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RESEARCH ARTICLE

Workplace Ethics: Instilling safety factors in the palm oil manufacturing industry

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ABSTRACT - The purpose of this study is to look at factors influencing manufacturing workplace safety in the palm oil manufacturing industry. Workplace safety encompasses a set of practices, policies, and procedures designed to create a safe and healthy work environment for employees. The study was conducted using quantitative data and was distributed to respondents using an online platform. The respondent of this study is 68 manufacturing workers. There were three parts to the questionnaire that assessed safety training, management commitment and workplace safety. The data was analysed using Smart PLS and SPSS. The results from this research reveal that both independent variable safety training and management commitment have a positive relationship to workplace safety. The result demonstrates how safety programs help employees learn how to perform their jobs correctly, maintain workplace safety, and reinforce existing safety procedures. The result of this study has further acknowledged the importance of management commitment towards the success of any safety performance.

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1. INTRODUCTION

These days, accidents at work are widely recognized as a key concern for the majority of manufacturing companies (Ali et al., 2017). Often, ensuring a safe workplace environment is regarded as one of the most crucial factors to be considered by employers in conducting their business operations. Workplace safety is important because it protects employees from engaging in serious work-related diseases, injuries, and, in the worst scenario, fatalities. Likewise, workplace safety can prevent business owners from getting involved in the trouble of financial hardship resulting from the impacts of an unsafe act on their employees as well as the unsafe working environment, which could affect the well-being of their employees, their families, and the stakeholders.

In line with the Malaysian government's aims to achieve sustainable economic growth, manufacturing has become one of the major economic activities in Malaysia. The expansion of oil palm plantations in Malaysia has resulted in a multitude of industry-related economic activities, such as palm oil manufacturing. The transformation of crude palm oil into refined oil carried out in mills involved the removal of its colour, flavour, and byproducts of oxidation and hydrolysis. Following refinement, the oil is then divided (fractionated) into liquid and solid phases using thermomechanical techniques such as cooling, crystallisation, and filtering. The liquid fraction, or olein, of the palm oil kernel is widely used as a cooking oil, especially in a tropical country such as Malaysia, Indonesia, India, and China.

The activities in the palm oil refinery industry involve various processes, machinery, and hazardous substances, which can pose serious risks to the workers' well-being and safety. Ensuring workplace safety in the palm oil manufacturing process is a complex issue because some of its procedures may require handling of toxic substances, unsafe human acts, and malfunctions in both mechanical and electrical equipment. Therefore, it is essential for manufacturing firms to take serious and immediate action to prevent and mitigate any potential effect that can lead to work-related accidents (Mitra et al., 2021).

The rise of the palm oil industry and the success of the Malaysian economy have made a substantial contribution to job opportunities for the populace. However, the growth of the industrial industry has also led to an increase in the number of operational-related injuries in the manufacturing industry (Singh et al., 2020). According to Hong et al. (2018), industrial workers are advised to be more aware of some basic safety concepts, such as the ability to recognize potential hazards at work in order to prevent them from becoming injured or sick. Nonetheless, failure to identify hazards at the workplace can result in serious accidents that could have a severe impact on the workers as well as catastrophic consequences to the business's finances. Among the impacts are high medical expenses, workers' compensation payments, and legal service fees (Wiengarten & Longoni, 2018). Furthermore, when production processes are interrupted due to a major accident, it can affect the productivity of the company since the process cannot continue until the cause has been identified and necessary action has been taken (Alsyouf, 2018). According to Dodge (2018), a lack of institutional sophistication exposes workers to disease and injury because of the disregard for proper work procedures or potential harm. If no one in the firm thinks about safety issues, any hazard that exists in the firm will not be identified and dealt with appropriately. This is because the dependence on the employee's effort alone is not enough to manage safety

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at the workplace. The workers require proper training to help them acquire the needed knowledge in safety to understand the hazards that exist in their process. Business firms that give their staff outstanding safety training are likely to experience a reduction in the frequency of workplace accidents (Morillas, Rubio-Romero, & Fuertes, 2018).

According to the Theory of Planned Behavior (TPB), behaviour is closely tied to safety intent, which is influenced by safety attitude, subjective norms, and perceived behavioural control. When creating interventions to avoid workplace diseases and injuries, social and behavioural science theories can become a helpful resource. They can also serve as a guide to identify the multilayered elements that may either impede or advance worker safety and health. The TPB can be used as a tool for predicting and understanding safety behaviours in the workplace. For example, a study conducted by Guerin & Sleet (2021) found that the TPB model was effective in predicting safety behaviours among healthcare workers. The practical significance of this study can greatly impact several business KPIs. Improvement in workplace safety can increase productivity, boost employee morale, and reduce costs associated with accident and injury treatment. Employee productivity and engagement are higher when they feel safe and secure at the workplace. Such an environment can lead to increased profits for the organization and a better work environment. Furthermore, workers are likely to become loyal to their organization and less likely to quit when they believe that their employers are serious about ensuring their safety. This can reduce employee turnover while also saving firms money on hiring new workers and training costs.

Based on the discussion above, it is important for businesses to maintain a safe workplace to safeguard workers' lives and health and prevent manufacturing firms from financial burdens as well as any legal action towards the company. However, there are various factors that could influence workplace safety. Therefore, this research has identified the factors that can influence workplace safety in the manufacturing sector of the palm oil industry in Malaysia. This study is important because it can help manufacturing sectors, particularly the palm oil sector, to become a safer place to work in. Workplace safety, management commitment, and safety training are the variables examined in this study. The workers who work in an organization that processes palm oil are considered to be in the study's context.

Two research objectives have been established in this study.

RQ1: To measure the relationship between safety training and workplace safety.

RQ2: To measure the relationship between management commitment and workplace safety.

2. LITERATURE REVIEW

The palm oil industry plays a significant role in the Malaysian economy, contributing to job creation, rural development, and increased export revenues. Palm oil manufacturing involves the processing of crude palm oil (CPO) extracted from the palm fruit into various refined palm oil products. The process of palm oil manufacturing involves several steps. The first step is the reception of fresh fruit bunches from the plantations. Sterilization and bunch threshing are the next steps to release the palm fruit. Mashing the fruit and extracting the crude palm oil is the third step. To further purify and dry the crude oil for export and storage, more processing is applied (Mrema, 2020). Following milling, refining procedures are used to create a variety of palm oil products. The first step in the process is fractionation, which involves crystallization and separation to produce liquid (olein) and solid (palm stearin) fractions. Impurities are then eliminated by melting and degumming, and later, the oil is bleached and filtered. Palm oil mills play a crucial role in processing fresh fruit bunches (FFBs) into crude palm oil (CPO) and byproducts.

2.1 Safety Issues in the Palm Oil Industry in Malaysia

The palm oil industry is essential to the Malaysian economy since it creates job opportunities and boosts the national economy. It is, nevertheless, also linked to a number of workplace safety issues that can endanger employees' health and welfare. Slip-and-fall accidents, repetitive motion and overexertion injuries, accidents involving equipment, being struck by an object, and exposure to hazardous materials or dangerous chemicals are some of the mishaps that frequently happen in manufacturing companies (Harrell, 2020). Other frequent injury incidents include falling from a height, such as a ladder or a scaffold. Such accidents were related to various causes, which will be discussed in the following paragraph.

The first cause of accidents in the manufacturing industry is due to the lack of safety awareness among the employees. This is because many employers fail to provide the necessary attention to their workers' safety training. Insufficient availability of training resources, such as appropriate training materials, facilities, and equipment, can hinder the implementation of effective safety training programs in the organization. According to Mitra et al. (2021), some industry workers do not wear masks, helmets, or gloves, which are examples of the required personal protective equipment (PPE) that they should wear at the workplace.

The second cause of accidents in the manufacturing industry is a lack of management commitment, which has become a critical determinant of workplace safety performance. Top management should be better equipped to focus on workplace safety because safety concerns usually start with organizational structures and safety procedures (Tappura et al., 2017). Inconsistency in management's commitment to safety can lead to a lack of clear expectations and direction regarding safety practices. When management fails to consistently demonstrate and communicate their commitment to safety, it can create confusion and undermine the importance of safety among employees. According to Hong (2022), employees will have the tendency to take shortcuts and devise dangerous acts if the management team does not give clear safety guidelines

to its employees. Just because the management has asked their employees to lower their expenditures, they might not realize that some of their actions could be dangerous since they might get the impression that safety is unimportant.

Manufacturing firms need to give their staff good safety training experience as a way to reduce the frequency of workplace accidents (Ali et al., 2017). Morillas, Rubio-Romero, and Fuertes (2018) defended that the implementation of occupational health and safety (OHS) by the manufacturing firm will result in a reduction in workplace accident rates. This is particularly significant in the context of Malaysia's manufacturing sectors, which are rapidly progressing due to the introduction of new machinery and cutting-edge technologies. However, participation from the government, companies, and employees is still needed to prevent any mishaps at the workplace.

Accidents can occur during the operation of various machinery and equipment used in the milling process, such as sterilizers, threshers, digesters, and presses. Inadequate maintenance, improper handling of equipment, and lack of safety protocols can lead to incidents such as machinery malfunctions, fires, or explosions. According to Devi (2021), a small explosion occurred on January 16 in Johor, Malaysia, at a biodiesel facility during welding operations on a storage tank at a height of 15 meters. The welder died because of the incident, and two other people were injured. According to Bernama (2021), a man welding on a storage tank at a fatty alcohol plant in Selangor, Malaysia, is another example of an accident related to failure to ensure a safe workplace. The employee fell to the ground on May 1 when the tank exploded from a height of 10 meters. Three other people were hurt, and the man passed away.

2.2 Safety Training

Safety performance is considered to be influenced by a number of practices in the safety management architecture. One of the important safety practices is safety training. This is because it often acts as a method of preventing and controlling organizational accidents by informing staff members of the importance of adhering to safety rules and protocols (Subramaniam et al., 2016). According to reports, safety training has a major positive impact on any company's accident prevention plan since it equips employees with the knowledge they need to complete their tasks safely (Hassan et al., 2020). A well-designed safety training program can encourage workers to act in a safe manner, able to recognize dangers and take preventative measures before an accident occurs. Therefore, management should design comprehensive, methodical safety and health training programs for new employees, pair them with mentors, and use a partner system to help them get acquainted with the safety, health, and quality systems (Subramaniam et al., 2016). Researchers discovered that companies that provided their workers with the necessary safety training had a lower rate of workplace accidents.

From this, researchers have come up with the first hypothesis:

H1: There is a positive relationship between safety training and workplace safety.

2.3 Management Commitments

Management commitment plays an important factor in impacting an organization's safety efforts and programmers' effectiveness for workplace safety (Hassan et al., 2020). A high level of committed safety management requires that the management team include training activities consideration in making their strategic decisions. It should be demonstrated in a clear way and through both their words and their deeds (Hoque et al., 2020). Often, the management's commitment to safety can be seen, especially in the company's safety policy statement (Taufek et al., 2018). The support and encouragement given to staff members shows how seriously senior management takes safety-related issues, which illustrates management's commitment to safety (Subramaniam et al., 2016). If management is concerned about the problem and is committed to finding a solution, there will be less chance that workers will work in a dangerous environment. Employees, on the other hand, will form a positive perception when they believe that the company takes safety seriously (Hong et al., 2018). From this, the researchers have come up with the second hypothesis:

H2: There is a positive relationship between management commitment and workplace safety.

2.4 Workplace Safety

Workplace safety often refers to an organization's working conditions and covers all elements that have an impact on the security and health of its employees (Editorial, 2021). The top management has an obligation to have a clear moral and legal responsibility to create and uphold all workplace safety and health rules and laws in order to reduce the frequency of incidents in the manufacturing sector (Taufek et al., 2018). Workplace injuries can be decreased or eliminated if adequate safety measures are put in place, and all employees will be able to effectively control human error. Therefore, employees should attempt to exhibit a proactive safety attitude, solid safety knowledge, and secure working conditions. Employees must adhere to workplace safety procedures to reduce the number of injuries or accidents. Employees may adopt safety work techniques at work if they believe their safety initiatives are ineffective or if their company takes less responsibility. On the other hand, top management is accountable for all employees' safe working conditions at their place of employment and must take their well-being into account when developing safety and health policies (Taufek et al., 2018). The employer must treat its employees fairly in all its dealings. Establishing safe working practices is crucial for maintaining workplace safety, and both employers and employees need to be aware of this. Employees must not disregard safe work practices because doing so increases the risk of accidents or injuries in the workplace. According to Vredenburgh (2002), the main factors in workplace accidents and injuries that influence productivity are incorrect use

and handling of tools and equipment. Past studies show that if no one in the organization pays attention to safety issues, the hazard will go unnoticed and unaddressed (Dodge, 2018).

2.5 Theory of Planned Behavior

A psychological theory called the Theory of Planned Behavior (TPB) links beliefs and behavior. The theory states that a person's attitude, subjective norms, and perceived behavioral control are the three main factors that influence a person's behavioral intentions. Behavioural intention is the best indicator of human social behavior, according to TPB. The idea to improve the Theory of Reasoned Action's (TRA) predictive power was conceived by Icke Ajzen. TPB was suggested by Ajzen to take perceived behavioral control into account. There was no perceived behavior control in TRA. In several human domains, TPB has been used to look at the connections between beliefs, attitudes, behavioral intentions, and behaviors. These include, but are not limited to, the domains of sustainability, healthcare, sport management, public relations, and advertising (Contributors to Wikimedia projects, 2023). The TPB has been used in several contexts, including entrepreneurship, workplace safety, anti-drug campaigns, and health education (Guerin et al., 2018). For instance, a behavior-based safety approach based on TPB was evaluated, and its implementation was studied in an industrial setting. The past study was also found to use the Theory of Planned Behavior to gain more insight into workers' intentions and behaviors related to workplace safety (Guerin et al., 2018). Using this information, one can create effective safety training programs, identify possible roadblocks to safety compliance, and highlight how important management support is to preserve a safe workplace.

2.6 Conceptual Framework

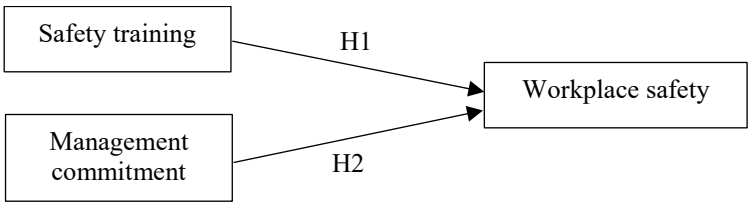

Figure 1. Conceptual framework

From the above literature review, researchers have developed two hypotheses in this study.

H1: There is a positive relationship between safety training and workplace safety.

H2: There is a positive relationship between management commitment and workplace safety.

3. METHODOLOGY

Quantitative methodologies were applied to investigate the factors affecting occupational safety in the palm oil industry in Malaysia. This study is a correlation study since the researcher's objective was to ascertain how all of the independent and dependent variables in the Malaysian manufacturing sector are linked to one another. In addition, the research was carried out based on an unbiased investigation to verify the notion to identify one or more scenario elements and ascertain the nature of the connection.

3.1 Population and sample

The companies selected in this study were selected based on the FMM 2020 directory. The target population for this study is the firms that are related to the palm oil manufacturing firms that are located in Sabah, Malaysia. GPower software was used to determine the sample size, and a minimum of 68 companies should make up the entire sample size based on 0.80 power. Questionnaires were sent out to the e-mail addresses of the respondents by referring to the Federation of Malaysian Manufacturers (FMM) 2020 directory.

3.2 Measurement Development

The measurements in this research were designed using the perceptual scale. A Likert scale was used to measure the construct consisting of safety training factors, management commitment factors, and workplace safety. An interval Likert scale, in which numeric scales of both the order and the exact differences between the values are known, was applied to measure the construct in this study. 5-point Likert scale descriptors were used in this study ranging from strongly disagree to strongly agree. Other actions taken by the author to minimize the common method biases, the author has assured the respondents of the anonymity of the study, emphasising no right or wrong answers, and keeping the questions style simple. A content validity check was conducted involving one lecturer and one industry practitioner who are working in operation management before questionnaires were sent out to the samples. The purpose of this check is to confirm whether there are any weaknesses in the way the question was asked in the questionnaire so that necessary improvements can be made to reduce the risk of potential measurement error. Table 1 shows the questionnaire development used in the survey.

Table 1. Questionnaire development

Variable		Questionnaire	Adapted/ Adopted	Source
Safety training	1.	Employees are given enough training time whether they join our company, change jobs, or use a new technique.	Adapted	Fernandez-Muniz et al. (2009)
	2.	My organization monitors training demands and the effectiveness of previously provided training.		
	3.	Workers at my company receive internal training.		
	4.	My employer has customized training programs that are created based on employment role or section.		
Management commitment	5.	Management takes my personal safety seriously.	Adapted	Dedobbeleer and Beland (1991)
	6.	Management reacts constructively to safety issues that are raised.		
	7.	Management spends enough time engaging with employees about safety.		
	8.	Employees are encouraged to report on or bring safety issues to the attention of management.		
Workplace safety	9.	My company provides employees with Personal Protective Equipment (PPE).	Adapted	Wu et al. (2008)
	10.	My company's machinery is well-protected.		
	11.	My company has excellent airflow systems for dangerous work areas.		
	12.	My company establishes safety & health labels/signage in workplace.		

4. RESULTS AND DISCUSSION

The result shows that out of the 100 companies related to palm oil manufacturing companies listed in the FMM directory located in Sabah, only 87 have returned the survey form. This signifies an 87% response rate for the research work. However, the number was then reduced to 68 after the data cleaning was conducted for incomplete data (missing data), inconsistent data (straight lining), and outliers. Data cleaning was needed to prevent errors during data analysis. Table 2 shows a detailed demographic profile breakdown for the survey distribution and response.

Table 2. Demographic profile

No.	Information	Frequency	Percentage (%)
1.	Years of working		
	Less than 1 year	9	13.23
	1 – 5 years	40	58.82
	6 – 10 years	9	13.23
	11 years and above	10	14.07
	Total	68	100.0
2.	Age (years)		
	Less than 18 years old	1	1.47
	18 – 25 years old	31	45.58
	26 – 33 years old	21	30.88
	34 – 41 years old	6	8.82
	Above 42 years old	9	13.23
	Total	68	100.0

No.	Information	Frequency	Percentage (%)
3.	Position		
	APC Chargeman	1	1.47
	Admin clerk	2	2.94
	Assistant Production	1	1.47
	Clerk	11	16.17
	Engineer	2	2.94
	Field conductor	1	1.47
	HSE Supervisor	1	1.47
	Manager	6	8.82
	Operator	28	41.17
	Sales assistant	2	2.94
	Supervisor	3	4.41
	Team leader	1	1.47
	Technician	6	8.82
	Storekeeper	1	1.47
	Total	68	100.0

According to the table, 58.82% of the participants have been working at the Palm Oil Mill for a duration of 1 to 5 years. Subsequently, 14.07% of respondents have worked for 11 years or more, 13.23% of respondents with less than a year's experience, and 13.23% with 6 to 10 years of experience. Most responders (45.58%) are between the ages of 18

and 25, between 26 and 33 (30.88%), over 42 (13.23%), and between 34 and 41 (8.82%). The smallest percentage are under the age of 18. The majority of respondents (39.70%) had a Diploma or STPM, following workers with an SPM certificate (32.35%), bachelor's degree certificate (16.17%), PMR / PT3 (5.88%), and others (4.41% and 1.47%).

4.1 Summary of Descriptive Statistic

The descriptive statistics of variables involved in this study are explained in this section. Descriptive statistics allow the researcher to understand the salient features of the sample without being bogged down in massive volumes of raw data, which is the reason behind this (Jansen, 2023). Table 3 shows the mean of 3 items that were tested for each variable.

Table 3. Descriptive statistic

Constructs	Mean	Standard Deviation
Safety Training (ST)	3.9912	.68453
Management Commitment (MC)	4.2235	.53144
Workplace Safety (WS)	4.1382	.68785

According to Hoque et al. (2020), The influence of workplace safety increases with a higher mean value. The mean values of the items ranged from 3.9912 to 4.2235. When two or more items happened to have the same mean values, the item with the lowest standard deviation was supposed to be considered the most significant factor (Hoque et al., 2020). Based on the mean value, all the items seemed to have a greater impact on workplace safety in the Malaysian palm oil industry (3.9912 to 4.2235).

4.2 Structural Equation Modelling

This study assessed the measurement model's convergent validity and internal consistency reliability initially. Convergent validity is displayed in Table 4. The loadings, extracted average variance, and composite reliability are usually examined in order to determine the measurement's convergent validity (Gholami et al., 2013). Referring to Figure 2, an outer loading above 0.5 is regarded as acceptable (Chin,1998). Both Cronbach alpha and composite reliability are above 0.7. George and Mallery (2016) state that the composite reliability for all items is greater than 0.7 and that the Cronbach alpha is greater than 0.7, indicating that it is deemed acceptable. This shows that the items measured consistently with the same characteristics. Byrne (2016) states that if the AVE is equal to or greater than 0.5, it indicates that ST and WS satisfy the requirements; however, in this study, the AVE for MC is less than 0.5. Fornell and David (1981) state that the construct's convergent validity is acceptable when the composite reliability is greater than 0.6 but the AVE value is less than 0.5. All the constructs attain convergent validity.

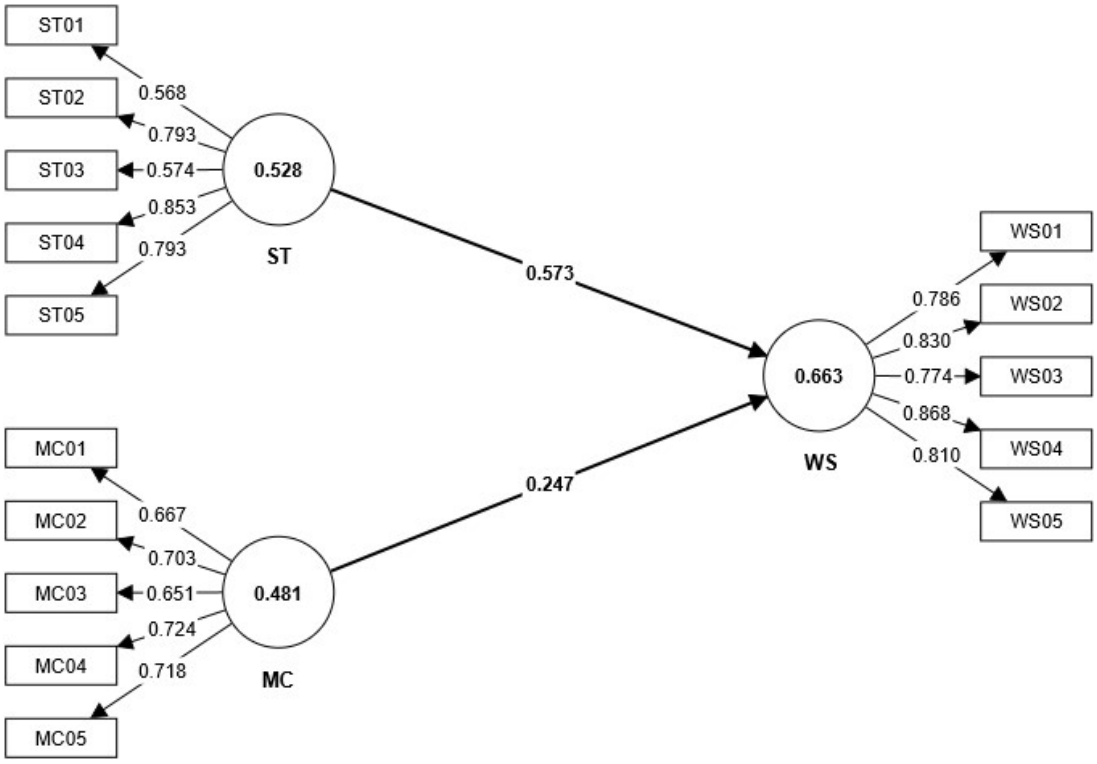

Figure 2. Measurement model

Table 4. Internal consistency reliability and convergent validity result

Constructs	Items	Loadings	α	ρ_c	AVE
Safety Training (ST)	ST01	.568	.792	.844	.528
	ST02	.793			
	ST03	.574			
	ST04	.853			
	ST05	.793			
Management Commitment (MC)	MC01	.667	.732	.822	.481
	MC02	.703			
	MC03	.651			
	MC04	.724			
	MC05	.718			
Workplace Safety (WS)	WS01	.786	.874	.907	.663
	WS02	.830			
	WS03	.774			
	WS04	.868			
	WS05	.810			

Table 5. Discriminant validity result (HTMT ratio)

	MC	ST	WS
MC			
ST	.744		
WS	.710	.718	

A metric for assessing how similar two latent variables which is the Heterotrait-Monotrait Ratio of Correlations (HTMT) is shown in Table 5. Every variable (ST, MC, and WS) has an HTMT of less than 0.90, indicating the demonstration of discriminant validity between the two reflective constructs (Franke and Sarstedt., 2019).

4.2.1 Structural model

Based on a one-tailed analysis, bootstrapping with 68 samples produced the positive hypothesized relationships in the structural model. All of the items statistically have a positive relationship with a t-value above 1.65 and a p-value lower than 0.05. The results show there is a positive relationship between safety training and workplace safety. The t-value for H1 is 5.427, which is greater than 1.65 for a direct relationship, and the p-value is 0.000 ($p < 0.05$), which means that Hypothesis 1 is supported (Hair et al., 2022).

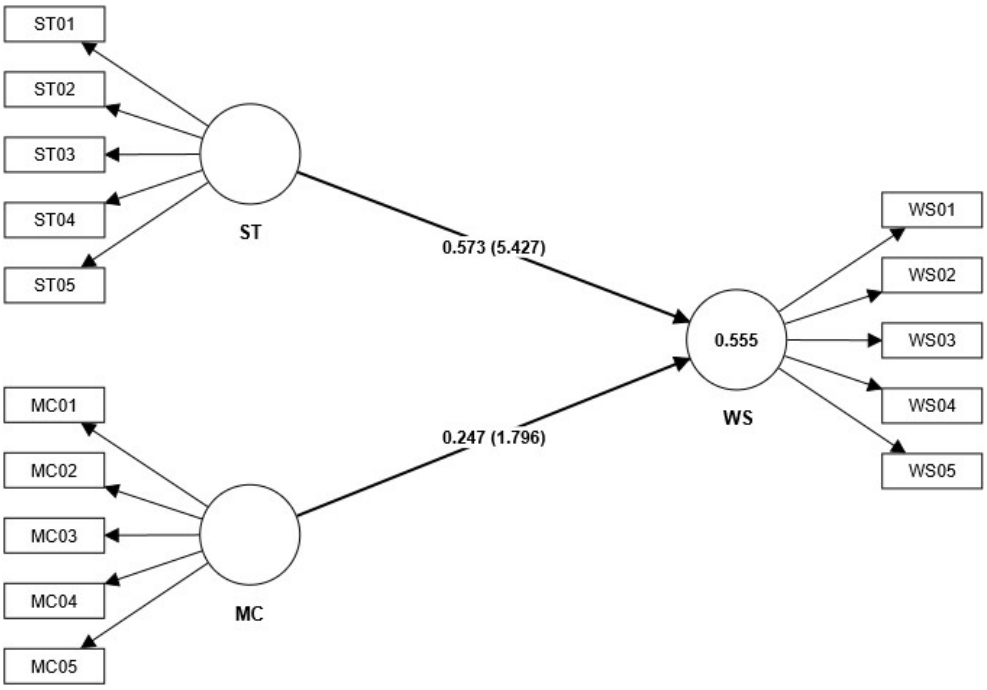

Figure 3. Structural model

The results of H2 show that there is a positive relationship between management commitment and workplace safety. The t-value for H2 is 1.796, which is higher than 1.65 and the p-value is lower than 0.05 (0.036), which means that Hypothesis 2 is supported. The R-squared value indicates the proportion of the dependent variable's variance that the independent variables in the model can explain (Valchanov, 2018). According to Chin (1998), 0.555 for R^2 values is considered a moderate value. The effect size result for H1 (0.460) shows that safety training had a large effect on workplace safety. The effect size result for H2 is considered small, with a value of 0.086 (Cohen, 1988).

Table 6. Significant of hypothesized relationship

Relationships	VIF	β	SD	t - value	p -value	Confidence Interval		Effect Size (f^2)	Explanatory Power (R^2)	Decision
						LL	UL			
H1: ST → WS	1.655	.573	.106	5.427	.000	.384	.729	.460	.555	Supported
H2: MC → WS	1.655	.247	.138	1.796	.036	.007	.465	.086		Supported

4.3 Discussion

This study's objective is to investigate the factors influencing manufacturing workplace safety in the palm oil industry in Malaysia. The first objective of this research is to investigate the relationship between safety training and workplace safety. The results for H1 show there is a positive relationship between safety training and workplace safety. This result was supported by a study conducted by Burdick (2020), which found that training positively affects worker behavior to perform their job properly. Organizations can drastically lower the possibility of workplace incidents by giving employees the knowledge and abilities necessary to recognize and address potential hazards. A workforce that is well-versed in safety procedures is better prepared to navigate their work environment with caution and adherence to established safety protocols. Another study by Gendron (2022) has found that employees who are not properly trained are more likely to make mistakes, which can lead to accidents and injuries. Furthermore, employees who are not trained to follow safety procedures may be more likely to engage in unsafe behaviors, which can also increase the risk of accidents and injuries.

The second objective of this research is to investigate the relationship between management commitment and workplace safety. The research findings demonstrated a positive relationship between management commitment and workplace safety. Table 5 showing the results of H2 is supported. According to Subramaniam et al. (2016), the top management's commitment to workplace safety should play an important role in communicating its values and recognition that workplace safety is essential to the organization by behaving safely while at work. Such action among the top management team is necessary for the success of the organization's safety promotion initiatives to lower workplace accidents (Vinodkumar & Bhasi, 2010). Top-level management's commitment to safety means that they must provide the funds and resources required to carry out the safety vision. Top management can also exhibit their dedication to safety by actively participating in safety-related activities within the company, such as attending safety meetings, conducting safety audits, and personally keeping an eye on workplace safety (Hassan et al., 2020). This research's findings offer empirical proof that firms can benefit from management's involvement in and dedication to preserving a safe workplace for staff members.

5. CONCLUSIONS

In conclusion, factors influencing manufacturing workplace safety in the palm oil industry in Malaysia shed light on critical aspects that contribute to the overall safety landscape in this industry. The findings underscore the significance of safety training programs in enhancing the knowledge and skills of the workforce, thereby positively impacting workplace safety. Comprehensive safety training gives staff members the tools needed to recognize and address possible risks, making the workplace safer. Moreover, the research highlights the pivotal role of management commitment in fostering a culture of safety within the palm oil industry in Malaysia. When management prioritizes and actively supports safety initiatives, employees are more likely to engage in safe work practices, leading to a reduction in workplace incidents and injuries. As the palm oil industry continues to play a significant role in the Malaysian economy, prioritizing workplace safety through effective training and management practices is crucial for the well-being of the workforce and the long-term success of the industry. This research serves as a valuable contribution to the ongoing efforts to enhance workplace safety in the palm oil manufacturing sector in Malaysia.

Employers should embrace the carrot-and-stick approach suggested by Abraham Maslow to encourage staff members to develop safety habits. Management needs to become adept at selecting the best strategy to encourage staff members to uphold a safe workplace in their company. Should the carrot approach prove more effective with staff members, supervisors should learn to incentivize staff members to incorporate safety into all aspects of their workday. At the end of each quarter, awards, commendations, or even cash incentives can be given to the employee who has shown the greatest attention to safety. Future research could consider adding other variables, such as workers' acceptance of workplace safety. Workers' acceptance of safety measures is crucial for a safe and productive work environment. This is because workers who practice acceptance tend to have higher levels of life satisfaction, better mental health, and stronger relationships. When workers feel that their safety is a priority for their employer, they are more confident and comfortable in general, which could lead to a safer work environment.

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AUTHORS CONTRIBUTIONS

Zaleha binti Kadil (Writing-original draft; Data curation; Formal analysis)

Mohd Ghazali bin Maarof (Methodology; Supervision; Resources)

AVAILABILITY OF DATA AND MATERIALS

The data supporting this study's findings are available on request from the corresponding author.

ETHICAL STATEMENT

Not applicable.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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