INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 14, Issue 5, (2024) E-ISSN: 2222-6990

The Relationship between Management Practices and Safety Performance in Manufacturing SMEs: The Moderating Role of Proactive Personality

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To Link this Article: http://dx.doi.org/10.6007/IJARBSS/v14-i5/21572 DOI:10.6007/IJARBSS/v14-i5/21572

Published Date: 16 May 2024

Abstract

One of the challenges encountered by Malaysian SMEs is the high rate of workplace incidents. Thus, this study examined the direct relationship between management practices (employee involvement, training, management commitment, and communication and feedback) and four safety performance dimensions (safety compliance, safety participation, safety outcomes, and employee satisfaction) among 249 SMEs in Malaysia. In addition, the present study explored the role of proactive personality as a moderator of the mentioned relationships. Quantitative data were processed using structural equation modelling techniques through Partial Least Squares. The findings supported the hypothesized direct effects of employee involvement and training on safety compliance and participation, as well as communication and feedback on employee satisfaction. With regards to proactive personality, the study found it to moderate the relationship between communication and feedback and safety outcomes. In order to achieve optimal workplace safety, management should focus on the implementation of management practices and consider proactive personalities to improve the safety level in an organization. This paper recommends that business owners and managers increase the frequency of training for their employees and involve them in safety decision-making. The findings underscore the importance of fostering a comprehensive safety culture within the organization. SMEs should invest in robust and ongoing employee training programs that not only address core safety protocols but also emphasize the importance of active involvement in safety initiatives. Encourage a culture where employees feel empowered to contribute ideas and take ownership of safety practices. Recognize the diverse nature of your workforce by tailoring communication approaches

based on individual characteristics, considering the moderating impact of a proactive personality. Implementing targeted communication strategies for different personality types can maximize engagement and understanding.
Keywords: Employee Involvement, Training, Management Commitment, Safety Performance, Communication/Feedback, Malaysia

Introduction

Malaysia is moving forward to become a developed and high-income nation, and small and medium enterprises (SMEs) remain a crucial element in the country's economic growth. There are 1,151,339 companies in operation all over Malaysia, and SMEs account for 97.2% of the entire number of businesses in the nation (MSME Insights 2021, SME Corp. Malaysia). In 2021, SMEs employed about 7.32 million, or 47.8 per cent, of total employment. In terms of gross domestic product (GDP), SMEs accounted for 37.4 per cent of the overall GDP in 2021 (MSME Insights 2021, SME Corp. Malaysia).

Despite their economic significance, SMEs in Malaysia continue to encounter many challenges. According to several researchers (e.g., Surienty et al., 2011; Zulkifly et al., 2023), one of the challenges faced by Malaysian SMEs is the high rate of workplace incidents, which reflects poorly how the companies are managing safety and employees' welfare. To date, there are no official statistics or reports of the number of incidents among SMEs; however, statistics of the number of incidents by each industry are available from the Social Security Organization (SOCSO). The Director of DOSH Negeri Sembilan stated that the largest contributor to the country's industrial incidents is the SMEs, which account for nearly 90 per cent of workplace incidents ("JKKP giat kurangkan kemalangan tempat kerja," 2015).

Managing safety across various levels, from regulators to the work floor, is a multifaceted challenge influenced by a myriad of factors. The complexity arises from the dynamic interplay of organizational culture, regulatory frameworks, technological advancements, and human behaviour (Dodoo et al., 2023). The spectrum of safety management practices spans a wide array of strategies, including rigorous regulatory compliance, technological innovations, robust emergency response plans, hazard identification and analysis, and continuous improvement initiatives (Dodoo et al., 2023). The present study strives to assess the influence of management practices on safety performance in manufacturing SMEs. Management practices are considered because Petersen's incident theory indicates the accountability of management failure in workplace incidents (Goetsch & Ozon, 2011). According to Barling (2001), management practices can address threats and circumstances that trigger human errors by improving safety standards in the organization. Additionally, management lays out the rules, procedures, and information for the employees, resulting in fewer incidents and injuries in the organization (Mashi et al., 2020; Vinodkumar & Bhasi, 2010). Management practices can be seen as actions conducted by the management to promote the standards of safety performance in the organization.

In navigating this intricate landscape, this study has focused on management practices (employee involvement, training, management commitment, and communication) as pivotal elements. These factors were selected due to their proven impact on fostering a safety culture within organizations (Vinodkumar & Bhasi, 2010). Employee involvement ensures frontline perspectives are considered and is able to increase the safety level in organizations due to the commitment of all employees (Vu et al., 2023). Vredenburgh (2002) asserts that training provides the means for making incidents more predictable, and with training, workers can distinguish hazards and hazardous actions and comprehend the consequences better than

those who were not involved in training. In addition, training enhances skill and awareness. Management commitment sets the tone for prioritizing safety, and effective communication establishes a shared understanding (Vinodkumar & Bhasi, 2010) and plays an important role in determining employees' safety, which results in cost savings and facilitates the organization's management (Zimmermann & Duffy, 2023). While acknowledging the broader spectrum of safety management, the study's emphasis on these specific aspects aims to provide actionable insights and tangible recommendations for SMEs seeking to enhance safety practices.

Although many researchers e.g., Alhammadi et al (2022); Mashi et al (2020) submitted findings on the relationship between management practices and safety performance, some findings are not consistent (Ali et al., 2009; Vredenburgh, 2002). Costella et al (2009) found that employee involvement is crucial in establishing a safer workplace, while Vredenburgh (2002); Ali et al (2009) show that employee involvement does not predict injury rates. This paper introduced proactive personality as a moderating variable to further explain the linkages between management practices and safety performance. Proactive personality is essential in the study of safety performance because proactive individuals are likely to be more concerned about safety at work (Baba et al., 2009) than non-proactive individuals. This is because proactive people look for chances, display initiative, and persist in accomplishing significant change, whereas non-proactive people are usually unable to display initiative and are less likely to grab chances to change things (Din et al., 2023; Kumar & Shukla, 2023). In the context of safety, proactive individuals are likely to implement various safety initiatives to increase the level of safety before incidents happen, while non-proactive individuals tend to react to incidents (Ahmad et al., 2023; Liu et al., 2023). While such reasoning is plausible, to date, no study has considered investigating the impact of proactive personality as a moderator in the correlation between management practices and safety performance in the manufacturing industry of SMEs.

This study contributes to the safety management and SME literature in many ways. The research contributes to the safety management literature by empirically introducing the support of a proactive personality as a potential moderator of the relationship between management practices and safety performance. This study helps expand the body of knowledge by applying a resource-based view to understanding safety performance by considering management practices and proactive personalities as resources of the firms purported to influence the competitive advantage of the organization. In the context of safety management practices and safety performance among SME managers, the resource-based view (RBV) emphasizes the critical role of internal resources and capabilities in fostering a safe work environment. SME managers leveraging RBV recognize that safety-related resources such as employee training programs, safety protocols, leadership commitment, and a robust safety culture contribute significantly to overall safety performance (Tan et al., 2024; Upadhyay et al., 2020). By strategically deploying and integrating these resources, managers can enhance safety practices within the organization, ultimately leading to improved safety outcomes. RBV thus underscores the importance of identifying and leveraging internal safety-related assets to gain a sustainable competitive advantage in safety management, particularly crucial for SMEs where effective resource allocation is pivotal for success in ensuring a secure workplace. Thus, the objectives of this paper are twofold: (1) to examine the relationship between management practices (employee involvement, training, management commitment, and communication/feedback) and safety performance. (2) to investigate the

moderating effect of proactive personality on the relationship between management practices and safety performance.

Safety performance

The term safety performance refers to an organization's safety level. The most well-known safety performance indicators are presented by the Occupational Safety and Health Administration in the US, which records workplace incidents (Arezes & Miguel, 2003). Previous literature Chang & Yeh (2004) determined safety performance as the probability that workplace incidents would result in fatal injury or property damage.

The European Transport Safety Council (ETSC) defines safety performance as "changes over time in the safety level, with a decline in the number of incidents or the number of deaths or injured people, which can be considered a betterment in safety performance" (ETSC, 2001). Safety performance has been frequently used as a metric in safety literature to indicate how successful the safety management system is in the workplace. It is also used in determining the presence of a safety culture (Stricoff, 2000). Lagging and leading safety indicators are two types of metrics used to assess and monitor workplace safety performance. Lagging indicators are retrospective measures that reflect past safety outcomes and incidents, providing insights into historical performance (Vredenburgh, 2002). Glendon et al (2016) identified this as a poor measure of safety performance since it is retrospective, needs more sensitivity, and ignores risk exposure.

Additionally, they argued that organizational incidents rarely happen. Hence, using the number of incidents as a dependent variable leads to a skewed distribution as a result of poor documentation of incidents, injuries, and fatalities. Therefore, the existence of safety cannot be properly measured. Examples of lagging indicators include injury rates, lost workdays due to incidents, and workers' compensation claims. On the other hand, leading indicators are proactive measures that offer predictive insights into potential future safety performance (Christian et al., 2009). These indicators focus on preventive measures and activities that can help mitigate risks before incidents occur. Examples of leading indicators include safety training completion rates, near-miss reporting frequency, and the effectiveness of safety inspections. By analyzing both lagging and leading indicators, organizations can develop a comprehensive understanding of their safety performance and proactively implement measures to prevent incidents and enhance overall safety culture.

Borman and Motowidlo (1997) identified task performance and contextual performance as two major components of job performance. Task performance can be defined as patterns of behaviour that are directly involved in the production of goods and services or activities that offer indirect support to the core technical processes of an organization. It comprises activities that are formally known as part of employees' jobs. Contextual performance refers to individuals' efforts that do not directly relate to their primary task function but are significant in arranging the organizational, social, and psychological context in which this function is performed.

Griffin and Neal (2000) viewed safety performance as one aspect of work performance and used theories of job performance to propose a model of safety performance. They identified two components of safety performance, namely safety compliance and safety participation, which reflect the individual safety performance known as safety behaviour. Safety compliance focuses on behaviours involved in achieving the lowest safety standards at the workplace, for instance, adherence to safety procedures, observance of personal protective equipment, and implementation of safe work procedures. It does refer to

employees' behaviour, which leads to their increased personal health and safety Vinodkumar & Bhasi (2010); Griffin & Neal (2000), and could be considered part of the employees' work responsibility (Clarke, 2006). Safety participation pertains to the behaviours that enhance the safety and health of fellow workers and encourage their organization's goals Vinodkumar & Bhasi (2010) by assisting fellow workers in stimulating the safety programs in the workplace, taking part in optional safety programs, showing initiative, and attempting to enhance safety at the workplace. The behaviour that contributes to overall safety in the organization is part of safety participation (Griffin & Neal, 2000). Safety participation also involves organizational citizenship behaviour, which has a greater voluntary component than the formal roles of the employees (Clarke, 2006).

Fernandez-Muniz et al (2014) incorporated an additional dimension called employee satisfaction in evaluating safety performance after using both methods mentioned above. Fernandez-Muniz et al (2014) argued that the new dimension has gained slight consideration in workplace safety. The present study adopted four dimensions of safety performance: safety compliance, safety participation, safety outcomes, and employee satisfaction (Fernandez-Muniz et al., 2014). Employee satisfaction refers to the overall satisfaction of the employees with the safety at their workplace (Fernandez-Muniz et al., 2014). This dimension receives little consideration in the context of safety at the workplace (Fernandez-Muniz et al., 2014). Workplace incidents and injuries threaten the inner relations in the organization, raise the risk of disagreement, and diminish workers' motivation and satisfaction (Fernandez-Muniz et al., 2009). Therefore, reducing the rate of incidents may create better employee satisfaction. This study uses Fernandez-Muniz et al.'s (2014) conceptualization and four dimensions of safety performance, i.e., safety compliance, safety participation, safety outcomes, and employee satisfaction.

Employee involvement

Employee involvement is defined as the behavioral-oriented technique of involving one person or group in an upward flow of communication and the process of decision-making in the organization (Vredenburgh, 2002). Employee involvement refers to the extent of the involvement of employees in making safety decisions where they are allowed to initiate and achieve safety improvement, are responsible for their actions, and are also proud of the safety performance record in their workplace. The extent of involvement can vary from no involvement, in which supervisors make decisions, to complete involvement, which involves all individuals in decision-making (Beraldin et al., 2022; Mashi et al., 2023; Vredenburgh, 2002). Employees may come up with propositions and feedback on inside and outside improvements when they are involved in the process of decision-making. According to Wiegmann et al (2004), employees demonstrate their eagerness to contribute ideas during safety seminars and training through their involvement. Active adherence to safety operations, the ability to understand the risks involved in daily operations, and the willingness to express concerns on safety issues all illustrate employee involvement.

Previous empirical investigation has revealed that greater employee involvement results in better incident prevention (Asad et al., 2022; Buniya et al., 2023; Mashi et al., 2023). The employees serve a crucial role in incident prevention, and the employer may collaborate with their employees to propose solutions to safety problems. Apparently, these studies show a significant and positive connection between employee involvement and incident rates. Ali et al (2009) revealed that employee involvement was positively correlated with injury rates in industrial zones in Malaysia. This finding argues that even if employees are making

decisions regarding safety issues, these decisions should be executed by the companies since they are from workers instead of management.

In summary, the sets mentioned above of literature affirm that employee involvement has a positive relationship with safety issues and employee performance. The effects of employee involvement on safety issues can theoretically improve safety performance and reduce occupational injuries and incidents at the workplace. Therefore, this study suggests the following hypotheses:

$H1a_1$: Employee involvement is positively related to safety compliance.
$H1a_2$: Employee involvement is positively related to safety participation.
$H1a_3$: Employee involvement is positively related to safety outcomes.
$H1a_4$: Employee involvement is positively related to employee satisfaction.

Training

Safety training is a crucial aspect of ensuring a secure and healthy work environment for employees (Peiró et al., 2020). Such training programs aim to educate individuals on the potential hazards associated with their job roles and equip them with the necessary knowledge and skills to mitigate risks effectively. According to the Occupational Safety and Health Administration (OSHA), training should cover a range of topics, including emergency procedures, proper use of personal protective equipment (PPE), and identification of workplace hazards. Ongoing safety training not only helps prevent incidents and injuries but also fosters a culture of awareness and responsibility among workers, contributing to overall workplace well-being (Rokooei et al., 2023).

As stipulated in the Occupational Safety and Health Act 1994, an appointed safety and health officer shall possess or have received training from time to time. The specific regulation requires the safety and health officer to promote safety and health in the place of work, which includes conducting and organizing periodic safety training (Malaysia Occupational Safety and Health Act and Regulations Act 514, 1994).

A study Leão & Costa (2020) emphasizes the positive impact of safety training on reducing workplace incidents and improving employee well-being. The research found a significant correlation between the frequency of safety training and a decrease in the number of incidents. Additionally, effective safety training has been linked to increased job satisfaction and morale among workers, as they feel more confident and empowered to navigate potential risks. These findings underscore the importance of investing in comprehensive safety training programs to create a safer and more productive work environment.

Vredenburgh (2002) noted that through training, incidents become more predictable, as training helps provide workers with the ability to differentiate between hazards and hazardous actions and understand the outcomes compared to those who are not involved in training. Previous studies have also shown that training can positively influence work outcomes such as employee performance or productivity (e.g., Ichniowski et al., 1997; Mashi et al., 2020). Mashi et al (2023) posit that studies on the effectiveness of occupational health and safety training have proven that training endeavours to improve workers' knowledge and concerns about safe work culture. Furthermore, training is a main factor in developing and implementing safety programs and preventing workplace incidents and incidents that threaten health (Ali et al., 2009).

Vassie and Lucas (2001) assess health and safety management in manufacturing companies in the UK. They found that successful training leads employees to feel a sense of belonging, which consequently makes them more responsible and alert to their workplace safety. A study on safety performance conducted by Enshassi et al (2015) found a substantial relationship between safety training and injury rates, and it further suggested that construction workers should be given appropriate safety and health training. Similarly, the same result was obtained by El-Mashaleh et al (2010), who conducted a study to benchmark safety performance and demonstrated that safety training is vital to improving safety performance. Hence, this study suggests the following hypotheses:

$H1b_1$: Training is positively related to safety compliance.
$H1b_2$: Training is positively related to safety participation.
$H1b_3$: Training is positively related to safety outcomes.
$H1b_4$: Training is positively related to employee satisfaction.

Management Commitment

The commitment from the top level of an organization to implementing safety practices within the organization is essential. Management must be committed to setting goals to improve operations to achieve organizational objectives in implementing a safety culture (Mashi et al., 2023; Roughton & Mercurio, 2002). Goetsch and Ozon (2011) contend that management commitment is the key to the development and implementation of a safety program. It becomes important, especially when there is an attempt to prevent workplace incidents.

The empirical literature consistently underscores the critical role of management commitment in fostering safety compliance within organizational settings. Numerous studies have demonstrated a positive and significant relationship between the level of management commitment to safety and employees' adherence to safety protocols and regulations (Mashi et al., 2023). Organizations with strong management commitment are more likely to create a safety-oriented culture where employees perceive safety as a top priority (Arzahan et al., 2022). This commitment is often manifested through visible leadership actions, the allocation of resources for safety programs, and the establishment of clear safety policies and procedures (Ahamad et al., 2022). Moreover, management commitment serves as a key driver in shaping employees' attitudes and perceptions towards safety, influencing their motivation to comply with safety regulations and adopt safe work practices. The body of evidence consistently reinforces the notion that a robust commitment to safety from organizational leadership contributes significantly to enhanced safety compliance among employees (Gümüş et al., 2023). Furthermore, the literature also supports the positive correlation between management commitment and employee satisfaction, elucidating that when leaders prioritize safety, employees perceive a supportive and caring work environment, leading to heightened job satisfaction (Asad et al., 2022; Fruhen et al., 2022). The cumulative evidence underscores the multifaceted impact of management commitment on safety participation, safety outcomes, and employee satisfaction, thereby emphasizing its pivotal role in shaping a comprehensive and effective safety culture within organizations (Claxton et al., 2022; Vu et al., 2022).

Top management, which is highly committed to safety issues, may provide sufficient resources to support the progress and execution of safety activities (Eiff & Mattson, 1998). The top management may demonstrate their commitment through their efforts by ensuring that each particular operation, including selection, procedures, training, equipment, and work

schedules, are administratively assessed and adapted to improve safety. Indeed, the commitment of upper-level management in an organization is highly acknowledged as embracing vital roles in the promotion of an organizational safety culture (Dedobbeleer & Beland, 1991).

Miozza and Wyld (2002) examined the perspective of American safety professionals on behaviour and incentive-based protection programs. They determine that the success of behaviour-based safety in reducing injuries depends on the commitment and involvement of each level of management. On this basis, a positive relationship exists between management commitment and safety performance. Thus, the following hypotheses are formulated:

$H1c_1$: Management commitment is positively related to safety compliance.
$H1c_2$: Management commitment is positively related to safety participation.
$H1c_3$: Management commitment is positively related to safety outcomes.
$H1c_4$: Management commitment is positively related to employee satisfaction.

Communication/Feedback

Communication is frequently expected to share information with members, coordinate activities, reduce unnecessary managerial burdens and rules, and ultimately improve organizational performance as a managerial tool (Eunju, 2009). In an organization, communication is the appropriate groundwork for the exchange of information, knowledge, and experience (Ngige et al., 2016). To establish proper communication within the organization, the managers must be aware of the details of the communication process and know how to communicate effectively.

Several studies in the field of communication demonstrate the relationship between communication and employee job satisfaction (e.g., Kounenou et al., 2011). Moreover, communication is considered important in creating commitment in organizations (Weiss & Halupnik, 2013). Previous research has empirically revealed the importance of communication and feedback in enhancing safety performance (Bentley & Haslam, 2001; Fernandez-Muniz et al., 2009). Bentley and Haslam (2001) investigated the similarities of safety practices utilized by managers to determine high and low incident rates in postal delivery offices in the UK. The results reveal that safety communication is related to low incident rates. Likewise, Fernandez-Muniz et al (2009) found that safety management systems, including communication, have a positive effect on safety performance. A wealth of empirical evidence consistently underscores the positive association between communication and feedback strategies within organizations and various dimensions of safety (Alshyyab et al., 2023; Ruano-Ferrer, & Gutiérrez-Giner, 2023; Yesilyaprak & Demir Korkmaz, 2023). Extensive literature supports the notion that effective communication and feedback mechanisms significantly enhance safety compliance, as organizations that establish clear channels for information dissemination and regularly provide feedback on safety performance tend to observe higher levels of adherence to safety protocols among employees.

Moreover, studies consistently highlight the positive correlation between communication and feedback and safety participation, emphasizing the role of open communication channels in fostering employee engagement in safety-related activities (e.g., Asad et al., 2022; Alshyyab et al., 2023; Fruhen et al., 2022). Furthermore, the literature also indicates a positive relationship between communication and feedback and safety outcomes, emphasizing that when organizations facilitate transparent communication and provide constructive feedback, they contribute to improved safety performance, reduced incidents,

and enhanced overall safety outcomes (e.g., Curcuruto & Griffin, 2023; Qin & Men, 2023). Additionally, the positive impact of communication and feedback on employee satisfaction is evident, as employees who perceive effective communication and receive constructive feedback on their safety efforts tend to experience greater job satisfaction (Naji et al., 2022; Špoljarić & Tkalac Verčič, 2022). In sum, the body of research underscores the integral role of communication and feedback in promoting safety compliance, participation, outcomes, and employee satisfaction within organizational safety frameworks. Accordingly, the following hypotheses are suggested:

$H1d_1$: Communication and feedback is positively related to safety compliance.
$H1d_2$: Communication and feedback are positively related to safety participation.
$H1d_3$: Communication and feedback is positively related to safety outcomes.
$H1d_4$: Communication and feedback are positively related to employee satisfaction.

Proactive Personality

The fundamental concept of a moderator variable lies in its influence on the relationship between an independent variable and a dependent variable (Baron & Kenny, 1986). In safety performance-related studies, a few moderating variables have been investigated, such as proactive risk management Fernandez-Muniz et al (2014) and size and industry (Yorio & Wachter, 2014). In this present study, a proactive personality is considered a potential moderator in the relationship between management practices and safety performance.

It is essential to understand the moderating effects on the link between management practices and safety performance because proactive individuals are likely to be more concerned about safety at work Baba et al (2009) than non-proactive individuals. A proactive personality is considered a tendency to take action towards affecting one's environment (Bateman & Crant, 1993). In line with this perspective, Baba et al (2009) contend that a person with a proactive personality would facilitate higher levels of performance as they engage with their environment. When there is a better emphasis on safety, the proactive person may be aware of safety as a performance-enhancing factor. Proactive people can look for chances, display initiative, and persist in accomplishing significant change. In contrast, non-proactive people are normally unable to display initiative and are less likely to grab chances to change things (Bateman & Crant, 1993).

Previous empirical studies have considered the proactive personality as a moderator in other contexts. For instance, Zhao et al (2013) conducted a study to investigate the moderating roles of proactive personality in regard to the correlation between workplace ostracism and hospitality workers' counterproductive work behaviours. The results illustrate that a strong proactive personality leads to a poor correlation between workplace ostracism and workers' counterproductive work behaviours, while a low proactive personality results in the strongest relationship. In another study, Tastan (2013) examined the moderating impact of proactive personality on the association between participative organizational climate and self-leadership on innovative behaviour in the context of SMEs in Izmir, Turkey. The result reveals that a proactive personality moderates the correlation between a participative organizational climate and creative behaviour.

A proactive personality, characterized by individual initiative and self-driven action, plays a pivotal role in shaping how employees interact with key organizational elements such as employee involvement, training, management commitment, and communication in the realm of workplace safety. Existing research highlights that individual with a proactive disposition are more likely to leverage employee involvement as an opportunity to engage in

safety practices actively, maximizing its impact on compliance (e.g., Mehmood et al., 2023). Similarly, proactive personalities may intensify the influence of training by proactively seeking opportunities for skill development and knowledge application in safety-related tasks. Moreover, these individuals are likely to amplify the positive effects of management commitment and communication on safety, translating leadership support and effective communication into heightened safety compliance, participation, positive outcomes, and employee satisfaction (Wahab & Blackman, 2023). This integrated framework contributes to a more comprehensive understanding of the intricate interplay between proactive personality and key organizational drivers in promoting a safer and more satisfying work environment. In this present study, highly proactive people are supposed to be more sensitive and take the initiative to solve safety issues, which indirectly improves safety performance (Baba et al., 2009). Thus, proactive business owners will influence their firms' safety performance. Hence, the following hypotheses are offered:

$H2a_1$: Proactive personality moderates the relationship between employee involvement and safety compliance.
$H2a_2$: Proactive personality moderates the relationship between employee involvement and safety participation.
$H2a_3$: Proactive personality moderates the relationship between employee involvement and safety outcomes.
$H2a_4$: Proactive personality moderates the relationship between employee involvement and employee satisfaction.
$H2b_1$: Proactive personality moderates the relationship between training and safety compliance.
$H2b_2$: Proactive personality moderates the relationship between training and safety participation.
$H2b_3$: Proactive personality moderates the relationship between training and safety outcomes.
$H2b_4$: Proactive personality moderates the relationship between training and employee satisfaction.
$H2c_1$: Proactive personality moderates the relationship between management commitment and safety compliance.
$H2c_2$: Proactive personality moderates the relationship between management commitment and safety participation.
$H2c_3$: Proactive personality moderates the relationship between management commitment and safety outcomes.
$H2c_4$: Proactive personality moderates the relationship between management commitment and employee satisfaction.
$H2d_1$: Proactive personality moderates the relationship between communication and, feedback and safety compliance.
$H2d_2$: Proactive personality moderates the relationship between communication and, feedback and safety participation.
$H2d_3$: Proactive personality moderates the relationship between communication and feedback and safety outcomes.
$H2d_4$: Proactive personality moderates the relationship between communication and feedback and employee satisfaction.

Underpinning Theory (Resource-Based View)

A resource-based view evaluates the performance dissimilarities of organizations based on their resources (Peteraf & Barney, 2003). The theory carries out two key assumptions: (1) organizations within an industry may vary in their resources, and (2) these resources may need to be more seamlessly mobile across organizations, so organizational dissimilarities in resources can be very longstanding (Barney, 1991). The theory strives to clarify how organizations maintain unique and maintainable positions in competitive environments (Hoopes et al., 2003). The fundamental idea in the resource-based view is that organizations compete with others on the basis of their resources and capabilities (Barney, 1991).

In the last few decades, the resource-based view of the firm (RBV) has been considered one of the most developing research areas (Barney, 1991). Wernerfelt (1984) introduces the theory of RBV and contends that internal resources can ascertain organizational success. These resources can be either intangible or tangible assets Barney (1991) or capabilities in the form of amassed skills and knowledge (Barney, 1991).

The RBV theorizes the firm as a set of resources, and the importance of each resource in creating added value for a firm differs (Barney, 1991). In addition, he contends that the firm's resources consist of the firm's reputation, employees' knowledge and skills, brand names, and capital equipment. Additionally, he points out that in achieving a sustainable competitive advantage, the firm's resources are a crucial factor. Therefore, superior performance requires the main sources of competitive advantage, which are the valuable, rare, inimitable, and non-substitutable resources of the firm (VRIN). These types of resources are considered the firm's intangible strategic resources (Barney, 1991).

This study focuses on the correlation between management practices and safety performance in the manufacturing industry of Malaysian SMEs, using proactive personality as the moderator. In this study, the researcher has determined management practices as the organizational capital resources, proactive personality as the human capital resources, and safety performance as the competitive advantage. Hence, management practices and a proactive personality can reduce workplace incidents, which in turn can avoid losses and improve a firm’s profitability and performance. In this study, the firm’s performance is viewed in the context of workplace safety, which is safety performance. Therefore, the outcome of a resource-based view of competitive advantage is measured by these four dimensions: safety compliance, safety participation, safety outcomes, and employee satisfaction.

Underpinning Theory (Human Capital Theory)

The human capital theory relates to the proactive personality of individuals. It can be used in all fields because it suggests that individuals or groups who have greater levels of knowledge, skills, personality, and other competencies will achieve greater performance outcomes than those with lower-level competencies (Halim et al., 2016). In other words, the proactive personality of an individual is considered part of the uniqueness and value of human capital (Turban et al., 2017). Meanwhile, Keh et al (2007) viewed a proactive individual as someone keen to be engaged in bold movements. The findings showed that a proactive individual can anticipate future demands and the ability of a firm to introduce new products to the market ahead of competitors. In Malaysian SMEs, people with a proactive personality are more likely to seek out mentoring and to be seen as more deserving of it. Individuals with proactive personalities use new situations as learning opportunities, which can be translated into valuable resources and experiences for the benefit of the organization (Turban et al., 2017).

Materials and Methods

Population and Sample

According to SME Corp. (2023), SMEs are categorized into two sectors: manufacturing and services/other sectors. The definition of each sector is slightly different in terms of sales turnover and number of employees. In the manufacturing sector, SMEs are defined as companies that have sales turnovers not exceeding RM50 million or full-time employees not exceeding 200. On the other hand, SMEs in the services or other sectors are defined as companies that have sales turnover at most RM20 million or full-time employees not exceeding 75. Due to restricted database access to the SME Corporation directory, the researcher has forwarded a special request to the designated staff, specifying the criteria for the samples to be selected. The specified criteria include: (i) the firm shall have full-time employees from 5 to less than 75 (small) or full-time employees from 75 to less than 200 (medium); (ii) the firm shall be in the manufacturing sector. Based on these criteria, a list of 1,153 firms is obtained, which contains the name of the company, address, phone number, fax number, and email address. After grouping the firms according to their size, the number of small manufacturing SMEs is 644, while medium manufacturing SMEs are 509.

G*Power indicated that a minimum of 129 sample size is required in this present study. Based on Krejcie and Morgan (1970), a sample size of 291 is needed for a given population of 1,153. Due to the low response rate in SMEs, the researcher considered the response rate in prior studies such as (Zakaria et al., 2004). Since small and medium enterprises were sampled, a proportionate stratified sampling procedure was used. To implement the proportionate sampling technique, this study follows the steps recommended by Gay and Diehl (1992) and a sample of 361 was chosen from the small enterprise's stratum, which is 56% of the sample size determined (645), while 284 from the medium enterprise's stratum which is 44% from the sample size determined (645).

Data Collection

To increase the response rate, the researcher employed a number of strategies. Before the surveys were mailed, the researcher called the participants to inform them to participate in completing the surveys that they would receive. The researcher also confirmed the firm's address for participants and the person who will answer the surveys. Some of the participants requested to fill out the surveys using online surveys, for which they also gave their email addresses. Then, the researcher mailed the surveys along with a postage-paid reply envelope. A cover letter that explains the purpose of the study and other instructions was attached to the questionnaire. The researcher made follow-up calls to the participants two weeks after the distribution of the survey. Alternatively, the researcher has sent a personal email as a reminder to the non-response participants. The data collection lasted for six months. The questionnaires used for this study were collected from owners and managers of Malaysian manufacturing SMEs. Out of the 645 questionnaires distributed to the participants, 288 were returned. Out of 288 questionnaires returned, 37 were unusable because the participants only filled out half of the sections. Therefore, 251 questionnaires were used for further analysis in this study. Consequently, this makes the response rate 38.9%.

Survey Instrument

This study used the instrument developed by Muniz et al (2014) to measure safety performance from an organizational perspective. Safety performance has four dimensions: safety compliance, safety participation, safety outcomes, and employee satisfaction. Three

items were used to measure safety compliance. An example of the item is, "Employees in my company always comply with the safety standards and procedures." The reliability of the scale reported by the safety compliance instrument was 0.795 (Fernandez-Muniz et al., 2014). Five items were used to measure safety participation. An example of the item is "Employees in my company participate in evaluating risk." The reliability of the scale reported was 0.857 (Fernandez-Muniz et al., 2014). The operational definition of safety outcomes in this study is "the incidents or injury rates in an organization" (Fernandez-Muniz et al., 2014). Participants were asked to indicate their degree of satisfaction on three items, one of which read "Frequency of incidents in my company," on a scale ranging from 1 (extremely dissatisfied) to 5 (extremely satisfied). The reliability of the scale reported was 0.685 (Fernandez-Muniz et al., 2014). Three items were used to measure employee satisfaction. An example of the item is "Employees' complaints about their working conditions in my company" The reliability scale reported was 0.698 (Fernandez-Muniz et al., 2014). These items were measured on a scale ranging from 1 (extremely dissatisfied) to 5 (extremely satisfied).

In this study, the instrument of Vredenburgh (2002), which has a total of 12 items, was adopted. Four practices were involved: employee involvement, training, management commitment, communication and feedback. Three items were measured for each practice. The internal consistency reliability of these scales ranges between 0.74 and 0.86 (Ali et al., 2009; Vredenburgh, 2002). Bateman and Crant (1993) assessed proactive personality with a 17-item Proactive Personality Scale (PPS). The scale was reported to have a reliability coefficient of 0.88. Then, Seibert, Crant and Kraemer (1999) shortened the scale by selecting ten items with the highest average factor loadings across the three studies reported by Bateman and Crant (1993). The shortened version was reported to be internally consistent ($\alpha = 0.86$) (Seibert et al., 1999). The shortened version by Seibert et al (1999) was adopted in this study to measure proactive personality ($\alpha=0.86$). Participants were asked to indicate their degree of agreement or disagreement on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). A sample item is "As an owner, I am constantly on the lookout for new ways to improve workplace safety at my company".

Participants were also asked about their demographic characteristics, including job title, gender, age, educational level, year of company establishment, number of employees, and type of industry. In addition, participants were asked to indicate whether they had any prior safety knowledge. They were also asked whether their company has a safety policy, a safety and health committee, and an employee safety and health officer. These additional questions were important to help the researcher understand the context of their work and better clarify the phenomenon of safety performance. Modifications were made to the original item without changing its intended content; specifically, the changes were made to reflect the owners and managers of the SMEs as participants in the present study. For example, as an owner, I am constantly on the lookout for new ways to improve workplace safety at my company.

Translation of Research Instrument

The questionnaire was initially prepared in English. It was then translated into Malay for the convenience of the participants. Bougie and Sekaran (2019) suggested that the research instrument be prepared in a language well understood by the participant to avoid misunderstandings or any response errors. For this purpose, back-to-back translation was carried out, following Brislin's (1970) technique. The most reliable method for producing equivalent translation instruments is the Brislin translation model. The English version was

translated into the Malay language by an expert in both languages. This individual has vast experience in translation and has attended various courses in translation. The Malay version was then back-translated into English by another expert in both languages who provided translation services at a public university. The back-translated version was then compared with the original version, and no major rewording was needed for the instruments. Finally, the questionnaire was prepared in both languages for respondents' convenience.

Data Analysis Technique

To examine the research model in this study, SPSS was used first to screen the data to ensure that it was suitable for partial least squares structural equation modelling (PLS-SEM). The PLS approach constitutes a variance-based structural equation modelling technique (Chin, 1998). Specifically, Smart PLS 3 software was utilized to test the measurement and structural model. The use of PLS has been increasingly recommended to overcome the limitations of more traditional statistical analysis techniques due to its advanced features (Ringle et al., 2005). The rationale for using PLS is that it has the benefit of simultaneously assessing the relationship among constructs (structural model) and relationships among indicators and their corresponding latent constructs (measurement model). In addition, the PLS-SEM approach is one of the most powerful statistical tools in social and behavioural sciences that simultaneously tests various relationships (Tabachnick & Fidell, 2013). Given that the proposed study investigates the moderating effect of proactive personality on the relationship between management practices and safety performance, the test of hypothesized relationships is more appropriate.

Results

Respondents' Profile

The majority in the sample, that is, n = 145 (58.23%), were managers, followed by executives n = 56 (22.49%), directors n = 42 (16.87%), and CEOs n = 6 (2.41%). The majority of the sample was male (n = 160 (64.3%)), while the remaining n = 89 (35.7%) were female. Participants' ages indicate that they are relatively older (M = 42.9237, SD = 10.36463). With regards to the participant's educational level, most of them have a bachelor's degree (n = 123, 49.4%), followed by a diploma (n = 64, 25.7%), a master's degree (n = 30, 12%), a certificate (n = 21, 8.4%), secondary school (n = 8, 3.2%), and a PhD (n = 3, 1.2%).

Most of the participants were from the metal industry (n = 35, 14.1%), followed by chemical and petrochemical (n = 34, 13.7%), food and beverages (n = 28, 11.2%), machinery and engineering (n = 26, 10.4%), and transportation (n = 22, 8.8%). The majority of the participants have prior safety knowledge (n = 191, 76.7%), while the remaining do not have prior safety knowledge (n = 58, 23.3%). In addition, the majority of the companies have a safety policy (n = 235, 94.4%), while the remaining do not have a company safety policy (n = 14, 5.6%). Regarding the safety and health committee, the majority of the companies have a safety and health committee in their organization (n = 173, 69.5%), while the remaining do not have a safety and health committee (n = 76, 30.5%). Finally, the majority of the company does not employ a safety and health officer (n = 137, 55%), while the remaining do (n = 112, 45%).

Descriptive Statistics

The descriptive statistics include the mean, standard deviation, maximum, and minimum values. The overall mean ranged between 3.5408 and 4.0763. Specifically, the mean

and standard deviation of safety compliance were (M = 3.7390, SD = 0.69955) (refer to Table 1). This suggests that safety compliance is moderate. The mean and standard deviation of safety participation were (M = 3.7189, SD = 0.64833). This suggests that safety participation is moderate. The mean and standard deviation of safety outcomes were (M = 3.5408, SD = 0.81922). This suggests that the safety outcomes are moderate. The mean and standard deviation of employee satisfaction were (M = 3.5482, SD = 0.68956). This suggests that employee satisfaction is moderate. The participant's descriptive statistics of the management practices showed that the mean value for management commitment (M = 3.9337, SD = 0.69170) was relatively higher than the mean of the remaining three management practices (refer to Table 1). The participant's descriptive statistics from Table 1 also showed that employee involvement has the lowest mean value (M = 3.7175, SD = 0.74059). Additionally, the participants reported a relatively high perception of proactive personality (M = 4.0763, SD = 0.51568) (refer to Table 1).

Table 1
Results of the Descriptive Statistics of all the Latent Constructs (n=249)

Latent Constructs	Items	Mean	Std. Deviation	Max	Min
Employee Involvement	3	3.7175	0.74059	5.00	2.00
Training	2	3.8795	0.62664	5.00	2.50
Management Commitment	2	3.9337	0.69170	5.00	2.50
Communication/Feedback	2	3.8414	0.69266	5.00	2.50
Proactive Personality	5	4.0763	0.51568	5.00	3.00
Safety Compliance	3	3.7390	0.69955	5.00	2.00
Safety Participation	5	3.7189	0.64833	5.00	2.00
Safety Outcomes	3	3.5408	0.81992	5.00	2.00
Employee Satisfaction	2	3.5482	0.68956	5.00	2.00

Measurement Model Evaluation

Individual item reliability was assessed based on the standardized factor loadings of individual items on their respective constructs (Hair et al., 2014). Normally, standardized loadings should be at least 0.708, which shows that more than 50% of an item's variance is explained by the assigned construct (Henseler et al., 2009). According to Hair et al (2014), outer loadings in the middle of 0.40 and 0.70 have to be examined for exclusion from the scale only when removing the indicator leads to an increment in the composite reliability and average variance extracted (AVE) exceeding the recommended minimum value. In this study, given that the removal of outer loadings between 0.40 and 0.70 increased the composite reliability and AVE values, the guideline for keeping items with loadings 0.70 and above was utilized (Hair et al., 2014). However, PP1 (0.694) and PP7 (0.699) loadings are considered close enough to 0.70, which is acceptable (Hair et al., 2010; Nunnally & Bernstein, 1994). It was revealed that out of 36 items, nine were removed because their loadings were below the minimum of 0.70. Consequently, in the entire model, only 27 items were maintained (refer to Table 2).

Table 2
Loadings, Composite Reliability and Average Variance Extracted

Constructs	Items	Loadings	AVE	CR
Employee Involvement	EI1	0.885	0.685	0.867
	EI2	0.781		
	EI3	0.814		
Training	T1	0.784	0.705	0.827
	T2	0.892		
Management Commitment	MC2	0.861	0.736	0.848
	MC3	0.855		
Communication/Feedback	CF2	0.847	0.689	0.816
	CF3	0.814		
Proactive Personality	PP1	0.694	0.574	0.870
	PP3	0.759		
	PP4	0.815		
	PP5	0.813		
	PP7	0.699		
Safety Compliance	SC1	0.874	0.767	0.908
	SC2	0.908		
	SC3	0.844		
Safety Participation	SP1	0.834	0.710	0.924
	SP2	0.893		
	SP3	0.829		
	SP4	0.854		
	SP5	0.800		
Safety Outcomes	SO1	0.904	0.809	0.927
	SO2	0.929		
Employee Satisfaction	SO3	0.865	0.672	0.802
	ES1	0.901		
	ES2	0.730		

Note: AVE= average variance extracted, CR= composite reliability

In this study, the CR coefficient was chosen to determine the internal consistency and reliability of the constructs (Hair et al., 2014). As recommended by Hair et al. (2014), the CR coefficient should be at least 0.70 and above. As outlined in Table 2, the CR coefficients of the latent constructs in the present study exceeded the minimum acceptable value of 0.70 and over, signifying acceptable internal consistency and reliability of the measures used (Hair et al., 2014). In this study, convergent validity was evaluated by the average variance extracted (AVE) of the latent constructs. As shown in Table 2, all the constructs in this study exhibited high levels of convergent validity, as the AVE values ranged between 0.574 and 0.809.

Discriminant validity is achieved if the square root of each construct's AVE is larger than its highest correlation with any other construct (Fornell & Larcker, 1981). In this study, as shown in Table 3, the correlations among the constructs were compared with the square root of the AVE (bolded values), signifying sufficient discriminant validity (Fornell & Larcker, 1981).

Table 3
Discriminant Validity

Latent Variables	1	2	3	4	5	6	7	8	9
1 CF	**0.830**								
2 EI	0.499	**0.828**							
3 ES	0.338	0.292	**0.820**						
4 MC	0.454	0.782	0.270	**0.858**					
5 PP	0.459	0.517	0.431	0.528	**0.758**				
6 SC	0.299	0.538	0.331	0.527	0.457	**0.876**			
7 SO	0.168	0.164	0.535	0.102	0.252	0.152	**0.900**		
8 SP	0.305	0.583	0.465	0.441	0.525	0.699	0.333	**0.843**	
9 T	0.469	0.659	0.317	0.742	0.489	0.567	0.101	0.486	**0.840**

Note: Diagonals (**in bold**) signify the average variance extracted, whereas the other entries denote the squared correlations

Structural Model Evaluation

In PLS-SEM, the main criteria for evaluating the structural model are the collinearity assessment, structural model path coefficients, coefficient of determination (R^2 value), effect size (f^2 value), and predictive relevance (Q^2). The bootstrapping procedure with a number of 5,000 bootstrap samples and 249 cases was used to evaluate the significance of the path coefficients to generate the t-value and the standard errors of the estimate as it delineates a non-parametric approach for assessing the accuracy of the PLS estimates (Hair et al., 2014). Standardized beta values represent all the relationships in the present study. In addition, in testing the relationships of the structural model, the significance level was set at p 0.05 and p 0.01 (Hair et al., 2014).

Before assessing the hypothesized relationships among the variables in the current study, the researcher used the suggestions of Henseler et al (2016) and utilized the standardized root mean square residual (SRMR) to evaluate the model fit. An SRMR value of zero indicates a perfect model fit, and generally, an SRMR value of less than 0.08 is suggested to achieve sufficient PLS path models. In the present study, an SRMR of 0.079 was observed, demonstrating an adequate model fit (Henseler et al., 2016).

To assess collinearity, the present study applies tolerance and variance inflation factor (VIF) values, which examine each set of predictor constructs individually for each subpart of the structural model. In the circumstance of PLS-SEM, a VIF value of 5 or greater, respectively, shows a possible collinearity problem (Hair et al., 2011). Table 4 showed that VIF values for all constructs were lower than 5, which indicated that the structural model did not have collinearity problems.

Table 4
VIF values in the Structural Model

	ES	SC	SO	SP
CF	1.397	1.397	1.397	1.397
EI	2.813	2.813	2.813	2.813
MC	3.356	3.356	3.356	3.356
T	2.386	2.386	2.386	2.386

Hypotheses of the Main Effects

$H1a_1$ predicted that employee involvement is positively related to safety compliance. The results from Table 5 indicated that employee involvement had a significant and positive relationship with safety compliance among Malaysian manufacturing SMEs (β = 0.263, t = 2.963, p 0.01), supporting $H1a_1$. The result from Table 5 also indicated that employee involvement had a significant and positive correlation with safety participation among Malaysian manufacturing SMEs (β = 0.566, t = 6.937; p 0.01), supporting $H1a_2$. With regard to $H1a_3$ on the influence of employee involvement on safety outcomes, the result showed no significant relationship between employee involvement and safety outcomes (β = 0.179, t = 1.594; p > 0.1). Accordingly, $H1a_3$ was unsupported. With regard to $H1a_4$ on the influence of employee involvement on employee satisfaction, the result showed an insignificant correlation between employee involvement and employee satisfaction (β = 0.087, t = 0.842; p > 0.1). Hence, $H1a_4$ was not supported (Refer to Table 5).

With regard to $H1b_1$ on the impact of training on safety compliance, the result showed a significant positive relationship between training and safety compliance (β = 0.355, t = 4.686; p 0.01), supporting $H1b_1$. The result from Table 5 also indicated that training had a significant positive relationship with safety participation among Malaysian manufacturing SMEs (β = 0.259, t = 4.004, p 0.01). Hence, $H1b_2$ was supported. The result from Table 5 indicated that training had no positive significant relationship with safety outcomes among Malaysian manufacturing SMEs (β = -0.009, t = 0.089, p > 0.1), not supporting $H1b_3$. With regard to $H1b_4$ on the influence of training and employee satisfaction, the result showed no significant positive correlation between training and employee satisfaction (β = 0.178, t = 1.895; p 0.1). Therefore, $H1b_4$ was unsupported.

With regard to $H1c_1$ on the impact of management commitment on safety compliance, the result showed no significant relationship between management commitment and safety compliance (β = 0.072, t = 0.673, p > 0.1), not supporting $H1c_1$. The result from Table 5 indicated that management commitment had no significant and positive relationship with safety participation among Malaysian manufacturing SMEs (β = -0.184, t = 1.968; p 0.1). Therefore, $H1c_2$ was also unsupported. With regard to $H1c_3$ on the influence of management commitment on safety outcomes, the result showed no significant positive correlation between management commitment and safety outcomes (β = -0.078, t = 0.563; p > 0.1). Hence, $H1d_3$ was also not supported. The result from Table 5 indicated that management commitment had no significant positive relationship with employee satisfaction among Malaysian manufacturing SMEs (β = -0.032, t = 0.28; p > 0.1), not supporting $H1c_4$.

With regard to $H1d_1$ on the influence of communication and feedback on safety compliance, the result showed no significant positive relationship between communication and feedback and safety compliance (β = -0.032, t = 0.509; p > 0.1). Hence, $H1d_1$ was also not supported. The result from Table 5 also indicated that communication and feedback had no significant positive relationship with safety participation among Malaysian manufacturing SMEs (β = -0.015, t = 0.256; p > 0.1). As a result, $H1d_2$ was unsupported. Concerning $H1d_3$ on the influence of communication/feedback and safety outcomes, the result showed no significant relationship between communication/feedback and safety outcomes (β = 0.121, t = 1.448; p 0.1). Consequently, $H1d_3$ was unsupported. With regard to $H1d_3$ on the influence of communication/feedback and employee satisfaction, the results showed a significant relationship between communication/feedback and employee satisfaction (β = 0.227, t = 3.529; p 0.01). Hence, $H1d_4$ was supported.

Table 5
Structural Model Assessment Main Effect

Hypothesis	Relationship	Beta	t-value	Decision
$H1a_1$	Employee Involvement -> Safety Compliance	0.263	2.963	Supported***
$H1a_2$	Employee Involvement -> Safety Participation	0.566	6.937	Supported***
$H1a_3$	Employee Involvement -> Safety Outcomes	0.179	1.594	Not Supported
$H1a_4$	Employee Involvement -> Employee Satisfaction	0.087	0.842	Not Supported
$H1b_1$	Training -> Safety Compliance	0.355	4.686	Supported***
$H1b_2$	Training -> Safety Participation	0.259	4.004	Supported***
$H1b_3$	Training -> Safety Outcomes	-0.009	0.089	Not Supported
$H1b_4$	Training -> Employee Satisfaction	0.178	1.895	Not Supported
$H1c_1$	Management Commitment -> Safety Compliance	0.072	0.673	Not Supported
$H1c_2$	Management Commitment -> Safety Participation	-0.184	1.968	Not Supported
$H1c_3$	Management Commitment -> Safety Outcomes	-0.078	0.563	Not Supported
$H1c_4$	Management Commitment -> Employee Satisfaction	-0.032	0.284	Not Supported
$H1d_1$	Communication/feedback -> Safety Compliance	-0.032	0.509	Not Supported
$H1d_2$	Communication/Feedback -> Safety Participation	-0.015	0.256	Not Supported
$H1d_3$	Communication/Feedback -> Safety Outcomes	0.121	1.448	Not Supported
$H1d_4$	Communication/Feedback -> Employee Satisfaction	0.227	3.529	Supported***

Note: ***Significant at 0.01, **Significant at 0.05

The research model explains 37.2% of the total variance in safety compliance, 37.1% in safety participation, 4.2% in safety outcomes, and 15% of the total variance in employee satisfaction. This suggests that four predictors in this study (i.e., employee involvement, training, management commitment, and communication or feedback) and a moderating variable in this study (i.e., proactive personality) collectively explain 37.2%, 37.1%, 4,2%, and 15% of the variance of safety compliance, safety participation, safety outcomes, and employee satisfaction, respectively.

Q^2 values larger than 0 suggest that the model has predictive relevance for a certain endogenous construct (Hair et al., 2014). Table 6 outlines the results of the cross-validated redundancy Q^2 test. The cross-validated redundancy measure Q^2 for all endogenous latent variables was beyond zero, suggesting the predictive relevance of the model (Chin, 1998).

Table 6
Construct Cross-Validated Redundancy

Endogenous Construct	SSO	SSE	Q^2
Safety Compliance	747	548.547	0.266
Safety Participation	1,245	946.588	0.240
Safety Outcomes	747	733.388	0.018
Employee Satisfaction	498	455.157	0.086

Result of the interaction effect

Table 7
Moderation effect of hypotheses testing

Hypotheses	Relationships	Beta	t-values	Decision
$H2a_1$	Employee Involvement*Proactive Personality -> Safety Compliance	-0.237	0.837	Not Supported
$H2a_2$	Employee Involvement*Proactive Personality -> Safety Participation	-0.066	0.366	Not Supported
$H2a_3$	Employee Involvement*Proactive Personality -> Safety Outcomes	0.223	0.793	Not Supported
$H2a_4$	Employee Involvement*Proactive Personality -> Employee Satisfaction	0.232	1.311	Not Supported
$H2b_1$	Training*Proactive Personality -> Safety Compliance	-0.330	1.003	Not Supported
$H2b_2$	Training*Proactive Personality -> Safety Participation	0.290	1.275	Not Supported
$H2b_3$	Training*Proactive Personality -> Safety Outcomes	0.247	1.189	Not Supported
$H2b_4$	Training*Proactive Personality -> Employee Satisfaction	0.288	1.006	Not Supported
$H2c_1$	Management Commitment*Proactive Personality -> Safety Compliance	-0.264	0.952	Not Supported
$H2c_2$	Management Commitment*Proactive Personality -> Safety Participation	-0.260	1.056	Not Supported
$H2c_3$	Management Commitment*Proactive Personality -> Safety Outcomes	0.360	1.236	Not Supported
$H2c_4$	Management Commitment*Proactive Personality -> Employee Satisfaction	0.210	0.986	Not Supported
$H2d_1$	Communication/Feedback*Proactive Personality -> Safety Compliance	0.338	1.175	Not Supported
$H2d_2$	Communication/Feedback*Proactive Personality -> Safety Participation	0.192	0.876	Not Supported
$H2d_3$	Communication/Feedback*Proactive Personality -> Safety Outcomes	0.369	2.433**	Supported
$H2d_4$	Communication/Feedback*Proactive Personality -> Employee Satisfaction	-0.256	0.790	Not Supported

Note: Significance value of two-tailed (Hair et al., 2011): **p<0.05, t=>1.96; ***p<0.01, t=>2.57

With regard to the moderating hypotheses in this study, only one hypothesis is supported. Table 7 supports $H2d_3$, which posits that proactive personality moderates the connection concerning communication/feedback and safety outcomes (β = 0.369, t = 2.433, p 0.05). Specifically, this link is stronger (i.e., more positive) for people with high proactiveness than for individuals with low proactiveness. In other words, under the condition of high proactiveness, owners and managers reported a high level of proactive personality and significantly reported better safety outcomes than owners and managers reporting low proactive personality. As recommended by Dawson (2014), using two-way interaction with a continuous moderator, the result of the path coefficients (β) was used to plot this relationship. As shown in Figure 1, the correlation concerning communication/feedback and safety outcomes is strongest in the case of a highly proactive personality and weakest in the case of a less proactive personality. Owners and managers of different levels of proactive personality did not differ much in safety outcomes under conditions of low communication or feedback. However, large differences were noted under conditions of high communication or feedback. In other words, under conditions of high communication and feedback, owners and managers reporting high levels of proactive personality reported significantly better safety outcomes than owners and managers reporting low levels of proactive personality. Figure 1 below shows that the relationship between communication and feedback and safety outcomes is stronger (i.e., more positive) for people with a highly proactive personality than for people with a less proactive personality. This suggests that in organizations where communication and feedback are high, and owners and managers have an increased proactive personality, safety outcomes can be improved.

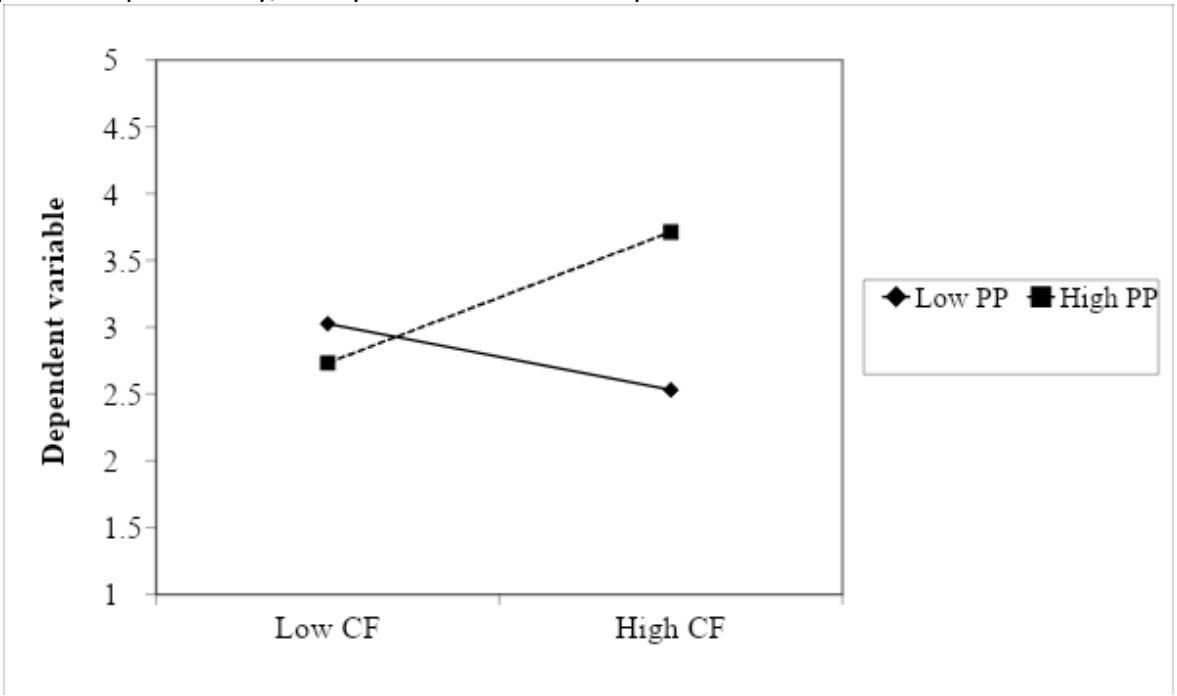

Figure 1. Interaction Effect of Communication/Feedback and Proactive Personality on Safety Outcomes

Discussion

Employee involvement in safety and health issues can increase the overall safety level in an organization (Ariss, 2002; Gibb et al., 2006). It is posited that employees' level of involvement determines safety performance (Vredenburgh, 2002). The results of this study

revealed a significant and positive correlation between employee involvement, safety compliance, and safety participation (refer to Table 5).

In line with the preposition highlighted in the resource-based view by Barney (1991), employee involvement is regarded as a resource that can lead to a firm's competitive advantage (safety compliance and safety participation), which in turn increases the firm's safety performance, avoid losses, and improve the firm's profitability. On a similar note, Dedobbeleer and Beland (1991); Gevers (1983) pointed out that safety compliance could be successfully enhanced through the application of a participative approach to safety. Specifically, employees are given opportunities to share their insights on safety matters, which consequently makes them more likely to act in accordance with safety rules and regulations. The results showed a significant positive relationship concerning employee involvement, safety compliance, and safety participation, suggesting that the involvement of workers in safety issues can create a safer workplace. This finding is congruent with a study by several researchers e.g., Clarke (1982); Gevers (1983); Krause et al (1999); Rooney (1992); Walters (1998), which expressed that the participation of workers at all levels was acknowledged as the medium for sustained enhancement in safety.

More importantly, when employees are involved in safety decision-making, they feel that their management values their input. Thus, they are more likely to comply with and participate in the safety practices in their organization. Shannon et al (1996) also shared the same notion that if the employees are involved in safety decision-making, they are more likely to apply the practices that they have agreed upon in the decision-making process, which in turn increases safety participation.

Apparently, employee involvement was not significantly related to two dimensions of safety performance, namely safety outcomes and employee satisfaction. Previous studies indicate the absence or lack of involvement of workers throughout the design, execution, and assessment of occupational safety and health interventions, which can hinder interventions in which the involvement of employees plays an important role (Masi & Cagno, 2015). In addition, Ford and Tetrick (2011) found that including employees in the process of safety was vital to the organization’s safety performance since such associations empowered the employees emotionally through their participation in safety committees. Ali et al. (2009) contended that though workers are making resolutions regarding safety matters, these resolutions are not being applied by the firms as they are from workers instead of management. Consequently, these resolutions may have little influence on those taken by management. A possible reason for this finding is attributed to the nature of SMEs. It is worth noting that SMEs do not stress the importance of good organizational practices regarding safety, which are important to safety outcomes and employee satisfaction (Boustras et al., 2015). This finding contradicts previous findings in the literature and has to be further investigated in future studies.

The results of this study revealed a significant and positive correlation between training and both safety compliance and safety participation. This indicates that organizations that provide adequate safety training will achieve high safety performance with sufficient safety knowledge and skills. Hence, organizations would more frequently provide their employees with safety training. More importantly, they are aware of the consequences that they may face if they do not engage in safety compliance and safety participation (Neal et al., 2000).

Consistent with the Resource-Based View Barney (1991), owners and managers of SMEs should focus on training their employees towards achieving greater safety performance. Training is regarded as a resource that can lead to a firm’s competitive advantage (safety

compliance and safety participation), which in turn increases the firm's safety performance, avoids losses, and improves profitability. The result indicated that the path coefficient value for the link between training and safety compliance is the highest compared to other tested linkages. This suggests that training is of the utmost importance in elevating safety compliance among SMEs.

This finding is consistent with a study by several researchers e.g., Sgourou et al (2010); Vinodkumar & Bhasi (2010); Zacharatos et al (2005), which expressed that training is important to improve safety in the workplace. In addition, Krause et al (1999), Chhokar and Wallin (1984); Lingard (2002) revealed that training improves safety issues. Safety training aids the workers in acquiring safety skills and knowledge to execute their work in accordance with the safety measures. Safety training also improves their understanding of safety practices and their importance in their working context (Neal et al., 2000). Hence, they are more likely to engage in high-safety performance at work.

One possible reason why training predicts safety compliance and safety participation in the context of SMEs in this study could be attributed to the Occupational Safety and Health Master Plan 2021-2025. SMEs are being given occupational safety and health training in order to comply minimally with government regulations (Department of Occupational Safety and Health, 2023). This can be an avenue for the employees and owners/managers to interact with each other, which can improve their safety compliance and safety participation in the organization, such as by putting in extra effort to increase safety at the workplace and motivating their fellow workers to work safely. Vredenburgh (2002) also shared the same notion that organizations that are constantly encouraging workers to attend safety training programs would benefit from employee safety compliance and participation.

Apparently, the findings revealed that training was not found to be related to two dimensions of safety performance, namely safety outcomes and employee satisfaction. Komaki et al (1980); Vredenburgh (2002) contend that training alone is an inadequate means of improving safety outcomes. There is a need for more intervention to change workers' behaviour towards positive safety outcomes (Zohar & Polachek, 2014). Champoux and Brun (2003); Legg et al (2015) assert that SMEs need a structured occupational safety and health management system due to a lack of resources and a low level of management and training skills, which affect safety outcomes. Another possible reason that can lead to a non-significant result is that training is more voluntarily based, and not all employees are required to attend safety training in the Malaysian context. Ali et al (2009) pointed out the ineffectiveness of training in reducing injury rates.

Contrary to the hypothesis proposed, management commitment was found to be insignificantly correlated with safety performance. In other words, management commitment could have predicted safety performance in Malaysian manufacturing SMEs. This result is consistent with previous studies by Cui et al (2013), which found that management commitment was not significant in predicting safety performance in a coal mining company in China. Jarvis et al (2014) contended that safety at the workplace requires not only a real commitment from organizations, where all workers and the employer commit to and participate in health and safety activities but also an appropriate organizational structure in order to share values and practical safety knowledge. Another possible reason is that the problems with safety management are most frequently attributed to the owners and managers of small enterprises, which have to handle many different issues at the same time. Consequently, safety and health are only sometimes high on the agenda Hasle & Limborg (2006), which results in safety and health in SMEs being neglected.

Contrary to the hypothesis proposed, communication and feedback were found not to be significantly associated with safety compliance, safety participation, and safety outcomes. In other words, communication and feedback failed to predict safety compliance, safety participation, and safety outcomes in Malaysian manufacturing SMEs. This finding further contributes to the mixed results in the previous studies (e.g., Glendon & Litherland, 2001; Lu & Yang, 2011; Vinodkumar & Bhasi, 2010). For instance, Barbeau et al (2004) state that the absence of communication or the insufficiency of communication between management and employees or among the employees themselves in SMEs is due to language and literacy skills. In addition, SMEs have poor connections with supportive bodies that equip them with appropriate information on risk avoidance, and they need more time, means, and tendency to seek the information themselves (Champoux & Brun, 2003; Walker & Tait, 2004).

Apparently, this study found that communication and feedback were significantly and positively related to employee satisfaction. Hadjimanolis et al (2015) found that safety information available to employees was positively and significantly related to safety performance. One plausible reason is that when the employees are well communicated with regarding safety information in their workplace, it will increase their satisfaction with safety in the organization. Frequent communication concerning safety issues among managers and employees is a helpful practice for enhancing workplace safety (Vinodkumar & Bhasi, 2010). Thus, the better the communication level between managers and employees, the more employees become involved in safety, which in turn improves employee satisfaction because the employees feel like a vital part of the organization and that the organization respects their views and contributions (Fernandez-Muniz et al., 2012).

As postulated in this study, the results revealed a significant moderating effect of proactive personality on the relationship between communication, feedback, and safety outcomes. The above findings are consistent with other studies that found a significant moderating role for proactive personality (Zhao et al., 2013; Tastan, 2013; Samad, 2007; Harvey et al., 2006). For instance, Joo and Lim (2009) found that proactive personalities moderated the link between organizational learning culture and organizational commitment among Korean employees.

One possible reason could be attributed to the fact that owners and managers with proactive personalities view the importance of communication as highly important. Owners and managers with a high level of proactive personality are more likely to form safety regarding advance assistance and greater performance. Proactive people, where there is an improved prominence on safety, may be aware of safety as a performance-enhancing factor. Proactive owners and managers usually give safety communication high priority. This will definitely increase safety outcomes in their organization. In essence, highly proactive owners and managers knew that failure to communicate information before incidents occurred might result in serious problems for their organization (Cigularov et al., 2010).

Surprisingly, a proactive personality was not found to predict the facets of management practices on safety performance. One possible reason for the absence of support for employee involvement might be that employee involvement is variable and related to employees, not owners or managers. Owners and managers also participate in improving their firm's safety performance instead of the employees. Wu et al (2008) contend that management should more visibly involve personnel in decisions affecting the safety of their jobs. The plausible reason why training did not predict safety performance could be that the training was given to employees rather than owners or managers. Instead of giving training to the employees, owners and managers should also engage in training to achieve greater

safety performance. Wu et al (2008) assert that management could and should become more visibly involved with safety training to develop a positive safety culture in an organization.

The plausible reason why management commitment was not significant could be that management needs to be committed to their workplace safety. In the context of SMEs, occupational safety and health are frequently observed as extraneous as they do not have a vast labour force. Occupational safety and health execution cannot be interpreted as quick financial gain for the firm and, as a consequence, appears to be insignificant for firms' sustainability (Lamm, 1997; McKinney, 2002).

Implications, limitations and directions for future research

Based on the gap highlighted in the literature, this study has successfully contributed to answering all the research objectives and questions raised, in spite of some limitations. This study successfully investigated the relationships concerning management practices, proactive personalities, and safety performance in Malaysian manufacturing SMEs. Taken together, this study has provided additional empirical evidence in the emerging safety literature regarding proactive personality as a moderator. The findings also advanced many theoretical contributions. Firstly, even though there have been various studies that investigated safety performance, this study addressed the important theoretical research gap by incorporating proactive personality as an essential moderating variable in safety literature. Secondly, the study's theoretical framework has also provided additional partial support for the utility of the Resource-Based View by examining the influence of management practices on safety performance.

On top of that, the study added to the scant safety literature in SMEs, especially in Malaysia. In addition to the theoretical contributions the study provided, the findings from this research offered significant practical implications for the organization's management on how to enhance their safety performance. Finally, some future research directions were outlined based on the study's limitations. In conclusion, the present study has added beneficial theoretical and practical implications to the growing understanding in the area of safety management.

Findings from the main and moderating effects of the present study have extended beyond the findings of previous studies and thus have contributed current information to the body of knowledge in safety performance research. Firstly, outcomes from this study add to the empirical study on the link between management practices and safety performance, thus offering empirical validation to the theoretical justification of resource-based view (RBV) theory in Malaysian manufacturing SMEs. More significantly, the inclusion of RBV into the research model showed the importance of this theory in safety management research. In this study, employee involvement, training, communication and feedback, and proactive personalities were viewed as resources leading to safety performance as an organization’s competitive advantage, which in turn helped avoid losses and improve the firm’s profitability and performance.

Additionally, there are few empirical studies on the SME context. Therefore, this study contributed to the literature by empirically testing the role of management practices on safety performance in the Malaysian context. Finally, incorporating management practices with proactive personalities into one model showed how individual differences, together with management practices, can be used in safety literature to predict safety performance. The findings underscore the importance of fostering a comprehensive safety culture within the organization. SMEs should invest in robust and ongoing employee training programs that not

only address core safety protocols but also emphasize the importance of active involvement in safety initiatives. Encourage a culture where employees feel empowered to contribute ideas and take ownership of safety practices. Recognize the diverse nature of your workforce by tailoring communication approaches based on individual characteristics, considering the moderating impact of a proactive personality. Implementing targeted communication strategies for different personality types can maximize engagement and understanding.

The findings of this study provide significant implications for business owners and managers of Malaysian manufacturing SMEs to improve safety in their organizations. First, since management practices are important factors influencing safety performance, these factors should be given serious consideration by business owners and managers in designing policies and practices. The study found that when employee involvement and training are high, safety compliance and participation can increase. Thus, to improve SMEs' safety performance and reduce injuries and incidents, management practices (especially employee involvement and training) should be given foremost attention. In addition, employee involvement and training deserve greater attention from management, given that these factors determine safety behaviour. The study recommends that business owners and managers increase the frequency of training for their employees and also encourage them to participate in safety decision-making.

Secondly, even though proactive personality moderated only safety outcomes in this study, business owners and managers can, therefore, endeavour to be proactive people. This could enhance their organization's safety performance and reduce injuries and incidents. Additionally, the findings proved that the relationship between communication and feedback on safety outcomes is stronger (i.e., more positive) for highly proactive owners and managers than for less proactive ones. This indicates that safety outcomes can increase when communication, feedback, and a proactive personality are high. Therefore, owners and managers are recommended to focus on enhancing their proactive personalities to improve safety performance in their organization by actively acting before incidents happen rather than reacting after they occur.

Finally, since employee involvement predicts safety compliance and safety participation in this study, owners and managers in Malaysian SMEs can increase the frequency of their employee involvement by consulting with workers frequently regarding workplace safety and health matters. Furthermore, given that training predicts safety compliance and safety participation in this study, owners and managers in Malaysian SMEs can increase the frequency of their safety training by ensuring that proper training is given to their employees frequently.

This study has yielded some understanding of the importance of management practices on safety performance. However, this research has several notable limitations, both conceptual and methodological. Firstly, this study examined safety performance from a management perspective. Other factors, such as safety leadership Fernandez-Muniz et al (2014), may also contribute to or interfere with safety performance. Secondly, this study is exposed to some inadequacies that restrict the clarification of the findings, such as the use of a cross-sectional design for survey research that occupies the insights of participants over some time. Therefore, the study was unable to verify causal relationships on a longitudinal foundation and was therefore limited in explaining factors influencing safety performance more comprehensively. Thirdly, the findings may not be generalized in a larger setting through the cultures of another industry because the data gathered from this study was limited to Malaysian manufacturing SMEs. Different industries and business environments

may have differential effects of management practices and proactive personalities on safety performance so that other studies can explore their relationships in different contexts.

While there are limitations that should be recognized while understanding the outcomes, the present study also recognizes opportunities for further research. Future research directions derived from this study can be summed up as follows: First, further research to examine the generalizability of the results is required to enhance the effect of the factors on the improvement of safety performance in manufacturing SMEs through other variables, for example, safety culture and safety leadership. Second, given that the survey research in this study was derived from a cross-sectional design, additional effort is required to indicate the effect of variations over an extended duration in aspects of management practices and proactive personality. Hence, future research should consider longitudinal studies to investigate how safety performance is affected by management practices and proactive personalities. Third, the study sample is limited to Malaysian manufacturing SMEs. Future research should reflect on replicating this study in different civilizations and countries, specifically in terms of the moderating influence of proactive personality.

On top of that, future research should also be conducted in other sectors aside from manufacturing, such as construction, agriculture, forestry, fishing, mining, and quarrying, to broaden knowledge about the factors that play a part in the refinement of safety performance in Malaysia. Finally, given that this study utilized a quantitative approach in its design and analysis, the data collected is minimal compared to the questionnaire replies. The utilization of a qualitative approach should be included in further research since this approach imparts comprehension of and understanding of the drawbacks. This study's results would be more significant if quantitative and qualitative approaches were utilized because they complement each other.

Conclusion

Based on the gap highlighted in the literature, this study has successfully contributed to answering all the research objectives and questions raised, in spite of some limitations. This study successfully investigated the relationships concerning management practices, proactive personalities, and safety performance in Malaysian manufacturing SMEs. Taken together, this study has provided additional empirical evidence in the emerging safety literature regarding proactive personality as a moderator. The findings also advanced many theoretical contributions. Firstly, even though there have been various studies that investigated safety performance, this study addressed the important theoretical research gap by incorporating proactive personality as an essential moderating variable in safety literature. Secondly, the study's theoretical framework has also provided additional partial support for the utility of the Resource-Based View by examining the influence of management practices on safety performance.

On top of that, the study added to the scant safety literature in SMEs, especially in Malaysia. In addition to the theoretical contributions the study provided, the findings from this research offered significant practical implications for the organization's management on how to enhance their safety performance. Finally, some future research directions were outlined based on the study's limitations. In conclusion, the present study has added beneficial theoretical and practical implications to the growing understanding in the area of safety management.

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