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Abstract: The purpose of this study was to evaluate the factors affecting occupational safety performance in Vietnam's construction industry. The survey sample for the study consisted of Vietnamese managers and construction workers, and 255 suitable survey samples were selected from this group. The linear structural model is used to evaluate the data and assess the study hypotheses. The study's findings demonstrated that safety leadership practices and organisational identity had a substantial influence on the safety performance components, including personal protective equipment and safety participation. Psychological empowerment has a significant effect on employees' desire to take part in safety activities. The construction business in Vietnam, which has the greatest rate of occupational accidents of any profession, is the subject of this study, which is the first of its kind in that nation.

Keywords: occupational safety performance; safety practices; organisational identity; psychological empowerment; personal protective equipment.

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1 Introduction

Nearly 6500 occupational accidents occurred in Vietnam in 2021, causing more than 780 fatalities, close to 4 billion VND in financial losses and the loss of more than 116 thousand working days (Quân, 2022). This has highlighted the significance of occupational safety and health for businesses and people throughout the economy. To encourage the prevention, control and reduction of occupational accidents in various industries, both province and central level government periodically issues and implements action plans of occupational safety and health in the first quarter of each year. The creation and implementation of legal documents on the enforcement of occupational safety, the strengthening of inspection and examination activities related to this area, and the strengthening of visits, encouragement, and support policies for families of victims of occupational accidents are just a few of the numerous initiatives started by national agencies (LĐTBXH, 2022). It demonstrates that the government and state management organisations are aware of the serious harm that occupational accidents do to many economic sectors. International Labour Organisation (Organization, 1998) claims that industrial accidents that occur suddenly or without notice result in greater injuries or fatalities. Organisations around the world, not just in one nation, continue to face a severe problem with workplace accidents, occupational illnesses and diseases. An estimated 340 occupational fatalities occur in the USA each day (OSH, 2022). Because the employees' attention to detail varies greatly, some individuals are more prone than others to experience an accident or incident at work. In Vietnam, the frequency of workplace accidents varies considerably by region. Ho Chi Minh City, Hanoi and Dong Nai province have the nation's three highest rates of occupational accidents, according to data from the Ministry of Labor, War Invalids and Social Affairs. Depending on the profession, different levels of work-related accidents happen. The highest percentage of occupational accidents occurs in the construction industry, which is also where 14% of all workplace accidents occur in the nation. Mining and mineral extraction come in second and the manufacture of building materials comes in third (LĐTBXH, 2022). Therefore, scholars, construction industry professionals, and policymakers must comprehend the factors causing the high rate of occupational accidents in this sector in order to develop effective strategies to prevent and improve the situation of this industry. When creating occupational accident prevention and control rules for construction businesses, managers typically neglect the part that employees play in workplace occupational safety management tasks. Consequently, elements that came from workers were disregarded. In order to synthesise the factors affecting the safety performance, we used a thorough qualitative research methodology in this study. We found that psychological empowerment, organisational identity, and safety practices have a significant impact on the safety performance in Vietnam's construction enterprises. Because so few studies have identified a link between psychological empowerment and organisational identity and how they affect an organisation's safety performance, these two traits are less desirable to researchers and managers. Meanwhile, numerous earlier studies have shown that psychological empowerment is a practice that strengthens employees' psychological fortitude, which in turn motivates them to work more actively, passionately, and productively as well as with a result of their increased sense of pride at playing a more significant role in their company (e.g., Mahmoud et al., 2022; Pacheco et al., 2022). The importance of an organisation's identity, on the other hand, is another aspect that raises employee pride in their companies. When employees understand how

important their workplace is, they tend to love both themselves and the company they work for. Employees that have empathy for the company will experience both sadness and joy whether it succeeds or fails since it will affect how well they perform at work (Peng et al., 2020). Thus, the analysis presented above demonstrates that organisational identity may be a factor that motivates employees to engage in safety-related activities and contribute to improving safety performance in firms. Based on the justifications given above, the authors intend to investigate the effects of organisational identity, safety practices and psychological empowerment on safety performance.

The theoretical underpinnings, research methods, research findings, discussion of the findings, benefits and drawbacks of the study, and finally the study's conclusion are provided in the following parts.

2 Literature overview

2.1 Theoretical foundation

Numerous earlier research have assessed social exchange theory, expectation theory and identity theory as having the capacity to explain and forecast employee behaviour through elements connected to job safety (Neal and Griffin, 2004). According to the social exchange theory (Cook et al., 2013), companies ought to give greater thought to the advantages of their employees, such as training them and taking care of their safety, health and well-being. Workers will consequently develop implicit obligations to support the businesses. In addition to carrying out their professional duties, this encourages employees to actively participate in their organisation's membership in the protection and development of a safe and healthy working environment. He and Zhang (2019) contend that because employees are constantly preoccupied with their core tasks, it is challenging for them to automatically focus on safety at work. As a result, organisations must have enticing policies and doable things to improve workplace safety in order to encourage employees to pay attention to safe behaviours while at work. Contrarily, expectancy theory (Miner, 2005) asserts that values, expectations and motivating factors will encourage workers to strive to complete a specific range of work in accordance with the demands and guidelines set forth by the business. In which, value is the anticipated gain or value that employees can obtain as a result of their efforts at work. Values can be emotions that come from within the employee such as satisfaction, or feeling of pride; or it can also be a perception of the values the organisation gives them such as recognition, certifications, promotions or other material rewards. The expectation is the conviction that after working hard, employees will produce outcomes for both themselves and the company. Numerous motivation studies have shown that individual effort is linked to group effort, and employees view collective reward mechanisms as incentives to work hard to carry out stereotyped behaviours and endure suffering that the group as a whole has agreed to. When there is high individual agreement with the group and the organisation, the effort to protect each individual's safety while carrying out the work is a reflection of the safety of the entire group (e.g., Hogg and Terry, 2014; Karau and Williams, 1993). In addition, social identity theory (Tajfel, 1974) is the idea that people believe they are a part of a social group that shares their beliefs, attitudes, actions and values. The individuals who work there will be proud of their company if it has a cultural identity in creating and enforcing safety regulations that are shared by executives and

employees. Because their company exhibits greater professionalism in ensuring the health and safety of its employees, they feel more proud than employees in other firms.

2.2 Safety participation and personal protective equipment

A worker is said to be participating in workplace safety if they voluntarily follow the organisation's specified workplace safety policies and procedures (Bayram et al., 2022). In addition to ensuring safe job performance, safety participation refers to taking part in meetings to debate safety policies and offer suggestions for safety improvements (Neal and Griffin, 2004). The outcomes of individual employee safety may not be immediately improved by participation in meetings, but it does contribute to a safer workplace and promotes a positive attitude toward occupational safety. Additionally, Vinodkumar and Bhasi (2010) claimed that in comparison to other organisations where leaders are less concerned and encouraged to engage in safe behaviour, those with managers actively involved and encouraging employee participation in safe behaviour have more employees engaging in safe behaviour, complaining about unsafe behaviour and making suggestions to improve safety behaviour. As a result, businesses, especially those in the construction industry in Vietnam, where the rate of occupational accidents is the highest across all industries in the nation, should take part in guaranteeing occupational safety in the workplace. Many nations across the world have particular laws mandating employees of businesses to take part in occupational safety and health activities and rigorously adhere to the health and safety at work requirements when moving around the workplace (e.g., Masso, 2015).

The National Institute of Occupational Health and Safety of the USA defines safety protective equipment, also known as Personal Protective Equipment (PPE) in this study, as safety gear like protective clothing, helmets, goggles, or other protective equipment used to shield a worker's body from harm or negative effects from various sources (electricity, chemicals, heat, impact, harmful particulate matter and other hazards) (Hard et al., 2019). Workplace accidents and injuries, according to occupational safety associations and organisations, can be significantly reduced if employees wear the appropriate safety protection equipment. Additionally, Article 23 of the Vietnamese law on occupational safety and health makes it plain that both the employer and the employee are responsible for making sure people are protected while at work (Hội, 2015). Safety helmets reduce the likelihood of accidents that result in brain injuries, while reflective safety gear lessens the impact of fire, electrical discharge, chemicals and carelessness on the job site. Construction workers frequently have to work at heights where they are at risk of falling or being hit by objects falling from above while on the job. For construction workers, wearing complete helmets and other labour protection gear is very important. However, a lot of people in this sector disregard the rules, either because they are unaware of them or because they find the tasks uncomfortable to perform. As a result, it's imperative to proactively follow and implement workplace safety supervision from managers to manage and urge staff to constantly wear appropriate safety protection equipment while working.

Numerous studies have demonstrated that a variety of criteria, including safety compliance and safety participation, play a significant effect in the safety performance of businesses (Clarke, 2006; Syed-Yahya et al., 2022). Wearing PPE while at work is an aspect of safety compliance that has also been in-depthly investigated. In this study, we employed two safety efficacy measures, namely Safety Participation and PPE.

2.3 Research hypotheses and design

2.3.1 Organisational Identification

According to social identity theory (Stets and Burke, 2000), group membership in organisations has an impact on a person's identity (Ford and Tetrick, 2011). Scheepers and Ellemers (2019) implied that organisational identity influences the development of individual identity and, as a result, influences how that person perceives and behaves. This supports social identity theory's explanation of organisational behaviour and confirms that the person has a cognitive, affective and self-determined membership relationship with the organisation. The organisation's members are more likely to develop and preserve its ideals, such as responding to criticism from the outside and to individuals whose activities are harmful to the group (Ford and Tetrick, 2011). When applying identity theory to an organisation, organisational identity can be defined as the traits and ideals that set it apart from other organisations, give it its distinctive identity and make it stand out (Mael and Tetrick, 1992). According to social identity theory, individuals in an organisation where collective safety is prioritised will also be concerned about their own safety as well as the collective's. Thus, the usage of safety protection equipment and actively engaging in safe behaviour will benefit the organisation's safety management system. Sukamani and Wang (2020), in a recent study, demonstrated the existence of statistically significant correlations between workplace, work teams and occupational safety performance at construction sites in Nepal. The statistically significant correlations of earlier research between the environment, the safety culture, the behaviour and attitudes of employees, and the outputs of safety performance at work have also been summarised by Cornelissen et al. (2017) in their systematic review of the literature. Numerous research have also discussed the influence of company identity on workplace safety behaviour (e.g., Hu and Casey, 2021; Thurston and Glendon, 2018). The authors suggest the following possibilities based on the aforementioned arguments:

H1: Organisational Identity (ORG) has a positive impact on the use of personal protective equipment (EQU) by workers in the construction industry in Vietnam.

H2: Organisational Identity (ORG) has a positive impact on the safety participation (PAR) of workers in the construction industry in Vietnam.

2.3.2 Psychological empowerment

Because it examines the role that happy experiences play in motivating employees' positive thoughts and behaviours, positive psychology is a field of study within the organisational psychology disciplines that attracts the attention of many scholars (Seligman and Csikszentmihalyi, 2000). Pleasure, Engagement and Meaning are three groups that demonstrate the optimistic attitudes of employees (Gable and Haidt, 2005). Employees will be inspired to engage in beneficial behaviours in the workplace, such as increased productivity, creativity and safety performance across the board, as a result of these great feelings (Luthans et al., 2007). To better understand the relationship between one aspect of positive psychology – psychological empowerment – and positive behaviour – PPE and safety participation – this study's assessment of occupational safety performance in the construction industry now includes a psychological empowerment variable. In particular, delegation of authority to subordinates is viewed as giving them additional power and autonomy in decision-making (Conger and Kanungo, 1988). Giving

staff members the self-assurance and psychological stability they need to effectively and pro-actively carry out their responsibilities is another definition of psychological empowerment (Hardy and Leiba-O'Sullivan, 1998). Thus, research has suggested a link between psychological empowerment and an employee's active engagement in civic conduct within the company (Erdogan et al., 2018; Tsai et al., 2022). Studying this relationship not only clarifies the connection between psychological empowerment and safety performance (safety participation and PPE), but it also reveals the civic behaviour of workers during the process of bonding and employment, providing safety managers with information from which to develop employee behaviour improvement plans. Based on the aforementioned explanations, the study recommends the following hypotheses to investigate the relationship between organisational empowerment and safety performance:

H3: Theoretical basis Psychological empowerment (PSY) has a positive impact on the use of personal protective equipment (EQU) by workers in the construction industry in Vietnam.

H4: Psychological empowerment (PSY) has a positive impact on the safety participation (PAR) of workers in the construction industry in Vietnam.

2.3.4 Safety practice from the leaders

This study's definition of safety practice refers to how managers conduct safety management tasks. It is regarded as the safe practice of organisational leaders, comprising planning, creating rules to safeguard workplace safety, coordinating, putting into effect and evaluating safe practice activities of the workforce in their organisations. The strategies used by managers to plan, communicate, monitor and enforce safe conduct inside the company have helped to enhance safety performance for construction projects (Cheng et al., 2015). Managers are typically in charge of fostering a culture of safety and planning the implementation of employee health and safety objectives across the entire firm (Summerill et al., 2010). Employees' awareness and behaviour about safety practices are directly impacted by the rules, style and safety attitude of managers of the organisation. Numerous studies have demonstrated that leaders who are role models for workplace safety, efficient communication with subordinates and closeness and involvement with staff members encourage a culture of self-reliance and responsibility. This promotes a culture of and behaviour toward workplace safety (Grošelj et al., 2021). Additionally, candid conversations between the managers and staff members aid in timely feedback and employee disclosure of harmful behaviours in the workplace. While doing so, the leader's safety practices also assist in precisely defining each person's and each organisation's function in terms of safety, assisting in the safe and efficient delegation of responsibility for safety enforcement (Tsai et al., 2022). These will encourage employees to actively participate in safety operations while also forcing them to wear safety protective equipment as directed. However, many earlier research findings are ambiguous. According to research by Zaira and Hadikusumo (2017), there is a positive correlation between safety practices and safety tools, however there is no statistical significance when safety practices affect safety performance, including safety participation. Leader commitment has a favourable impact on safe involvement, according to Subramaniam et al. (2016). We then put forth the following suggestion:

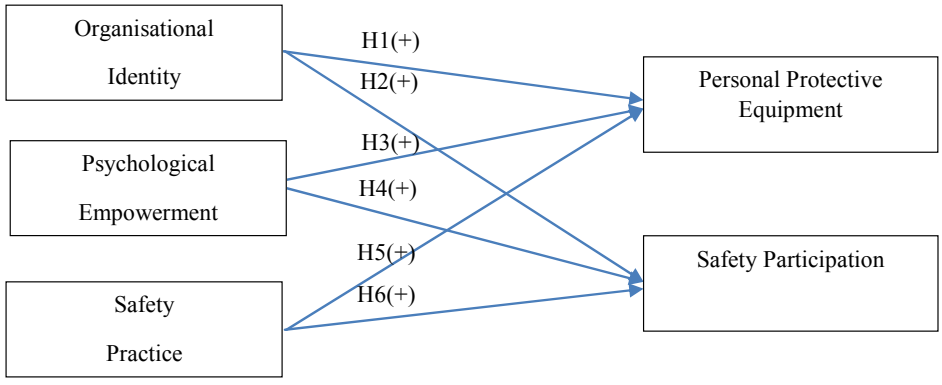
H5: Safety Practices of leaders (SAF) have a positive impact on the use of personal protective equipment (EQU) by workers in the construction industry in Vietnam.

H6: Safety Practices of leaders (SAF) have a positive impact on the safety participation (PAR) of workers in the construction industry in Vietnam.

2.3.5 Research model

In light of the aforementioned hypotheses, the research will be conducted in accordance with the model, as indicated in Figure 1 below.

Figure 1 Research model



Note: H1, 2, 3, 4, 5, 6 = Hypotheses 1, 2, 3, 4, 5, 6. (+) = Positive.

3 Research methodology

3.1 Scales, samples and sampling methods

The scale system was chosen, compiled, consulted, calibrated and built into a comprehensive questionnaire to perform the survey. The survey was conducted online for two months, from January 2023 to March 2023. Mael and Ashforth (1992) studied is cited as the source of the organisational identity scale; the Psychological Empowerment scale was derived from Spreitzer's (1995) research; the Safety Practice scale is taken from Zohar (2000); The personal protection equipment scale is based on the work of Burke et al. (2002); The Safety Participation scale has its roots in a study by Hofmann et al. (2003). Before the bulk survey, 20 carefully selected samples were analysed, coded and multiplied by 10 to test the study's criteria. Following the scales' adjustment or removal (if necessary), a comprehensive survey was conducted online (using a Google form) to gather samples. The target respondents were officers, staff members, and labourers from Vietnamese construction enterprises. The survey link is made available to managers of significant Vietnamese construction companies, such as Construction Corporation No. 1, Coteccons Construction Group and Song Da Construction Corporation. The survey was then distributed by managers to their subordinates. Managers are also informed that they will receive analyses of the safety condition at their organisation following the completion of the survey. Instead of having to answer a

question regarding the unit they are a part of, survey participants are purposely categorised during the survey's time frame. Despite using references from earlier studies, the questionnaire is nevertheless tested for reliability and the evaluation findings are shown in Table 1 below.

Table 1 Scales and its suitability

Factors	*Encryption*	*Items*	*Loading factor*
Organizational identity (ORG)	ORG1	I pay attention to what others think of my organisation.	0.711
	ORG2	I prefer to refer to my company as 'we' when talking about it.	0.871
	ORG3	What the organisation's successes mean to me	0.896
	ORG4	When someone praises my company, I'm thrilled.	0.885
Psychological Empowerment (PSY)	PSY1	My job is significant to me.	0.766
	PSY2	I find a lot of meaning in my work.	0.866
	PSY3	I believe in my capacity to perform my tasks.	0.850
	PSY4	I am qualified to carry out my duties.	0.887
	PSY5	I have the skills to do the job.	0.768
	PSY6	I am empowered to work.	0.910
	PSY7	I can decide how to do my tasks.	0.774
	PSY8	I have numerous possibilities to handle problems on my own.	0.854
	PSY9	I play a certain part in my department.	0.847
	PSY10	Anything that happens in my department is potentially my responsibility.	0.878
Safety practice (SAF)	SF1	Regulations on workplace safety are consistently encouraged by my superiors.	0.954
	SF2	My managers always consider suggestions from subordinates to improve workplace safety.	0.930
	SF3	My supervisors are open with my subordinates about safety concerns.	0.905
	SF4	My supervisors put safety before work results.	0.784
Personal protective equipment (EQU)	EQU1	Our personal protection equipment is suitable.	0.893
	EQU2	We correctly use the personal protection equipment approach.	0.934
	EQU3	When using personal protection equipment, we communicate in an appropriate manner.	0.732
	EQU4	We maintain personal protective equipment properly.	0.935
Safety participation (PAR)	PAR1	We support one another in keeping the workplace safe.	0.924
	PAR2	We reject risky behaviour.	0.899
	PAR3	We remind one another to adhere to safe work practices.	0.951
	PAR4	We are ready to severely disapprove of reckless action.	0.951
	PAR5	We are aware that doing our jobs safely will help to protect our teammates.	0.855

The scales' reliability is supported by the fact that all of the loading factors are greater than 0.5.

3.2 Methods of data analysis

Data analysis was done using Confirmatory Factor Analysis (CFA), descriptive statistics analysis, and research hypothesis testing. The demographic characteristics of the samples are examined by descriptive statistics analysis. Performing Exploratory Factor Analysis (EFA) analysis checks whether the representativeness of the variables in the study represents a smaller number of latent variables (Hair et al., 2009). Then, the hypothesis testing is done through the linear structural model.

4 Research results

4.1 Descriptive statistics results

The survey sample in the study is analysed and described in Table 2. 11% of the people surveyed are under the age of 20; 41% are between the ages of 20 and under 30; 31% between the ages of 30 and 40; 14% are between the ages of 40 and under 50; the number of people over 50 is 3%. There are 67% of the sample is male and 33% is female. The survey sample also collects the respondents' years of experience and education that are described in Table 2.

Table 2 Descriptive statistical results

Description	*Classification*	*Frequency*	*Percentage*
Age	Under 20	28	11%
	From 20 to less than 30	105	41%
	From 30 to less than 40	79	31%
	From 40 to less than 50	35	14%
	Over 50	8	3%
	Total	**255**	**100%**
Gender	Male	171	67%
	Female	84	33%
	Total	**255**	**100%**
Experience	Less than 1 year	88	35%
	From 2 to less than 5 years	93	36%
	From 5 to less than 10 years	37	15%
	From 10 to 20 years	26	10%
	Over 20 years	11	4%
	Total	**255**	**100%**
Level	Under the university	119	47%
	University	112	44%
	Master's degree and above	24	9%
	Total	**255**	**100%**

Source: Author's compilation.

4.2 Confirmatory factor analysis (CFA)

The CFA results of the variables in Table 3 show that the model is compatible with the research data (Henseler et al., 2016).

Table 3 Cronbach's alpha, composite reliability (Pc) and variance extracted (Pvc)

Factors	*Cronbach's alpha*	*variance extracted (Pvc)*	*Composite reliability (Pc)*	*P-test*	*Result*
EQU	0.898	0.770	0.930	0.000	Pass
ORG	0.864	0.713	0.908	0.000	Pass
PAR	0.952	0.840	0.963	0.000	Pass
PSY	0.954	0.708	0.960	0.000	Pass
SAF	0.917	0.802	0.942	0.000	Pass

Source: Authors' compilation.

$$\rho_c = \frac{\left(\sum_{i=1}^{\rho} \lambda_i\right)^2}{\left(\sum_{i=1}^{\rho} \lambda_i\right)^2 + \sum_{i=1}^{\rho} \left(1 - \lambda_i\right)^2} \quad \rho_c = \frac{\sum_{i=1}^{\rho} \lambda_i^{\,2}}{\sum_{i=1}^{\rho} \lambda_i^{\,2} + \sum_{i=1}^{\rho} \left(1 - \lambda_i\right)^2}$$

The values of Cronbach's Alpha coefficient (>0.6), aggregate reliability (*Pc*>0.5), and extracted variance (*Pvc*>0.5) are all satisfactory because they have *P*-value <0.05, so acceptable scales (Wong, 2013) and meet the requirement of convergent validity (see Table 3).

4.3 Hypothesis testing by the linear structural model

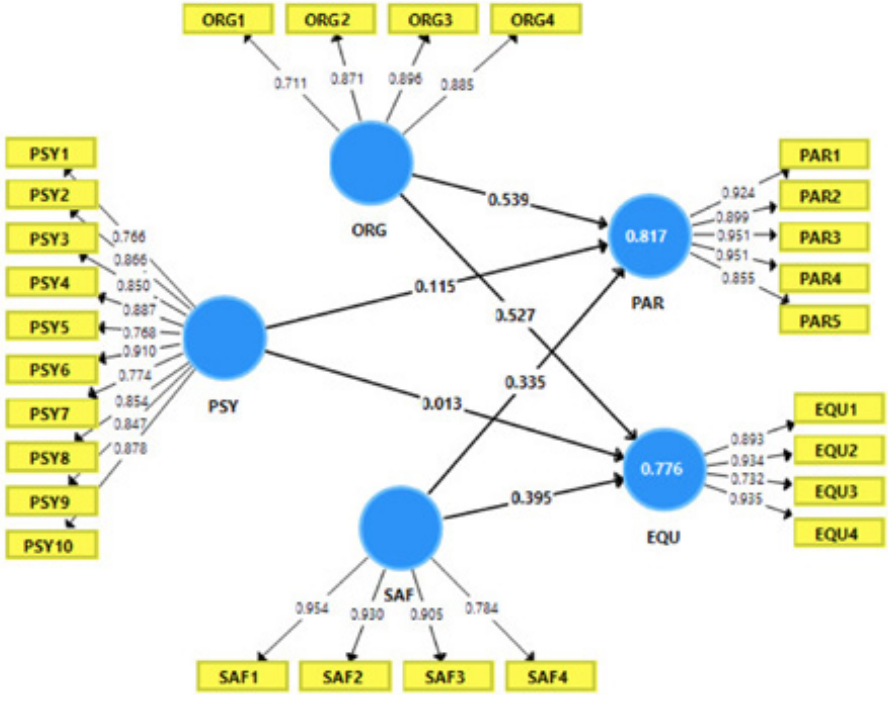
The first SEM results show that the model is compatible with the research data: SRMR Composite Model = 0.095 (<0.1).

Table 4 Results of testing discriminant validity between scales

	Estimate	*S.E*	*CR*	*P-value*	*Accreditation*
ORG -> EQU	0.527	0.058	9.091	0.000	Accept
ORG -> PAR	0.539	0.046	11.650	0.000	Accept
PSY -> EQU	0.013	0.039	0.323	0.747	Not accept
PSY -> PAR	0.115	0.035	3.304	0.001	Accept
SAF -> EQU	0.395	0.077	5.142	0.000	Accept
SAF -> PAR	0.335	0.068	4.897	0.000	Accept

Source: Authors' compilation.

Figure 2 Result of the linear structural model



Five of the six hypotheses (H1, H2, H4, H5, H6) have been confirmed statistically, whereas hypothesis H3 (the association between psychological empowerment and personal protective equipment) has been disproven. According to the findings, the experimental model accounts for 77.6% of the personal protective equipment variable and 81.7% of the safety participation variables.

5 Discussion and managerial implications

The organisational identity, psychological empowerment, and safety practices of the Vietnamese construction sector were investigated in this study in relation to safety performance (safety participation, and PPE). Using qualitative analysis to provide the conceptual framework for the study, a linear structural research model (SEM) has been proposed. Five out of the six associations were statistically significant, according to the study's linear structural model. This finding demonstrates statistically significant associations between organisational identity and PPE, safety participation, psychological empowerment and safety participation, safety participation and both PPE and safety participation, respectively.

This is the first study in Vietnam and throughout Southeast Asia to look at how organisational identity, psychological empowerment and safety practices of business leaders in the construction industry affect workers' use of PPE and their safety participation.

This study suggests that managers and policymakers for the construction industry, which has the highest accident rate of all industries, should pay attention to managers' direct occupational safety practices, psychological empowerment for employees, especially those who are thought to be less active at work, and increase organisational recognition among employees to improve the occupational safety performance in the organisations. The list of implications is provided here as a method to further explain the meanings of the research findings.

With statistically significant impacts of 52.7% and 53.9%, respectively, the direct relationships between Organisational Identity with PPT and Safety participation had the greatest and second-highest impacts. This demonstrates that when employees within an organisation adopt and are influenced by the identity of the organisation, particularly the identity of the promotion of occupational safety and hygiene within the organisation, they (the workers) will tend to take the initiative and effort in bringing equipment and clothing, helmets and PPE when going to the construction site and on duty, and they also actively participate in safety activities. This improves their capacity for self-defense while also advancing safety governance throughout the entire organisation and fostering a culture of active safety involvement. The findings are congruent with the discussion and analysis in the studies' results by Cornelissen et al. (2017); Ford and Tetrick (2011) and Sukamani and Wang (2020). In terms of scholarly contributions, research shows that organisational identity plays a significant impact for every person in the construction businesses, even for those in the lowest positions. Promoting organisational identity by creating and developing a cultural style, focusing on workplace safety and maintaining a serious attitude toward safety behaviours in the organisation are essential actions for managers of construction enterprises in Vietnam to improve safety performance at work and reduce occupational accidents.

Safety participation is statistically significantly impacted by psychological empowerment, however the link between psychological empowerment and PPE is rejected and not working as well as planned. This implies that psychological empowerment will increase employee autonomy and confidence in their job, as well as making it simpler for them to blend in with the overall positive culture of the company and, as a consequence, support safety engagement activities. However, as evidenced by research by Huang et al (2010) when this study evaluates the variations in the empowerment of managers and workers, psychological empowerment can result in excessive self-control that decreases safeguard compliance in those who misuse empowerment. Excessive self-control may be the cause of the Psychological Empowerment variable's inconsistent and irregular effects on PPE. This result contrasts with that of the study by Erdogan et al. (2018), which discovered that psychological empowerment had a statistically significant positive influence on employees' adherence to safety standards in the iron and steel industry in Southern Turkey. The findings also contrast with those of a research by Tsai et al. (2022), which conducted a survey of workers in the banking industry and found that psychological empowerment had a substantial influence on prudential management. The contradictory findings of the research demonstrate that the compliance levels of employees working on construction sites and those in other industries might differ. Even though psychological empowerment has a modest (11.5%) impact on safety participation in the study, the results show that managers still need a plan to increase employees' psychological autonomy so they can actively and confidently participate in safety management activities within the organisation.

With an effect level of 39.5% and 33.5%, respectively, the associations between Safety Practices with PPE and Safety Participation are both statistically significant. This demonstrates how managers may encourage workers to voluntarily comply with wearing PPE while working by implementing steps to increase knowledge of and apply safety procedures in the workplace. Additionally, the managers' proactive promotion of safety inside the company encourages subordinates to actively participate in occupational safety management tasks. The outcome is consistent with the study by Subramaniam et al. (2016) in proving the relationship between leader safety practices and employee safety engagement, but our study has further demonstrated the relationship between management safety practices and the PPE wearing of workers. The result highlights the necessity for managers in the construction sector to actively participate in direct safety actions inside the business, such as motivating staff members to practice safety and follow safety laws. As a consequence, employees will actively take part in and abide by the safety regulations, such as donning protective gear or clothes when working on construction sites.

There are obviously some drawbacks to this study. First off, it hasn't taken into account all the factors that contribute to safe behaviour, such safe teamwork, safe motivation, physical safe spaces, psychological safe spaces and other factors. Future research should investigate these factors specifically in the context of the construction sector and other potentially dangerous industries. Second, it did not take into account the various business types while gathering samples. Owing the potential for varied organisational identities, psychological empowerment, and secure leadership engagement across private, state-owned and FDI organisations, study findings for various companies operating in the same sector may vary. Third, our study ignores a number of factors related to the organisation's safety performance, such as the frequency of safety inspections, safety tasks and so forth. We only include two factors, namely safety participation and PPE. The role that mentioned variables play as mediators and moderators may be considered in next studies.

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