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The Influence of Safety Management Practices on Safety Participation and Awareness Level of Standard Operating Procedure (SOP) Among Construction Employees in Johor

Poovanesvaran A/L Kanesan, Saina Omar & Syazwani Mohd Fadzil*

Department of Applied Physics, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor

**Corresponding author: syazwanimf@ukm.edu.my*

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ABSTRACT

The Malaysian construction sector demonstrated significant recovery in 2022, driven by the revival of major infrastructure projects like the Mass Rapid Transit 3 (MRT3) and increased residential project approvals. The sector is projected to grow by 7.1%, reaching MYR 181,599 million. However, this growth is overshadowed by a persistently high rate of occupational injuries, with the construction industry accounting for 59.8% of total workplace fatalities from January to November 2022. This study investigates the impact of safety management practices on construction workers' familiarity with standard operating procedures (SOPs) and their engagement with safety measures. The research adopts a quantitative approach, utilizing a structured questionnaire distributed to experienced construction professionals. The study evaluates the relationship between key safety management practices including management commitment, safety training, worker involvement, and the adequacy of SOPs and workers' safety behavior. The theoretical framework is rooted in safety management literature, focusing on the link between safety protocols and behavioral outcomes. Preliminary findings suggest that insufficient management commitment and inadequate safety training significantly hinder workers' understanding and adherence to safety procedures, leading to elevated accident rates. This research highlights the importance of robust safety management practices to reduce workplace fatalities and improve operational efficiency in the Malaysian construction industry. The insights derived from this study will inform policymakers and industry stakeholders, providing actionable recommendations to foster safer working environments and enhance the sustainability of the sector.

Keywords: Safety management practice; safety participation; awareness level; Standard Operating Procedure (SOP)

INTRODUCTION

The construction industry is inherently hazardous, involving many individuals with distinct roles contributing to the completion of projects. Ensuring a safe workplace is a cornerstone of the industry's operational competence and efficiency. Safety in this context refers to the protection of workers' physical, social, spiritual, financial, political, emotional, vocational, and psychological well-being, thereby minimizing exposure to potential hazards and their triggers. Safety should be a primary focus, embedded in all processes, rather than an afterthought. Implementing comprehensive safety programs and policies is crucial in minimizing workplace accidents, as it shapes workers' attitudes and behaviors, contributing to improved safety management and reduced injuries. Workplace injuries not only result in significant financial costs such as compensation payouts, lost productivity, and absenteeism but also impose non-monetary effects on both the injured employees and their colleagues. Those effect has also been observed in the educational institutions especially involving skills education (Talib, Mohd Zulkifli & Mohammad Hussain 2023). These can include psychological trauma and strained interpersonal relationships. Understanding the multifaceted consequences of accidents underscores the importance of safety research as a critical field of study, particularly in the construction sector, where the risks are amplified by the nature of the work environment. This following four is the Research Objectives 1. To evaluate the role of upper-

level management in promoting safety culture on Malaysian construction sites.2. To explore the impact of safety training programs on reducing workplace injuries.3. To assess the importance of worker involvement in safety practices and decision-making.4. To investigate the clarity and effectiveness of safety rules and procedures in enhancing safety participation among workers.

THE SUPPORT OF MANAGEMENT AND EMPLOYEES IN SAFETY

Everyone appears to agree that getting upper-level management on board is key to lowering the number of workplace accidents (Hsu et al. 2008). This is due to the fact that the level of dedication shown by upper management toward safety-related initiatives is indicative of how seriously these matters are taken by the management of the business as a whole (Yule et al. 2006). When upper-level management prioritizes worker safety, they will take preventative measures to detect, assess, and mitigate potential dangers. In general, the incidence of accidents and injuries decreases when workers believe that their supervisors care about their well-being (Díaz-Cabrera et al. 2007). In the construction business, where limited resources may impede a more organized system for occupational safety and health, the dedication of upper management to safety is essential for reducing the occurrence of accidents.

SAFETY TRAINING AND SAFETY PARTICIPATION

It is well-documented that safety training has a role in encouraging workers to participate in safety measures (Barling et al. 2002, Hare et al. 2006). In educational sectors, the significance of following safety protocols, safety training may help organizations avoid and manage accidents (Gooding & Wagner 1985; Talib, Mohd Zulkifli & Mohammad Hussain 2023). The success of occupational safety and health programs relies heavily on effective safety training, as it improves behavioral skills, related knowledge, attitudes, and acts as a catalyst for accident prediction, particularly for new employees (Hare et al. 2006). Lacks safety training can increase the accident risk during working and increase the cost for accident management (Wang et al. 2018). Previous study highlighted 52 work-related injuries and accidents are the main concern for the construction company at Klang Valley, which has been given the dangerous and risky nature of working environment (Faridahwati, Sri Ramalu, & Zuraidah 2018). One of the reasons for these incidents to take place was safety training. In the year 2016 alone, 30% of construction employees reported occupational injuries. In financial terms, annual back injuries alone have been projected to cost RM 16 million in medical treatment, worker's compensation benefits, employee turnover costs due to injuries. Due to the great cost of injuries stressed above, researchers and practitioners of occupational safety have identified the reason is safety training since there is lack of knowledge and skills that improve employee safe behaviour in the construction industries (Faridahwati, Sri Ramalu, & Zuraidah 2018).

WORKER INVOLVEMENT AND SAFETY PARTICIPATION

Worker engagement, as defined in safety literature, is a behavior-based strategy that involves individuals or groups in an organization's decision-making processes and upward communication channels (Saks 2006). Worker involvement may serve as an effective technique to promote participation in safety measures within the construction sector. According to Saks (2006), employees are the most reliable source for input on enhancing workplace safety, since they are the individuals directly engaged in the tasks. Employees may express their thoughts and suggestions about safety concerns directly to management, since the employer-employee connection is less formal and more personal owing to the significant demands of construction (Goetsch 2008). Research indicates that employees exhibit more investment and receptiveness to choices impacting them when afforded a voice, thereby enhancing their job performance (Ford & Tetrick 2011). Worker engagement in safety-related matters enhances their feeling of ownership over the solutions, hence reducing the incidence of accidents and injuries (Minter 2003). Workers' psychological empowerment via involvement in safety committees directly stems from their participation in the safety management process, identified by Lu and Yang as the paramount element influencing an organization's safety performance (Lu & Yang 2011). Minter's (2003) examination of health, safety, and environmental data indicates that organizations promoting employee involvement in health and safety efforts have reduced injury and accident rates. Previous research (Minter 2003) similarly shown improvements in risk awareness and productivity.

SAFETY RULES AND PROCEDURES AND SAFETY PARTICIPATION

Organizational clarity about purpose, duties, and goals; staff engagement prerequisites; and a mechanism to rectify inadequate safety participation are all components of safety regulations and protocols (Fernández-Muñiz et al. 2007). Employers are legally required to take reasonable care for their workers; however, the Occupational Safety and Health Act of 1994 does not delineate the enforcement of this requirement (Malaysia 1994). Management's commitment to workplace safety is shown by the implementation of safety laws and procedures, despite the absence of a legal requirement (Fernández-Muñiz et al. 2007; Ali et al. 2009). Management must communicate with employees in a comprehensible manner to ensure they understand and adhere to safety policies and regulations. In the educational sector, regulations and safety protocols encompass standard operating procedures for the use of instruments and machinery, hazardous material management, emergency preparedness protocols, and safety measures during practical sessions (Talib, Mohd Zulkifli & Mohammad Hussain 2023). Research indicates that safety legislation and practices influence the degree of safety involvement among workers (Fernández-Muñiz et al. 2007; Roldán & Sánchez-Franco 2012).

ELEMENTS FOR EFFECTIVE SAFETY MANAGEMENT PRACTICES

Effective safety management is best understood through established theoretical frameworks such as Safety Climate Theory and Behavior-Based Safety (BBS). Safety Climate Theory, introduced by Zohar (1980), emphasizes the importance of shared perceptions among employees regarding organizational safety policies, procedures, and practices. A positive safety climate reflects management's dedication to safety, which builds trust among employees and fosters a commitment to risk-free practices. This theory underscores the significance of transparent communication, visible support for safety initiatives, and consistent enforcement of safety standards. Behavior-Based Safety (BBS) focuses on modifying workplace behaviors to enhance safety. Rooted in psychological principles, BBS encourages employees to adopt safe practices through positive reinforcement and corrective feedback (Cooper, 2000). By involving employees in safety observations and decision-making, organizations can address human error, which is often a leading cause of workplace accidents.

Management commitment serves as the cornerstone of effective safety management. Upper-level management must visibly prioritize workplace safety by actively participating in safety inspections, incident reviews, and policy updates. This proactive involvement not only ensures resource allocation for safety measures but also demonstrates to employees that safety is a fundamental organizational value.

A comprehensive safety training program is essential for equipping employees with the knowledge and skills needed to maintain a safe work environment. Training should be interactive, role-specific, and continuous, incorporating hands-on activities, video-based learning, and on-the-job demonstrations. Beyond training, employee engagement in safety decision-making processes, such as participating in safety audits or contributing to policy development, fosters ownership and accountability.

Research by Garrett and Perry (1996) highlights the significant reduction in workplace accidents when employees are actively involved in safety decision-making. Recognition and reward systems are effective tools for reinforcing positive safety behaviors. Organizations can motivate employees by acknowledging exemplary safety performance at the individual or team level. These reward systems help cultivate a positive safety culture, where adherence to safety protocols becomes a shared goal, enhancing overall morale and compliance. Continuous evaluation of safety programs is vital for identifying gaps and areas for improvement. Feedback mechanisms, such as surveys and focus groups, provide valuable insights into employee perceptions and experiences. By addressing concerns and adapting strategies based on this feedback, organizations can ensure that safety initiatives remain relevant and effective. The foundation of workplace safety lies in well-documented and clearly communicated policies. Employees must be aware of their roles and responsibilities in maintaining safety standards. Regular updates, training sessions, and visible reminders through signage or other media reinforce these policies, ensuring consistent compliance. The ultimate goal of safety management is to foster a distinct and positive safety culture within the organization. A safety culture encompasses shared values, attitudes, and practices that prioritize the well-being of employees. This involves not only compliance with safety protocols but also proactive behaviors aimed at preventing hazards and injuries. Safety training programs should align with this cultural objective by including supplementary instruction on topics such as safe work practices, emergency response, and safety protocols. Hands-on training, which engages multiple senses, has been shown to enhance learning outcomes. Organizations may also consider alternative methods like video-based or on-the-job training to accommodate diverse learning styles.

METHODOLOGY

The investigation focused on ten distinct building sites located in the state of Johor, Malaysia. Situated at the southern tip of Peninsular Malaysia, Johor covers an area of 19,166 km^2 and is a region of significant economic and strategic importance to the country. Johor is divided into ten districts, each contributing to the state's dynamic economy through services, manufacturing, and other industries. Johor is recognized as one of Malaysia's leading economic powerhouses, alongside Selangor and Kuala Lumpur, and consistently ranks among the top three states in terms of GDP contribution. Its strategic position and infrastructure make it a vital international trade hub. The state boasts the Port of Tanjung Pelepas, Malaysia's largest container port, which plays a critical role in facilitating global commerce. As the 16th busiest port in the world, this port underscores Johor's importance in global supply chains and logistics. The region's robust economy, supported by its industrial and service sectors, complements its thriving construction activities, making it an ideal location for this investigation.

DATA COLLECTION, ORGANIZATION & ANALYSIS

The pilot test was conducted with 34 respondents from various positions, and the reliability of the instrument was assessed using Cronbach's Alpha calculation. According to George and Mallery (2003), Cronbach's Alpha is the general method for determining the reliability of instruments, such as Likert or dichotomous scale questionnaires. The analysis was performed using SPSS version 20.0 to calculate the Cronbach's Alpha value, which ranges between zero and one. As indicated in Table 1, a higher Cronbach's Alpha score, closer to 1, signifies stronger internal consistency among the items within the scale.

TABLE 1. Cronbach alpha value

Cronbach's Alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

After that, 290 employees were given the questionnaire in questionnaire form according to their job responsibilities. Further analyses are based on a combined total of 320 answers. A perfect response rate of 100% is excellent for this survey. The following are the structured questionnaire topics given in the form: site background, management's dedication, safety training, employee participation, and site procedure. There are seven questions for management commitment, six questions for safety training, six questions for worker involvement, and five questions for safety rules and procedures. The descriptive analysis was also done for all items of question in management practices.

Statistical analysis has been applied to all of the survey results. For statistical analysis, SPSS Statistics was used. Released in 1968 as Statistical Package for the Social Sciences (SPSS), the most recent version of the program is officially called "IBM SPSS Statistics" as of 2015.

RESULT AND DISCUSSION

ANALYSIS OF RELIABILITY

Reliability of the survey results was evaluated using the Cronbach's Alpha value, derived from responses collected during the pilot test, which included 34 participants from various positions. Cronbach's Alpha is a widely used statistical measure for assessing the internal consistency of a scale or questionnaire, determining how closely related a set of items are as a group. In this study, the reliability ratings for individual factors ranged from 0.582 to 0.845, reflecting variability in how well the items within each factor correlated. While some factors demonstrated good internal consistency, as evidenced by alpha values approaching or exceeding 0.80, other factors with lower values (below 0.70) suggested room for improvement. Specifically, items with alpha values in the lower range may require rephrasing, better alignment with the overall construct, or reconsideration to enhance clarity and relevance for respondents. The overall survey reliability was indicated by an average Cronbach's Alpha of 0.687, falling within the questionable to acceptable range (Yule et al. 2006). This implies that while the survey as a whole provides a reasonable degree of reliability, there is potential for refinement in certain areas to improve its overall internal consistency. For instance, items with the lowest reliability scores should be critically reviewed to identify ambiguous wording, redundancy, or poor alignment with the intended construct. Table 2 highlights the Cronbach's Alpha values for each factor, providing insight into specific areas that are robust and those requiring adjustments. By addressing these weaker items and refining the survey instrument, the overall reliability can be enhanced, ensuring more precise and valid results in subsequent applications.

TABLE 2. Reliability Statistics

Variables	Number of Items	Cronbach's Alpha
Management Commitment	7	0.673
Safety Training	6	0.845
Workers Involvement	6	0.682
Safety Rules and Procedures	5	0.757
Safety Participation	5	0.583
Standard operating procedures (SOP)	5	0.582
Average		0.687

DEMOGRAPHIC DATA

Table 3 summarizes the demographic data collected from the survey participants, offering insights into their profiles, work experiences, and safety-related behaviors. This detailed demographic breakdown is crucial for understanding the diversity and context of the workforce, which directly influences perceptions and practices related to workplace safety. The majority of respondents (70.6%) identified as "General workers," highlighting the prevalence of this role within the surveyed population. Conversely, only 4.1% of participants fell into the "Other" category, which may include supervisors, administrative staff, or other specialized roles. This disproportion indicates a workforce dominated by general laborers, suggesting that safety initiatives and training programs should prioritize their specific needs and work environments. The survey revealed a significant gender disparity, with 79% of respondents being male and only 21% female. This skewed representation reflects the male-dominated nature of the industry being studied, which may have implications for tailoring safety interventions and addressing gender-specific challenges in workplace safety. The majority held a certificate, indicating a foundational level of formal education. A small proportion (3.1%) fell into the "Others" group, which may include those with degrees or minimal formal education. This finding suggests that safety training materials should be designed to suit a basic to moderate educational level, ensuring accessibility and comprehension for the majority. A significant 85.3% reported attending safety training, with 55.9% participating annually or more frequently. However, nearly a quarter of respondents reported no prior safety training, raising concerns about gaps in safety education and preparedness. This disparity points to the need for consistent and mandatory safety training initiatives to ensure all employees are adequately equipped to handle workplace hazards.

TABLE 3. Demographic data

Demographic Data		Frequency	Percentage
Job	Executive	21	6.60%
	Supervisor	60	18.80%
	General Worker	226	70.60%
	Other	13	4.10%
Gender	Male	253	79.10%
	Female	67	20.90%
Experience	Less than 1 year	82	25.60%
	1-3 years	78	24.40%
	3-6 years	127	39.70%
	7-9 years	32	10.00%
	more than 9 years	1	0.30%
Age	18-30 years old	117	36.60%
	31-40 years old	181	56.60%
	41 years old and above	22	6.90%

continue ...

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Education	Secondary School	81	25.30%
	Certificate	178	55.60%
	Diploma	14	4.40%
	Degree	37	11.60%
	Others	10	3.10%
Accident experience	Yes	142	44.40%
	No	178	55.60%
Frequency of Accident	1-3 times	103	32.20%
	3-6 times	17	5.30%
	7-9 times	21	6.60%
	more than 9 times	1	0.30%
	No Accident	178	55.60%
Safety Training	Yes	273	85.30%
	No	47	14.70%
Frequency Training	Every month	1	0.30%
	Once in 3 months	32	10.00%
	Once in 6 months	60	18.80%
	Once a year	179	55.90%
	Not at all	48	15.00%

EFFECT OF SAFETY MANAGEMENT PRACTICES ON SAFETY PARTICIPATION

This research examined the impact of four safety management practices which are management commitment, safety training, worker involvement, and safety rules and procedures on safety participation among employees. Table 4 showed the descriptive analysis of average mean of items in the questionnaire for those four safety management practices. Each of the management practices was found to be in moderate level for construction workers.

TABLE 4. Descriptive analyses on management practice among construction workers

No	Measurement Item	Mean Score	Std Dev	Interpretation
1	Management commitment	3.467	0.140	Moderate Level
2	Safety training	3.446	0.093	Moderate Level
3	Worker involvement	3.446	0.139	Moderate Level
4	Safety rules and procedures	3.399	0.059	Moderate Level
	Mean Score Total	3.439	0.039	Moderate Level

To validate the relationships between these variables, both Pearson correlation and multiple regression analyses were conducted. The findings indicated a substantial association between the predictors and safety involvement, as shown in Table 5. The multiple regression analysis utilized the Enter Method and revealed a significant effect size, with an R-value of 0.869 and an R^2 value of 0.755. This result demonstrates a strong positive correlation and indicates that 75.5% of the variation in safety involvement can be explained by the combined influence of the four predictors. Furthermore, the model achieved a statistically significant p-value of < 0.001, confirming the robustness of the analysis. Three safety management practices management commitment, safety training, and safety regulations and procedures were identified as having a direct and significant impact on safety involvement. Management commitment played a critical role by fostering a safety-oriented culture, while safety training

equipped employees with the necessary skills to manage workplace hazards (Ford & Tetrick 2011). Clear safety regulations and procedures provided a structured framework for compliance. Worker engagement also contributed positively, although its impact was less pronounced in the model. Together, these findings underscore the importance of a comprehensive approach to improving workplace safety.

TABLE 5. Regression Coefficients for Safety Participation

Variable	B	β	T	*p*	R	R^2	R_{adj}
(Constant)	0.567		3.095	0.002			
Management Commitment	0.166	0.183	3.242	0.001			
Safety Training	-0.211	-0.248	-2.848	0.005	0.869	0.755	0.735
Workers Involvement	0.648	0.654	7.902	0.000			
Safety Rules and Procedures	-0.185	-0.142	-1.654	0.099			

There was a clear correlation between management support, safety education, and compliance with safety policies and procedures, as shown by the results. This study's findings that these safety procedures influence safety performance are in line with those of other studies (Barling et al. 2002; Barling et al. 2003; Hare et al. 2006; Mearns et al. 2003; Cooper & Phillips 2004; Laberge et al. 2014; Deros et al. 2014; Kheni et al. 2010). The research continually highlights the importance of management commitment, safety training, and safety regulations and procedures in improving employee safety performance. Safety measures will not be successful in reducing the occurrence of accidents and injuries unless they get the full support of management. By giving workers the resources, they need to be safe on the job, management demonstrates its commitment to safety and the importance it places on the importance of a safe work environment for the success of the organization (Yule et al. 2006).

Training employees to assist their coworkers and the company in complying with safety regulations and procedures is an important part of management's dedication to a safe workplace. The effectiveness of safety training is measured by the transfer of training, which happens when workers put their newly acquired knowledge and abilities into practice while working safely (Roldán 2012).

Our research found a clear correlation between safety behavior and safety regulations and procedures. Regular safety inspections and strict enforcement of safe work practices ensure that workers are obliged to operate in a safe manner when the organization's rules and procedures are effectively executed. It would seem that good safety procedures and regulations are sufficient in encouraging employees to adhere to the safety standards while doing their job, even if guidance and support from coworkers are essential. Using data collected from a representative sample of Johor, Malaysia, construction workers, this research establishes the reliability and validity of the safety management practices instrument (Yule et al. 2006).

In order to confirm the statistical significance of the factors identified by Pearson's correlation analysis, we ran multiple linear regression (MLR) analyses, the results of which reveal the impact of independent variables on the dependent variable. But before we can accept the data and do the MLR analysis, there are a number of assumptions that need to be satisfied.

Figure 1 displays the histogram of standardized residuals, which reveals a positive skewness. The data distribution on the right side of the histogram is clearly more extended than the data distribution on the left side. On top of that, kurtosis, where the distribution is more peaked than the normal curve, is also shown by the histogram. The reason for this is because the central bars are too high and cut through the typical curvature. A little bit of skewness and kurtosis deviate from normalcy, but it's still within acceptable limits. As a result, we may say that the residuals follow a normal distribution. Results from this study's questionnaire-based analysis corroborated those of the study's 4-factor model of safety management practices. At the same time, there is an alternate model of safety management practices that eliminates one of the six factors: a four-factor model that combines the three interrelated aspects of cognitive competency, difficulty, and emotion into a single component.

The authors of an adaptation of the Safety Management Practices for Estonian secondary school students found that the 4-factor model, which combined the components of Cognitive Competence, Difficulty, and Affect into a single component called Competence, had a better goodness of fit than the 6-factor model (Hommik & Luik 2017).

There is evidence of construct validity, convergent validity, and discriminant validity in the Safety Management

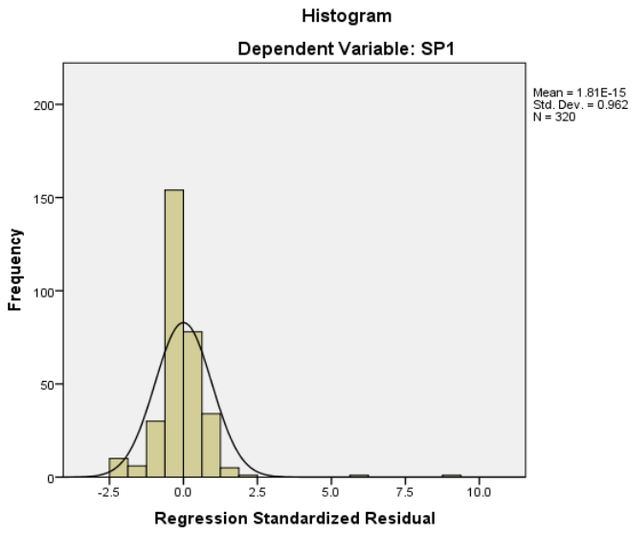

FIGURE 1. Normality Histogram Plot

Practices instrument according to the study's sample, according to the analysis of the questionnaire. Several variables in this research showed strong correlations with one another. Thus, it may be feasible to combine the strongly linked components into a single component and test for a different factor solution; however, this line of inquiry was not pursued in any more depth within this research.

The findings, as summarized in Table 6, reveal that construction workers demonstrate moderate adherence to safety procedures and rules, with a mean score of 3.48 and a standard deviation of 0.608. This moderate compliance is indicative of underlying issues, including weak enforcement of safety regulations, employee resistance to safety systems, and managerial focus on productivity over safety a trend similarly identified in studies by Lingard and Rowlinson (2005) and Choudhry et al. (2007).

TABLE 6. The level of safety rules and procedures among construction workers

No	Measurement Item	Mean Score	Std Dev	Interpretation
1	I know how to perform my job in a safe manner	3.58	0.494	Moderate Level
2	I know how to use safety equipment and standard work procedures.	3.54	0.684	Moderate Level
3	I know how to maintain or improve workplace health and safety	3.48	0.513	Moderate Level
4	I know how to reduce the risk of accidents and incidents in the workplace	3.41	0.680	Moderate Level
5	I know what the hazards are associated with my jobs and the necessary precautions to be taken while doing my job.	3.40	0.669	Moderate Level
	Mean Score Total	3.48	0.608	Moderate Level

To address these challenges, the study emphasizes the necessity for shared responsibility among stakeholders. Managers must take the lead by establishing stringent safety regulations, fostering a culture of safety through comprehensive training, and demonstrating consistent commitment to safety as a priority. This aligns with findings by Mohamed et al. (2009), who highlight management's role as a critical driver of safety compliance. Additionally, empowering workers with the skills and resources needed to adhere to safety standards resonates with the conclusions of Tam et al. (2004) regarding worker involvement in safety initiatives. The study underscores the importance of a well-

structured occupational safety and health management system as a foundation for continuous improvement. However, it acknowledges limitations in current practices observed on construction sites, including inconsistencies in the implementation of safety protocols. This reinforces the need for future research to explore moderating factors such as leadership styles (Zohar, 2002), technological advancements (Teizer et al., 2013), and human resource strategies (Vinodkumar & Bhasi, 2010), which have been shown to significantly influence the effectiveness of safety management systems. These insights pave the way for developing holistic approaches to enhance safety in construction environments.

CONCLUSION

In the field of occupational safety and health, an abundance of resources, tools, and expert guidance is accessible to support safer workplace environments. The increasing number of professionals specializing in safety, advisory services, and consulting reflects a growing emphasis on occupational safety across industries. In Malaysia, the rapid expansion of technological infrastructure has significantly facilitated access to health and safety information, enabling organizations and individuals to address workplace hazards proactively. This easy access to information promotes a culture of safety awareness and preparedness. This research validates the relevance and reliability of Safety Management Practices (SMP) tailored to the construction industry. These practices emphasize four critical components: effective management communication, comprehensive safety training, active worker engagement, and well-defined safety rules and procedures. Together, these elements form a robust foundation for a holistic safety management system. By implementing these practices, organizations can create an environment where safety is prioritized, reducing workplace incidents and fostering a sense of security among workers. When safety measures are effectively communicated and enforced, employees feel valued and confident, which contributes to their overall well-being and job satisfaction. Ultimately, a well-implemented safety management system ensures that construction sites are not only compliant with occupational safety standards but also provide a conducive and enjoyable workplace for all stakeholders.

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DECLARATION OF COMPETING INTEREST

None.

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