motivated or empowered to engage in safe behaviors, regardless of the existence of safety promotion policies.

5.5 Research Implications

5.5.1 Theoretical Implications

The findings from this analysis significantly enhance the existing understanding of safety compliance in various aspects. This study provides fresh empirical evidence regarding the correlation between safety management practices toward safety compliance. Subramaniam et al. (2016) proved a relationship between all these practices toward safety compliance, this contemporary investigation reveals that worker involvement is a significant factor among construction workers in Klang Valley.

There have been few studies based on safety compliance in construction in Malaysia (Ajmal et al., 2022; Hassan et al., 2020), particularly among construction workers in Klang Valley. From these various positions and sectors, the findings offer valuable insight to help improve safety planning at the construction site in the Klang Valley and extend to other regions in Malaysia.

5.5.2 Practical Implications

The findings carry significant implications for construction worker involvement in Klang Valley. The empirical evidence derived from this study substantiates that worker involvement holds paramount importance in guaranteeing workplace safety. Worker involvement can result in better compliance with safety regulations and more are more actively involved in identifying hazards, proposing solutions, and participating in safety training programs. They are more likely to adhere to safety protocols and take ownership of the safety responsibility which is aligned with the theoretical framework by Albert Bandura 1986 (*The Social Cognitive Theory, n.d.*).

Worker involvement plays a crucial role in mitigating risks and preventing accidents on construction sites and workers are actively engaged in identifying and addressing safety hazards, thus the likelihood of accidents and injuries decreases. This proactive approach not only safeguards workers' well-being but also reduces the financial and reputational risks associated with workplace accidents (Ajmal et al., 2022b).

Overall, the findings underscore the importance of worker involvement in promoting safety, productivity, and overall well-being in the construction industry. By prioritizing worker participation and engagement, companies can create safer and more productive work environments for all employees (Bandura, 1986, 2001).

5.6 Limitations of the Study

Certain limitations need to be acknowledged and addressed in future studies. Several factors restrict the author from generalizing the findings to a larger population, for example, out of the 240 distributed questionnaires only 190 were completed and responded to. This is due to some respondents fearing that their data and information will be disclosed and that the questionnaire was distributed during Chinese New Year.

5.7 Suggestions for Future Research

Although the outcomes correspond with the research framework, further research is necessary to validate this model or develop an alternative model that may better accommodate specific information. By addressing any unnecessary issues the limitations of this research can be extended to pave the way for future studies and offer a completely new perspective on the safety compliance of construction workers.

For future studies, it is recommended that the data collection method be adapted using a personal or group interview. Some of the construction workers on-site may not be well educated, leaving them unable to read and access the current technology.

With this recommended method, the data collection will be more accurate. Apart from that, it is suggested that future research incorporate a mediator such as safety knowledge, that will influence the worker's safety compliance in the construction industry.

This study aims to expand its focus to include more construction sites within Malaysia including Sabah and Sarawak to achieve a greater impact and gain insights into the overall level of safety management practices and safety compliance among construction workers. Any forthcoming studies also recommended focusing on the practices among the top management.

In closing, this study adopts the model proposed by Vinodkumar and Bhasi (2010) and Subramaniam et. Al (2016) to investigate the significant relationship between safety management practices and safety compliance. Different methodologies will be recommended so that the results will vary.

5.8 Conclusion

Aimed to explore the safety management practices and safety compliance among construction workers in Klang Valley. For this purpose, existing instruments were adapted from Vinodkumar et al. (2010) and Subramaniam et al. (2016), who had also examined the same but just different sectors or fields. Overall the questionnaire encompassed seven sections. Utilizing a 5-point Likert scale (1 = Strongly Disagree,

2 = Slightly Disagree, 3 = Not Sure, 4 = Agree, 5 = Strongly Agree), it was distributed among construction workers within five years, to collect feedback.

Finally, this study has underscored the significance of safety management practices and safety compliance in the workplace. The effort exerted in completing the survey is expected to have positive impacts on the implementation of safety-related compliance for management at construction sites.



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APPENDIX A: QUESTIONNAIRE

Research Title: Safety Management Practices and Safety Compliance among construction workers in Klang Valley

Assalamualaikum and Salam Sejahtera,

Sir / Madam,

This survey was conducted as part of the Master of Science (Occupational Safety and Health Management) project in the Research Project that needs to be submitted as part of the requirements for the Master of Science (Occupational Safety and Health Management) from Universiti Utara Malaysia.

The general purpose of this study is to identify "Safety Management Practices and Safety Compliance among construction workers in Klang Valley".

This questionnaire uses two languages starting with Malay followed by English. There are 2 Parts which are Part A and Part B consists of:

Part A

- Demographic Information

Part B

Survey On Workplace Safety Management Practices & Safety Behaviour (7 Section)

- Management Commitment (Komitmen Pengurusan)
- Safety Training (Latihan Keselamatan)
- Worker Involvement (Penglibatan Pekerja)
- Safety Communication and Feedback (Komunikasi dan Maklum Balas Keselamatan)
- Safety Rules and Procedures (Peraturan dan Prosedur Keselamatan)
- Safety Promotion Policies (Dasar Promosi Keselamatan)
- Safety Compliance (Pematuhan Keselamatan)

Please **read** each statement carefully and answer them honestly.

All information in this questionnaire **will be treated with utmost confidentiality** and will only be used for this study. Your participation and cooperation are greatly appreciated.

Thank you.

PART A: DEMOGRAPHIC INFORMATION

PLEASE TICK (✓) IN THE APPROPRIATE BOXES THAT CORRESPOND TO YOUR ANSWER TO EACH THE FOLLOWING QUESTIONS BELOW.

GENDER

☐

Male

☐

Female

MARITAL STATUS

☐

Single

☐

Married

AGE

☐

Below 25 Years old

☐

25 - 34 Years old

☐

35 - 44 Years old

☐

45 – 54 Years old

☐

55 Years and above

QUALIFICATION

☐

No Education

☐

SPM / SKM

☐

STPM

☐

Diploma and Above

POSITION OR SECTOR

☐

Architect

☐

Mechanical & Electrical Engineer

☐

Interior Designer

☐

Civil & Structure Engineer

☐

Landscape Architect

☐

Specialist

☐

Contractor / General Worker

WORKING EXPERIENCE

☐

Below 1 Year

☐

2 - 5 Years

☐

6 - 10 Years

☐

10 Years and Above

HAVE YOU EVER HAD ANY OCCUPATIONAL ACCIDENTS SINCE YOU STARTED WORKING IN THIS ORGANISATION?

☐

Yes

☐

No

IF YES, HOW MANY ACCIDENTS HAVE YOU HAD WHILE WORKING IN THIS ORGANISATION?

☐

Below 2 times

☐

2 Times and Above

PART B: SURVEY ON WORKPLACE SAFETY MANAGEMENT PRACTICES & SAFETY COMPLIANCE

PLEASE CIRCLE YOUR OPINION ON
THE FOLLOWING STATEMENT BY
USING THE GIVEN SCALE

Rating	1	2	3	4	5
Satisfaction	Strongly Disagree (Sangat Tidak Setuju)	Slightly Disagree (Tidak Setuju)	Not Sure (Tidak Pasti)	Agree (Setuju)	Strongly Agree (Sangat Setuju)

1 - MANAGEMENT COMMITMENT (KOMITMEN PENGURUSAN)						
1	Safety is given the high priority by the management. (Keselamatan dalam pekerjaan diberi keutamaan tinggi oleh pihak pengurusan)	1	2	3	4	5
2	Safety rules and procedures are strictly followed by the management. (Peraturan dan prosedur keselamatan dalam pekerjaan dilaksanakan sepenuhnya oleh pihak pengurusan)	1	2	3	4	5
3	Corrective action is always taken when the management is told about unsafe practices. (Langkah penambahbaikan selalunya dilaksanakan oleh pihak pengurusan apabila dimaklumkan mengenai amalan amalan pekerjaan yang tidak selamat)	1	2	3	4	5
4	In my workplace, managers / supervisors do not show interest in the safety of the workers. (Pengurus / penyelia di tempat kerja saya tidak menunjukkan minat terhadap keselamatan para pekerja)	1	2	3	4	5
5	The management considers safety to be equally important as healthcare delivery. (Bagi pihak pengurusan, aspek keselamatan adalah sama pentingnya dengan perkhidmatan kesihatan)	1	2	3	4	5
6	Members of the management do not attend safety meetings. (Ahli pengurusan tidak menghadiri mesyuarat keselamatan)	1	2	3	4	5

7	I feel that management is willing to compromise on safety to increase healthcare delivery. (Saya merasakan bahawa pihak pengurusan bersedia untuk mempertimbangkan aspek keselamatan bagi meningkatkan penyampaian perkhidmatan kesihatan)	1	2	3	4	5
8	When near-miss accidents are reported, my management acts quickly to solve the problem. (Apabila kemalangan nyaris (near-miss) dilaporkan, pengurusan segera bertindak untuk menyelesaikannya)	1	2	3	4	5
9	My workplace provides sufficient personal protective equipment for the workers. (Tempat kerja saya menyediakan peralatan perlindungan peribadi yang mencukupi kepada pekerja)	1	2	3	4	5
2 - SAFETY TRAINING (LATIHAN KESELAMATAN)						
10	My company gives comprehensive training to the employees in the workplace health and safety issues. (Syarikat ini memberi latihan menyeluruh kepada pekerja mengenai isu keselamatan dan kesihatan di tempat kerja)	1	2	3	4	5
11	Newly recruits are trained adequately to learn safety rules and procedures. (Pekerja baharu dilatih secukupnya untuk mempelajari peraturan dan prosedur keselamatan)	1	2	3	4	5
12	Safety issues are given high priority in training programmes. (Isu keselamatan diberi keutamaan dalam program latihan)	1	2	3	4	5
13	I am not adequately trained to respond to emergency situations in my workplace. (Saya tidak dilatih secukupnya untuk bertindak dalam situasi kecemasan di tempat kerja)	1	2	3	4	5
14	Management encourages the workers to attend safety training programmes. (Pihak pengurusan menggalakkan pekerja menghadiri program latihan keselamatan)	1	2	3	4	5
15	Safety training given to me is adequate to enable to assess hazards in workplace. (Latihan keselamatan yang diberikan kepada saya mencukupi untuk saya menilai bahaya di tempat kerja)	1	2	3	4	5

3 - WORKER INVOLVEMENT (PENGLIBATAN PEKERJA)						
16	Management always welcomes opinion from employees before making final decisions on safety related matters. (Pihak pengurusan sentiasa mengalu-alukan pandangan daripada pekerja sebelum membuat keputusan akhir mengenai hal-hal keselamatan)	1	2	3	4	5
17	My company has safety committees consisting of representatives of management and employees. (Syarikat ini mempunyai jawatankuasa keselamatan yang terdiri daripada wakil pengurusan dan pekerja)	1	2	3	4	5
18	Management promotes employees' involvement in safety related matters. (Pihak pengurusan menggalakkan penglibatan pekerja dalam hal-hal berkaitan keselamatan)	1	2	3	4	5
19	Management consults with employees regularly about workplace health and safety issues. (Pihak pengurusan kerap berunding dengan pekerja mengenai isu keselamatan dan kesihatan di tempat kerja)	1	2	3	4	5
20	Workers do not sincerely participate in identifying safety problems. (Para pekerja tidak terlibat dengan jujur dalam mengenal pasti masalah keselamatan)	1	2	3	4	5
4 - SAFETY COMMUNICATION AND FEEDBACK (MAKLUMBALAS DAN KOMUNIKASI KESELAMATAN)						
21	In my workplace doesn't have a hazard reporting system where employees can communicate hazard information before incidents occur. (Di tempat kerja saya tidak mempunyai sistem laporan bahaya (hazard) yang membolehkan pekerja menyampaikan maklumat bahaya sebelum berlaku sesuatu insiden)	1	2	3	4	5
22	Management operates an open-door policy on safety issues. (Pihak pengurusan mengamalkan polisi keterbukaan berkenaan isu keselamatan)	1	2	3	4	5
23	There is sufficient opportunity to discuss and deal with safety issues in meetings. (Terdapat peluang yang cukup untuk berbincang dan menangani isu keselamatan dalam mesyuarat)	1	2	3	4	5
24	The target and goals for safety performance in my workplace are not clear to the workers. (Sasaran dan matlamat pencapaian keselamatan di tempat kerja saya adalah tidak jelas bagi pekerja)	1	2	3	4	5

25	There is open communication about safety issues in this workplace. (Terdapat komunikasi terbuka mengenai isu keselamatan di tempat kerja)	1	2	3	4	5
5 - SAFETY RULES AND PROCEDURES (PERATURAN DAN PROSEDUR KESELAMATAN)						
26	The safety rules and procedures followed in my company are sufficient to prevent incidents occurring. (Peraturan dan prosedur keselamatan yang diikuti di syarikat ini mencukupi untuk mengelakkan dari insiden berlaku)	1	2	3	4	5
27	The facilities in the safety department are not adequate to meet the needs of workplace. (Kemudahan di jabatan keselamatan adalah tidak memadai dalam memenuhi keperluan di tempat kerja)	1	2	3	4	5
28	My supervisors and managers always try to enforce safe working procedures. (Penyelia dan pengurus saya sentiasa cuba untuk menguatkuasakan prosedur kerja selamat)	1	2	3	4	5
29	Safety inspections are carried out regularly. (Pemeriksaan keselamatan kerap dijalankan)	1	2	3	4	5
30	The safety procedures and practices in this organization are useful and effective. Prosedur dan amalan keselamatan di syarikat ini berguna dan berkesan)	1	2	3	4	5
6 - SAFETY PROMOTION POLICIES (DASAR PROMOSI KESELAMATAN)						
31	In my workplace, safe behavior is considered as a positive factor for job promotions. (Di tempat saya bekerja, tingkah laku selamat dianggap sebagai faktor positif bagi galakan pekerjaan)	1	2	3	4	5
32	In my workplace, employees are rewarded for reporting safety hazards (thanked, cash or other rewards, recognition in newsletter, etc.) (Di tempat kerja saya, pekerja akan diberi imbuhan untuk melaporkan bahaya keselamatan (ucapan terima kasih, wang tunai atau imbuhan, pengiktirafan dalam makalah dan lain-lain)	1	2	3	4	5

33	In my workplace, safety week celebration and other safety promotional activities arranged by the management are very effective in creating safety awareness among the workers. (Di tempat kerja saya, sambutan minggu keselamatan dan lain-lain aktiviti promosi keselamatan yang dianjurkan oleh pengurusan sangat berkesan dalam mewujudkan kesedaran keselamatan dalam kalangan pekerja)	1	2	3	4	5
34	There exists very healthy competition among employees to find out and report unsafe condition and acts. (Wujud persaingan yang sangat sihat dalam kalangan pekerja untuk mengenalpasti dan melaporkan keadaan dan tindakan tidak selamat)	1	2	3	4	5
35	Our supervisor becomes very unhappy and angry when employees find out and report unsafe conditions and acts in our section. (Penyelia kami menjadi sangat tidak gembira dan marah apabila mendapati pekerja mengenalpasti dan melaporkan keadaan dan tindakan tidak selamat di seksyen kami)	1	2	3	4	5
7 - SAFETY COMPLIANCE (PEMATUHAN KESELAMATAN)						
36	I use all necessary safety equipment to do my job. (Saya menggunakan kesemua peralatan keselamatan yang perlu semasa melakukan pekerjaan)	1	2	3	4	5
37	I carry out my work in a safe manner. Saya melaksanakan kerja dengan cara yang selamat)	1	2	3	4	5
38	I follow correct safety rules and procedures while carrying out my job. (Saya mematuhi peraturan dan prosedur keselamatan yang betul semasa melaksanakan pekerjaan)	1	2	3	4	5
39	I ensure the highest levels of safety when I carry out my job. (Saya memastikan tahap keselamatan yang paling tinggi semasa melaksanakan pekerjaan)	1	2	3	4	5
40	Occasionally due to lack of time, I deviate from correct and safe work procedures. (Kadang-kadang kerana kesuntukan masa, saya menyimpang dari prosedur kerja yang betul dan selamat)	1	2	3	4	5

41	Occasionally due to over familiarity with the job, I deviate from correct and safe work procedures. (Oleh kerana sangat terbiasa dengan pekerjaan, saya kadang kala menyimpang daripada prosedur kerja yang betul dan selamat)	1	2	3	4	5
42	It is not always practical to follow all safety rules and procedures while doing a job. (Bukanlah sesuatu yang praktikal untuk sentiasa mematuhi kesemua peraturan dan prosedur semasa melaksanakan pekerjaan)	1	2	3	4	5



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APPENDIX B: DESCRIPTIVE STATISTICS

GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	131	68.9	68.9	68.9
	2.00	59	31.1	31.1	100.0
Total		190	100.0	100.0	

1.00 Represent Male

2.00 Represent Male

MARITAL STATUS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	69	36.3	36.3	36.3
	2.00	121	63.7	63.7	100.0
Total		190	100.0	100.0	

1.00 Represent Single

2.00 Represent Married

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	5	2.6	2.6	2.6
	2.00	85	44.7	44.7	47.4
	3.00	64	33.7	33.7	81.1
	4.00	27	14.2	14.2	95.3
	5.00	9	4.7	4.7	100.0
	Total	190	100.0	100.0	

1.00 Represent Below 25 Years

2.00 Represent 25 – 34 Years Old

3.00 Represent 35 – 44 Years Old

4.00 Represent 45 – 54 Years Old

5.00 Represent 55 Years Old and Above

QUALIFICATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	4	2.1	2.1	2.1
	2.00	18	9.5	9.5	11.6
	3.00	2	1.1	1.1	12.6
	4.00	166	87.4	87.4	100.0
	Total	190	100.0	100.0	

- 1.00 Represent No Education
 2.00 Represent SPM/SKM
 3.00 Represent STPM
 4.00 Represent Diploma and Above

POSITION OR SECTOR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	56	29.5	29.5	29.5
	2.00	18	9.5	9.5	38.9
	3.00	18	9.5	9.5	48.4
	4.00	21	11.1	11.1	59.5
	5.00	1	.5	.5	60.0
	6.00	34	17.9	17.9	77.9
	7.00	42	22.1	22.1	100.0
	Total	190	100.0	100.0	

- 1.00 Represent Architect
 2.00 Represent Mechanical & Electrical Engineer
 3.00 Represent Interior Designer
 4.00 Represent Civil & Structure Engineer
 5.00 Represent Landscape Architect
 6.00 Represent Specialist
 7.00 Represent Contractor/ General Worker

WORKING EXPERIENCE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	9	4.7	4.7	4.7
	2.00	36	18.9	18.9	23.7
	3.00	50	26.3	26.3	50.0
	4.00	95	50.0	50.0	100.0
	Total	190	100.0	100.0	

- 1.00 Represent Below 1 Year
 2.00 Represent 2 – 5 Years
 3.00 Represent 6 – 10 Years
 4.00 Represent 10 Years and Above

HISTORY OF OCCUPATIONAL ACCIDENT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	78	41.1	41.1	41.1
	2.00	112	58.9	58.9	100.0
	Total	190	100.0	100.0	

1.00 Represent Yes

2.00 Represent No

NUMBER OF ACCIDENT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	112	58.9	58.9	58.9
	1.00	55	28.9	28.9	87.9
	2.00	23	12.1	12.1	100.0
	Total	190	100.0	100.0	

0.00 Represent No Accident

1.00 Represent Below 2 Times

2.00 Represent 2 Times and Above



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APPENDIX C: RELIABILITY STATISTICS

C1 - All Variables

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.917	.930	42

C2 - Management Commitment

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.770	.810	9

C3 - Safety Training

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.801	.820	6

C4 - Worker Involvement

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.840	.844	5

C5 - Safety Communication and Feedback

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.731	.739	5

C6 - Safety Rules and Procedures

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.842	.857	5

C7 - Safety Promotion Policies

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.829	.832	5

C8 - Safety Compliance Behavior

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.713	.709	7

APPENDIX D: CORRELATION ANALYSIS

		Correlations						
		SCGROUP	MCGROUP	STGROUP	WIGROUP	SCFGROUP	SRPGROUP	SPPGROUP
SCGROUP	Pearson Correlation	1	-.035	-.048	.164 [*]	.138	.026	.161 [*]
	Sig. (2-tailed)		.636	.511	.024	.057	.726	.027
	N	190	190	190	190	190	190	190
MCGROUP	Pearson Correlation	-.035	1	.554 ^{**}	.437 ^{**}	.244 ^{**}	.558 ^{**}	.296 ^{**}
	Sig. (2-tailed)	.636		<.001	<.001	<.001	<.001	<.001
	N	190	190	190	190	190	190	190
STGROUP	Pearson Correlation	-.048	.554 ^{**}	1	.519 ^{**}	.317 ^{**}	.738 ^{**}	.452 ^{**}
	Sig. (2-tailed)	.511	<.001		<.001	<.001	<.001	<.001
	N	190	190	190	190	190	190	190
WIGROUP	Pearson Correlation	.164 [*]	.437 ^{**}	.519 ^{**}	1	.325 ^{**}	.561 ^{**}	.447 ^{**}
	Sig. (2-tailed)	.024	<.001	<.001		<.001	<.001	<.001
	N	190	190	190	190	190	190	190
SCFGROUP	Pearson Correlation	.138	.244 ^{**}	.317 ^{**}	.325 ^{**}	1	.357 ^{**}	.320 ^{**}
	Sig. (2-tailed)	.057	<.001	<.001	<.001		<.001	<.001
	N	190	190	190	190	190	190	190
SRPGROUP	Pearson Correlation	.026	.558 ^{**}	.738 ^{**}	.561 ^{**}	.357 ^{**}	1	.507 ^{**}
	Sig. (2-tailed)	.726	<.001	<.001	<.001	<.001		<.001
	N	190	190	190	190	190	190	190
SPPGROUP	Pearson Correlation	.161 [*]	.296 ^{**}	.452 ^{**}	.447 ^{**}	.320 ^{**}	.507 ^{**}	1
	Sig. (2-tailed)	.027	<.001	<.001	<.001	<.001	<.001	
	N	190	190	190	190	190	190	190

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

APPENDIX E: REGRESSION ANALYSIS

E1 - Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics	
						F Change	df1
1	.294 ^a	.086	.056	1.76916	.086	2.886	6

- a. Dependent Variable: Safety Compliance Behavior
- b. Predictors: (Constant), Safety Promotion Policies, Management Commitment, Safety Communication and Feedback, Worker Involvement, Safety Training, Safety Rules and Procedures

E2 – ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54.196	6	9.033	2.886	.010 ^b
	Residual	572.778	183	3.130		
	Total	626.974	189			

- a. Dependent Variable: Safety Compliance Behavior
- b. Predictors: (Constant), Safety Promotion Policies, Management Commitment, Safety Communication and Feedback, Worker Involvement, Safety Training, Safety Rules and Procedures

E3 – Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.776	.854		6.760	<.001
	MCGROUP	-.094	.111	-.075	-.843	.401
	STGROUP	-.199	.104	-.211	-1.912	.057
	WIGROUP	.216	.095	.206	2.283	.024
	SCFGROUP	.100	.070	.110	1.423	.156
	SRPGROUP	-.011	.118	-.011	-.097	.923
	SPPGROUP	.148	.081	.156	1.824	.070

- a. Dependent Variable: Safety Compliance Behavior

APPENDIX F: TURNITIN

THE CORRELATION BETWEEN SAFETY MANAGEMENT PRACTICES AND SAFETY BEHAVIOR AMONG CONSTRUCTION WORKERS IN KLANG VALLEY

ORIGINALITY REPORT

20%	20%	12%	11%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	etd.uum.edu.my Internet Source	12%
2	Submitted to National School of Business Management NSBM, Sri Lanka Student Paper	1%
3	hrmars.com Internet Source	<1%
4	Submitted to Universiti Teknologi Malaysia Student Paper	<1%
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