Impact of management practices on employees' safety performance. Highlighting safety as a sustainable development goal in textile industry

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ABSTRACT – REZUMAT

Impact of management practices on employees' safety performance. Highlighting safety as a sustainable development goal in textile industry

Over time, thousands of employees were killed due to bad infrastructure, a poor emergency system and a weak health and safety system in the textile industry of Pakistan. Management needs to identify the workplace hazards to improve the employees' performance. The current study was conducted to determine the impact of management practices on employees' safety performance in Pakistan's textile industry. For this purpose, primary data was collected from the managerial staff of the textile sector. Smart PLS and SPSS 23 were used for data analysis. A total of 180 questionnaires were sent to the respondents, out of which 165 questionnaires were received back. Organisational health and safety is considered a management issue; in previous studies, this issue has not been explored by scholars. Organisational health and safety issue is also considered a general management issue; it continues to be overlooked by scholars in the management field. The findings show that management commitment, promotion of employees, and safety training affect the employees' safety performance. Safety knowledge and safety motivation mediate the relationship between Management practices and employees' safety performance. Meanwhile, institutional pressure moderates the relationship between HR practices and safety knowledge and safety motivation significantly. The findings of this study provide useful insights for managers in designing the mechanism by which workplace safety can be enhanced.

Keywords: *management commitment, safety training, safety motivation, safety knowledge, employee's safety performance, institutional pressure*

Impactul practicilor de management asupra performanței în materie de siguranță a angajaților. Evidențierea siguranței ca obiectiv de dezvoltare sustenabilă în industria textilă

De-a lungul timpului, mii de angajați au fost uciși din cauza infrastructurii deficitare, a sistemului de urgență deficitar și a sistemului de sănătate și securitate subdezvoltat în industria textilă din Pakistan. Este esențial ca managementul să identifice pericolele la locul de muncă pentru a îmbunătăți performanța angajaților. Studiul actual a fost realizat pentru a determina impactul practicilor de management asupra performanței în materie de siguranță a angajaților în industria textilă din Pakistan. În acest scop, au fost colectate date primare de la personalul managerial din sectorul textil. Pentru analiza datelor au fost utilizate metodele Smart PLS și SPSS 23. Un total de 180 de chestionare au fost trimise respondenților, dintre care 165 de chestionare au fost primite înapoi completate. Sănătatea și securitatea organizațională sunt considerate o problemă de management, însă în studiile anterioare această problemă nu este suficient explorată de către cercetători. Problema sănătății și securității organizaționale este, de asemenea, considerată o problemă generală de management, care însă continuă să fie trecută cu vederea de către cercetătorii din domeniul managementului. Rezultatele empirice arată că angajamentul managementului, promovarea angajaților și instruirea în materie de siguranță afectează performanța în materie de siguranță a angajaților. Cunoștințele în materie de siguranță și motivația în materie de siguranță mediază relația dintre practicile de management și performanța în materie de siguranță a angajaților. Între timp, presiunea instituțională moderează semnificativ relația dintre practicile de resurse umane și cunoștințele în materie de siguranță și motivația în materie de siguranță. Rezultatele acestui studiu oferă perspective utile managerilor în proiectarea mecanismului prin care poate fi îmbunătățită siguranța la locul de muncă.

Cuvinte cheie: *angajamentul conducerii, instruire în domeniul siguranței, motivație în domeniul siguranței, cunoștințe despre siguranță, performanța angajaților în domeniul siguranței, presiune instituțională*

INTRODUCTION

Safety at work and safe work are important for improved production and higher employee productivity, and so the promotion and maintenance of healthy work is a complementary feature of industrial growth [1, 2]. The underlying sources of hazards in their products may produce unsafe work and work environments. The International Labour Organisation and the World Health Organisation define workplace safety as "Occupational health should be a goal at the maintenance and promotion of the topmost quality of mental, physical and social well-being of employees in all kinds of work". Occupational health and safety is a multidisciplinary field that includes occupational

nursing, industrial hygiene, epidemiology, toxicology and engineering [3].

Work health and safety practices help improve employees' productivity at the workplace and reduce injuries at work by providing progressive feedback on the workforce's performance [4]. The International Labour Organisation has said that an injury in the workplace impacts an employee's life. Safety is a rather broad term which refers to the prevention of accidents that cause harm to humans [5]. The definition of safety is therefore broad in that it can extend from accidents or events involving only mild physical injury, such as a buried or a slight cut, to serious injuries requiring heavy medical treatment or that could lead to death. Furthermore, with an emphasis on reducing injury, safety often requires efforts to understand and avoid new injuries. Therefore, work on protection also often aims at strengthening the employee safety behaviour [6]. Employment risks have led to very low malfunctions, workplace infections and adverse effects on textiles.

The textile industry has various hazard categories, such as physical, biochemical, chemical and ergonomic risks. These factors contribute to poor working conditions, reports of deaths and harmful diseases [7, 8]. The textile industry has several diseases, including lung cancer, TB, kidney stones and ENT (ear, nose and throat) [9]. The Pakistani industries need uncompromising improvement of the implementation of workplace health and safety practices because they did not take this valuable parameter as much account as they needed [10, 11]. Pakistan has far more work-related deaths than any democratic nation [12].

Organisations depend today on information as their main resource of power. Because of its great significance, organisations have increasingly moved to knowledge organisations. As this change attracted numerous scholars in various fields to explore the notion of information, an infinite variety of knowledge definitions varied about the methods they addressed. This paper aims to examine how management activities affect safety in the workplace in Pakistan's textile industry. In particular, it explores the underlying mechanisms for relations between management's and safety performance by examining the influence of critical practices on employee safety behaviour: (i) management safety commitment; (ii) training of safety; (iii) employee involvement in safety encouragement; (iv) pay method [13, 14].

Structure of the paper

The remainder of this paper is structured as follows: 2nd reviews the relevant literature on management practices, institutional pressure, safety knowledge, safety motivation, and their impact on safety performance. 3rd section discusses the research methodology, including data collection and analysis techniques. 4th section presents the key findings and discusses their implications for workplace safety. Finally, the 5th section concludes the paper, highlighting key takeaways and suggesting directions for future research.

Problem statement

The hazards in Pakistan's textile industry include swarming conditions, uncovered machinery at work, unrefined and dangerous electrical units, unavailability or breakage of a few or no terminated dousers, no rehearsals of terminate ever performed, the leaders and employees are not prepared to comprehend problems of well-being and security, stairs and floors used as capacities; in crises doors remains closed; production units not open like offices, limited path for firefighters to enter in units and provide safety. literature has shown that bad physical and psychosocial working environments can cause person health and well-being to deteriorate [15]. Many of these findings relate to workplace problems with terms such as stress-induced disease. However, the impact that working environments have on workers' welfare remains an area of little focus within occupational science.

Considering today's organisations' comprehensive safety issues still faced, more research in this field is urgently needed. Early security analysis has concentrated principally on errors and employees involved in a faulty procedure, but over recent years, attention has shifted from employee-level accident explanation and accident to corporate explanations [16].

Literature and current observations suggest that health and safety practices are still not properly implemented in the textile sector of Pakistan. However, the textile sector requires to implement the implementation of health and safety practices. In the textile sector, no compliance department is properly working as most of the organisations have an HR department which are going to performs the HR department see all the functions of the compliance department, but there is no separate compliance department to implement the health and safety practices. If an organisation have a compliance department but it is not working properly. On the other side, various national and international institutions exert pressure on organisations to implement health and safety practices to improve their safety performance. This study investigates the impact of HR practices on improving employees' safety performance through the mediating role of safety knowledge and safety motivation. Further explore whether Intuitional pressure makes the impact of proximal on safety performance and employees' performance more significant or not.

Research gap

There is scarce research in Pakistani organisations on the administration of the issue of occupational health and safety. OHS is a human resources management concern, even though it is also seen as a general management issue; researchers in management continue to ignore it. The goal of this study is to define the fundamental processes that connect management with safety outcomes by examining the

impact of critical management practices on employee safety behaviour. Workers' work safety and health have improved and are comparatively satisfactory in the developed world, while work health remains low and poorly addressed in the list of national priorities in developing countries [17]. The current research was intended to evaluate knowledge and management strategies for the textile industry about safety, security, and the performance of employees and relevant factors responsible for it. This also applies to Pakistan, which is an underdeveloped nation in Asia.

LITERATURE REVIEW

Scholars conceptualise safety output as individual behaviour output at the workplace, which contributes to the safety of an individual as well as to that of their employees as a whole, rather than as an organisational measure for safety results that concentrate on injury or accident numbers per year, following [13, 16, 18]. It is necessary to differentiate ethical behaviour from such activity results, since each behaviour may require various relationships with both distal and proximal determinants [18]. This conceptualisation gives the researcher an accurate and observable criterion in comparison with crashes or deaths, even with a low base rate and biased distributions [19].

There have been several different conceptual models for safety performance created throughout time. "Actions or behaviours that people display in practically all occupations to improve the health and safety of employees, customers, the general public, and the environment" were characterised as "safety performance" [20].

Using PPE, reducing risk at work, communicating dangers and accidents to employees, and exercising employee rights and obligations are all part of this notion. Burke et al. [20] discovered that these variables are significantly associated and that, under certain circumstances, it is reasonable to use a composite safety performance score.

In other words, there are several ways to think about safety performance [16, 21]. Safety compliance refers to generally mandated behaviours such as "adhering to safety procedures and carrying out work in a safe manner," while safety participation refers to safety behaviours beyond the employee's formal role, such as "helping coworkers, promoting the safety program within the workplace, demonstrating initiative, and putting effort into impairing the safety of the workplace" [16]. The authors make a difference between safety compliance and safety involvement in this study.

The link between management and safety performance

Management consequences may be investigated in two directions regarding OHS results. The first strategy is focused on a management framework perspective, which takes into account the total impact of the activities (Bowen and Ostroff 2004). For a structure solution, staff are supposed rather than human activities to be subject to management schemes [22, 23]. Therefore, the results of such a strategy will only show the implications of aggregate management activities, not individual management practices, as a group. A second methodology is, however, focused on assessing the impact of a single HR or general management procedure rather than the total management systems configuration or consolidation [24]. Recruitment and evaluation have been identified, for example, through recruiting people with particular personalities, physical traits and job experience, and a strong level of safety awareness [24–26]. We take this method as it promotes research and thus awareness of the importance of various management activities in the management of protection.

Neal and Griffin [21] occupational safety model to create a model of processes whereby management activities affect safety efficiency. This model is based on the theory of success, Campbell et al. [27], which describes three proximal determinants of each performance: awareness, abilities and motivation.

There's also evidence in the model that implies distal antecedents of success, such as personality or experience or management techniques, can only affect performance if they raise the proximal ones first. These findings imply that factors at the individual (personality and life experience) and organisational levels (safety environment) have a direct impact on worker knowledge and motivation, which has a knock-on effect on workplace safety outcomes [16]. Individual variations and the safety environment serve as the distant antecedents of safety performance, but knowledge and motivation are the proximal determinants. Neal et al. amended the paradigm to incorporate management practices since the emphasis of this article is on the role of particular management practices. Safety atmosphere, a concept that outlines how workers perceive common safety rules, procedures, practices and behaviours that are rewarded in workplaces or work groups, yet we didn't look into it [28]. Despite its reputation as a leading indicator of safety outcomes across sectors and nations, no agreement exists on what defines a "safety environment" [14]. Perceptions of management values, safety communication, safety practices, safety training, and safety systems are important to Neal et al. [16], while other researchers have looked at many other aspects of the safety environment. According to Seo [29], safety climates may be operationalised as shared impressions of management commitment, supervisor support, coworker support, employee involvement, and competency level.

Moreover, safety atmosphere encompasses CEO commitment, emergency response, and employee perception of risk [30]. Cavazza and Serpe [31] examined the safety concerns of companies and top managers, as well as the pressures of the workplace and the attitudes of supervisors toward safety. However, past empirical research has either taken safety climate as a single measurable variable or as

a latent variable when operationalising the safety climate construct, which implies that safety climate in diverse studies represents distinct perspectives of the safety environment. As a result, we contend that views of safety management procedures have considerable implications for staff morale and productivity.

A key part of textile safety is management commitment to safety, which is addressed in this article, along with training and incentives for staff engagement in safety. Primarily, due to violations of safety production rules and regulations at the organisational and management level, textile accidents are frequently caused by human error, including excessive capacity and overtime production, giving instructions that go against rules and regulations or pressuring workers to take on dangerous tasks.

Accidents such as these may be traced back to management's failure to implement fire protection procedures. Workers were forced to work underground following the first three explosions due to pressure from supervisors/managers, in violation of safety regulations and rules. This shows a low level of management commitment to safety, according to a State Administration of Work Safety investigation conducted in 2013. The management in Pakistan's textile sector didn't think it was worthwhile to involve workers in safety-related decisions because many of them lacked relevant knowledge or an understanding of the big picture of safety management, even though this could be corrected through safety training. Further studies [32] have shown that China may be characterised as a country with a large power distance, where authorities are revered and people are less inclined to challenge management choices. Coal miners are unlikely to raise concerns about management choices if they see them from this viewpoint. Workers must be trained to improve their safety awareness and knowledge, and to improve their ability to use this knowledge in making judgments rather than blindly following the instructions of superiors, who often violate safety rules and regulations. Littrell [33] argued that this training is required to bring about change; another way of putting it is that management must promote proactive employee engagement in safety-related concerns and training to strengthen the ability of workers in their day-to-day job to make autonomous choices [33].

Because many employees in this industry are strapped for cash, they tend to overwork themselves and adopt shortcuts to increase output. These factors led to a concentration on the role played by management commitment to safety, training in safe work practices and systems of compensation in the textile industry rather than other management techniques.

Safety knowledge and motivation have a direct influence on safety performance; thus, these four management practices should have a distal impact on safety performance since they are distal in their interactions with safety performance.

Payment structure stands out because we suggest it as a modulator for links between safety knowledge/motivation and behaviour rather than as a distal precursor to conduct. Our emphasis was just on time-rate compensation vs. piece-rate pay, and not on a comprehensive reward system that may include safety bonuses or incentives to encourage workers to learn about safety and practice safe behaviour.

HRM Practices proximal factors, and employees' safety performance

As pointed out, four management strategies, management attention to safety, security preparation, employee interest in safety, and pay methods, are the key focus of this document, and we recommend the inclusion of these practices to have beneficial effects on the safety of the organisation. More proximal determinants (e.g., safety information and motivation for security), which serve as mediators, often indicate their impact on security efficiency. We also assume a lower interaction between management processes and safety results where people lack the necessary expertise and safety skills or are not motivated to work hard to implement security behaviour. The following segment discusses the mediation impact on the interaction between management activities and safety results of security expertise and motivation.

Safety knowledge and safety motivation

In line with our conceptual model in figure 1, we wanted to see a clear positive connection between protection and success because of good behaviour. Awareness of safety is a precondition. Security motivation relates to "one's desire to work for safety behaviours, and their valence" [21] and safety motivation was expected to be directly linked to safety success, since it is motivation that determines performance. Safety knowledge and safety motivation are critical factors in enhancing workplace safety performance. Safety knowledge equips employees with the necessary understanding of hazards, risk management strategies, and proper safety procedures, enabling them to recognise potential dangers and respond effectively to emergencies. However, knowledge alone is insufficient without the motivation to apply it consistently. Safety motivation drives employees to adhere to safety protocols, take personal responsibility for their actions, and actively contribute to a culture of safety within the organisation. When employees possess both knowledge and motivation, they are more likely to engage in proactive safety behaviours, report hazards, and comply with safety regulations, ultimately reducing the likelihood of workplace accidents and injuries. Organisations can foster these attributes through comprehensive training programs, incentive-based safety initiatives, and strong leadership commitment to safety. By integrating both knowledge and motivation into workplace safety strategies, organisations can achieve higher safety performance and create a more secure working environment.

Management practices and employee safety behaviours

We propose that the philosophy of social exchange may help to understand the relationship between management, protection incentives and safety. Based on the principle of social exchange theory, transition and equilibrium may be considered as a mechanism of agreed exchanges and dealings between the parties, resulting in a convention on fair trade and reciprocal exchange [34, 35]. In particular, workers may establish an inherent obligation to reciprocate in a manner that benefits them as they consider the welfare and well-being of their organisation [36]. Examples involve compliance with the safety protocols defined, execution of high-standard core tasks and participation in security citizenry [37]. Individual employees should be encouraged to cooperate and participate in safety operations if their employers and organisations are committed to protection, inspire employees to take safety-related decisions and take security training seriously. The following parts explain in greater depth how management activities can influence safety efficiency.

Security management dedication is an important part of the performance of the security programs of a company [38]. The argument has been made that such commitment should be expressed in ways that are compliant with staff [39]. Safety issues have been highly prioritised in company meetings and production planning [40], as well as through the participation of top management in security activities on a routine basis [41]. According to Vredenburgh [26], staff would probably be inspired to learn more about safety and practice if they comply with a high degree of management dedication to safety, which will help improve safety efficiency.

A good safety management strategy includes such a technique, according to the research. As a result, workers feel empowered to make good contributions to workplace safety and the company as a whole, which motivates them to keep learning and applying what they've learned about safety in the past to determine whether their efforts are having the desired effect on both. To enhance safety results, well-designed and effectively delivered safety training has long been recognised as a crucial HR practice. As a result, workers become more knowledgeable about occupational safety and health (OSH), their skills and capacities to spot risks and potentially hazardous situations improve, and they are given the tools to make incidents more predictable [24–26]. The companies with lower accident rates have good safety training for their employees, according to several studies [16, 42]. This is important for safety performance because through training, employees can potentially operationalise knowledge and the capability of applying acquired knowledge to solve practical issues [43].

Institutional pressure

Institutional theory holds that organisations have a propensity to adhere to socially acceptable standards and practices to be structurally compatible with their particular institutional setting [44]. Institutional pressures may come from explicit laws (regulations and mandates) as well as informal limitations (norms, practices, and beliefs), and how organisations react to these forces will define their legitimacy as an institution [45]. By DiMaggio and Powell [44], organisational behaviour is shaped by three forms of pressures: coercive, mimetic, and normative forces.

Safety performance

Even though several researchers have examined general employee behaviours in various 'critical skills occupations' or industries [16, 46–49]. A company's overall safety performance was characterised by Burke and Dunlap [43] as behaviours across all jobs that contribute to the safety and well-being of all stakeholders, not just the company itself. When looking at the performance ratings of 550 hazardous waste workers, researchers found that using personal protective equipment, engaging in risk reduction practices, communicating health and safety information, and exercising rights and responsibilities were all important safety performance factors (refer to Method section for definitions). They proposed that safety information, which is typically learned via classroom instruction, has an important role in how well workers perform on these dimensions.

One possible outcome of training is proceduralization of knowledge, which refers to the capacity to use previously acquired information in addressing real-world situations [50]. The more related or comparable content people see in various presentations during refresher training, the easier it will be for them to apply what they've learned from the new materials [51]. As an example, Stout et al. [52] discovered that aviation training improved knowledge structures, or how ideas are organised, and how they are connected within a domain (e.g., safety). There is a strong argument to be made that Anderson's notion of proceduralization of knowledge includes the concept of knowledge structures. So, for practical issue solving, well-organised storage of ideas is likely required, since retrieval of information is a prerequisite to the application of previously-stored knowledge.

Once a person can use knowledge, it must be translated to the workplace to have an impact on how well they perform. Transfer of training is described by Baldwin and Ford [53] as the generalisation and preservation of learnt content in the work setting across time. Only when people have the chance to demonstrate the information and skills they've gained will mastery and preservation of knowledge and skills improve the transfer to work [54].

More than one study has provided empirical evidence for predicted positive connections between the quantity of safety training and perceived safety

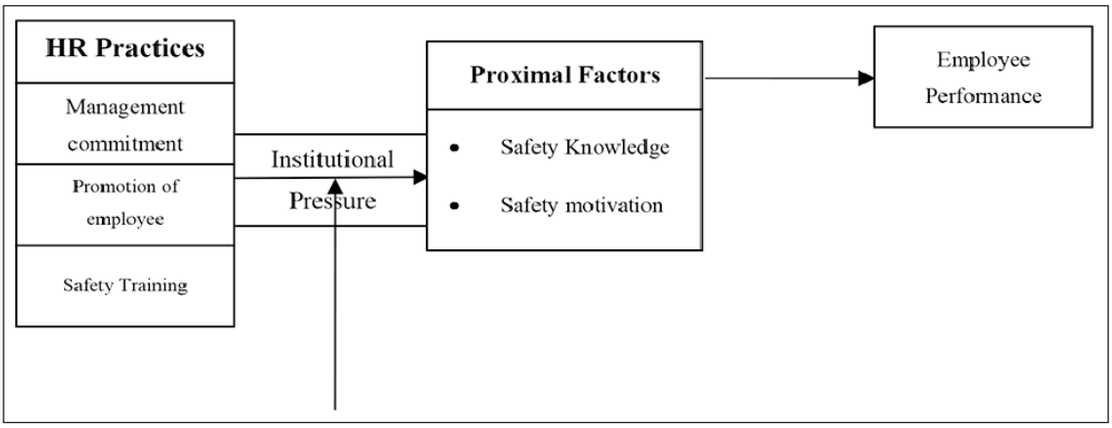

Fig. 1. Theoretical framework

knowledge, as well as assessments of safety performance by employees and supervisors [16, 43]. As an illustration, Burke and Dunlap [43] found a positive correlation between worker safety knowledge and worker performance on specific dimensions of safety performance (i.e. using personal protective equipment), such as risk reduction practices and communicating health and safety information (i.e. communicating health and safety information.

Burke and Dunlap [43] analyse combined data from two organisations (U.S. Department of Energy contractors) in the nuclear waste industry located at the same site. Their analyses investigating safety knowledge-safety performance relationships focused heavily on the construct validity of their confirmed safety performance dimensions. To the extent that the two organisations varied concerning organisational climate, the above literature would lead to the general expectation that the magnitudes of the safety knowledge-safety performance relationships observed by Burke and Dunlap [43] might vary across the organisations. According to anecdotal reports from site experts, the two organisations studied by Burke and Dunlap [43] did differ in organisational climate for the transfer of safety training. One organisation, hereafter referred to as Organisation A, was thought of by site experts as having a more strategically focused (and less restrictive) organisational climate for the transfer of safety training than the second organisation, hereafter referred to as Organisation B. In the current study, the climates of these two organisations were empirically examined according to the conceptualisation of organisational climate for the transfer of safety training detailed below.

METHODOLOGY

The survey of this study was distributed online and offline distribution and by using a random sampling method [55]. An offline distribution was selected because of the validity of the questionnaire. We sent them a questionnaire by the HR managers, lower-level managers and visited their companies.

Furthermore, online distribution was viewed as a faster method for data collection than offline distribution. The online distribution may be making it possible for the survey to take longer because respondents can fill it in at their discretion.

An online version has been created using Google Forms, and the query is complete. Most feedback is available to ensure that the data collection process is selected at a given time. A high response rate is recommended by sending a questionnaire to the participants via email and LinkedIn. A total of 165 questionnaires were used for data analysis. The instruments which were used in the present study and the demographics of the respondents are shown in the tables 1 and 2.

Table 1

STUDY'S INSTRUMENTS			
Description	**Items**	**References**	**α**
Management commitment	7	[16, 56]	0.70
Encouragement of employee involvement in safety	2	[16, 56]	0.86
Safety training	4	[16,56]	0.82
Safety knowledge	4	[16]	0,87
Safety motivation	4	[16]	0.91
Safety compliance	4	[16]	0.89
Safety participation	4	[16]	0.78
Safety performance	4	[16]	0.82
Institutional Pressure	8	[57–60]	0.86

DATA ANALYSIS

Measurement model

The measurement model analysis explains how dimensions of latent variables are dignified regarding their measurement properties and perceived (observed) items. This specific section highlights the evaluation of the outer model (measurement) by assessing the internal consistency, items' reliability, discriminant validity and convergent reliability [61, 62].

Table 2

DEMOGRAPHICS OF THE STUDY		
Items	**Frequency**	**Percentage (%)**
Gender		
Male	128	78
Female	37	22
Age		
Below 30 Years	95	58.0
31–35	25	15.5
36–40	24	11.0
41–45	11.55	7.0
Above 46 Years	14.02	8.5
Marital status		
Single	72	43.5
Married	93	56.5
Education level		
Intermediate	8	5.0
Bachelors	60	36.5
Masters	64	38.5
MS/M. Phil	28	17.0
PHD	5	3.0
Job title		
Supervisor	52	26.0
Senior Supervisor	57	28.5
Manager	77	38.5
Officer	12	6.0
Other	2	1.0
Working experience		
Below 2 years	54	27.0
3–5 years	46	23.0
6–8 years	42	21.0
above 9 years	58	29.0

In total, 45 items were used to explain the four constructs of the model. By using the PLS algorithm for all reflective constructs were accomplished. The reflective scale's reliability was assessed by the SMART PLS algorithm through the estimation of convergent reliability and discriminant validity. The following model depicts latent variables (circles) and their measuring items (rectangles), as shown in figure 2.

These "Results show that all latent variables in the model are reflective by nature and it is defined by results that all-inclusive quality of the reflective variable's measure of PLS loadings, Cronbach's alpha, constructs 'AVE & composite reliability", which is shown in table 5.

First-order constructs

By evaluating the first-order construct, the item's loading was assessed. Regarding Management Commitment, it consisted of seven items. The outer loadings fluctuated from 0.740 to 0.856 for the concerned items, and all items are significant at the level of 0.5, as shown by the *t*-value results. Institutional Pressure with no dimension, but it comprises six items. The outer loadings fluctuated from 0.613 to 0.764 for the concerned items, and all items are significant as shown by the *t*-value results. Safety knowledge was assessed by four items with no dimension. The outer loadings fluctuated from 0.780 to 0.827 for the concerned items, and all items are significant at the level of 0.5, as shown by the *t*-value

Table 3

MEASUREMENT STATISTICS OF CONSTRUCTS				
Constructs, Dimensions, Items	**Item loading**	**AVE**	**CR**	**α**
Management commitment (MC)				
MC1	0.803	0.904	0.924	0.636
MC2	0.740			
MC3	0.785			
MC4	0.744			
MC5	0.813			
MC6	0.856			
MC7	0.835			
Institutional pressure				
IP1	0.731	0.816	0.854	0.595
IP2	0.764			
IP3	0.724			
IP4	0.613			
IP5	0.666			
IP6	0.711			
Safety knowledge				
SK1	0.827	0.831	0.887	0.663
SK2	0.780			
SK3	0.826			
SK4	0.823			
Safety motivation				
SM1	0.820	0.882	0.919	0.740
SM2	0.876			
SM3	0.821			
SM4	0.888			
Employee safety performance				
ESP1	0.917	-	-	-
ESP2	0.871			
ESP3	0.785			
ESP4	0.849			
Safety training				
ST1	0.849	0.841	0.894	0.678
ST2	0.827			
ST3	0.747			
ST4	0.866			
Employees promotion				
EP1	0.895	0.752	0.850	0.739
EP2	0.823			

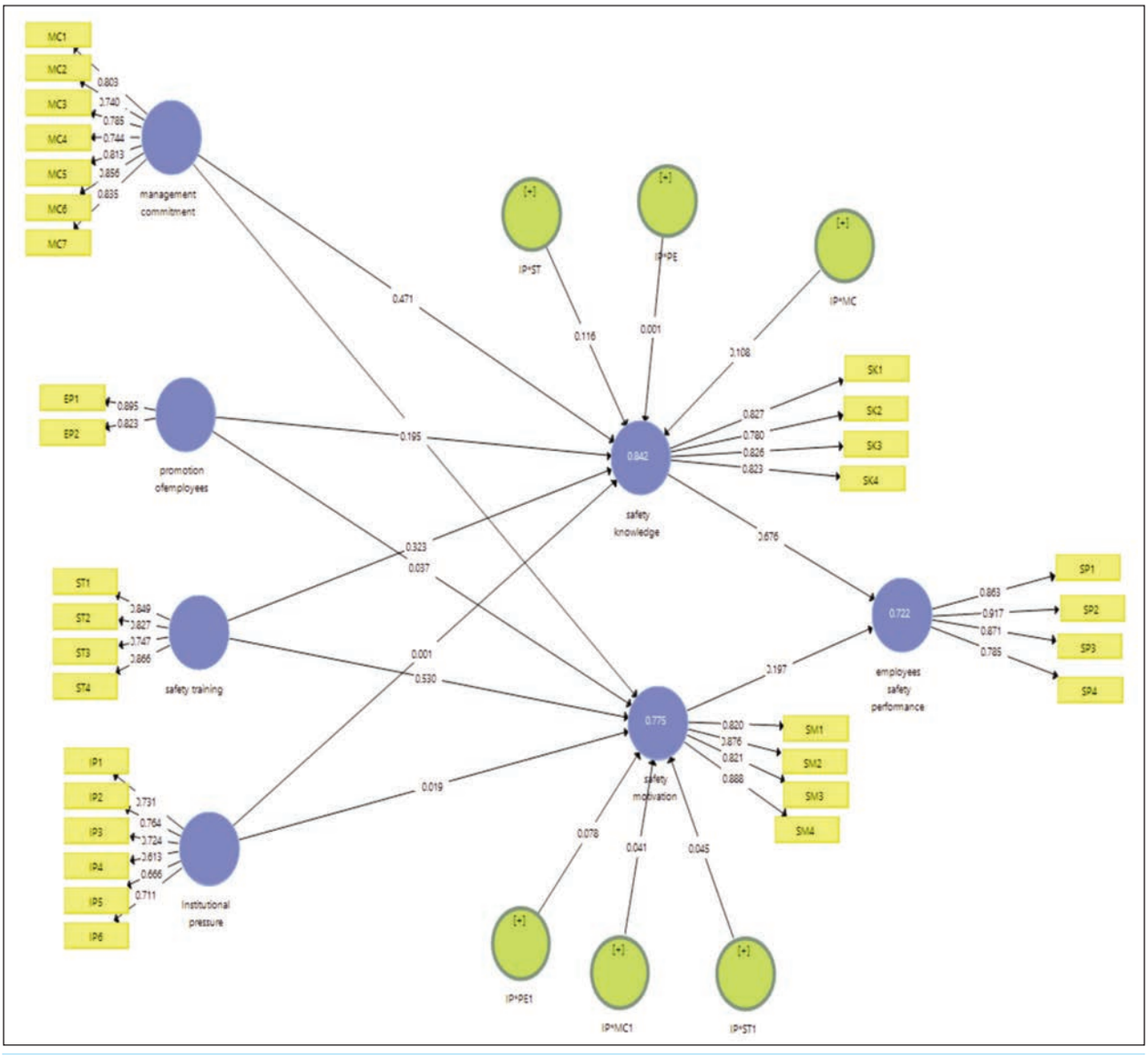

Fig. 2. Measurement model

results. Safety Motivation was assessed by four items, and it has no dimension as well. The outer loadings fluctuated from 0.85 to 0.91 for the concerned items, and all items are significant at the level of 0.5, as shown by the *t*-value results.

Item reliability

Internal consistency reliability is the first category to be assessed. Cronbach's alpha (α) is a traditional criterion for internal consistency, which gives an estimate of the reliability based on the intercorrelations of the observed indicator variables. It has been shown in table 3, all items' reliability is robust, as it can be seen in table 5, Cronbach's alpha (α) is greater than 0.7. Moreover, composite reliability (CR) fluctuate from 0.94 to 0.98, which surpasses the prescribed limit of 0.70, affirming that all loadings used for this research have shown up to a satisfactory indicator of reliability. Ultimately, all items' loadings are over the 0.6 cutoff [63, 64].

Convergent validity

Convergent validity refers to the extent to which measures of the same construct (variable) correlate positively with other measures. By using the Domain Sampling Model, the items of a specific construct are considered as alternative dimensions to measure the same construct. Hence, the indicators of a reflective construct should share a huge amount of variance. Analysts take into account the outer-loadings of the items and the average variance extracted to examine the convergent validity of a specific variable. By utilising composite reliability and average variance extracted scores, convergent validity was estimated [65]. It is elaborated in table 3 average variance extracted of all the indicators is greater than 0.50, and composite reliability is higher than 0.70, which is an acceptable threshold of convergent validity and internal consistency. It is stated that a value of composite reliability, i.e. not less than 0.70, is acceptable and evaluated as a good indicator of internal consistency [66]. Moreover, Average variance extracted

scores more than 0.50 demonstrate an acceptable convergent validity, as this implies a specific construct with greater than 50% variations is clarified by the required indicators.

Discriminant validity

In empirical standards, discriminant validity can be described as the degree to which a variable is specifically different from another variable. Therefore, when the discriminant validity is established, it is understood that a variable is distinctive and possesses uniqueness that is not entitled to another Variable in the model. Particularly, scholars have depended on two proportions of discriminant validity. The cross-loadings are normally the main way to deal with the discriminant validity of variables. Outer loadings of an indicator with related variables must be considerably greater. Compared to its cross-loadings, which specify its correlation with other constructs. The ideal approach to evaluate and report cross-loadings is in a table column for the variable and rows for the indicators. Likewise, HTMT can be explained it is a ratio of linking trait relationship. HTMT is the mean of all correlations of items (indicators) over a construct, estimating various constructs concerning the mean of the average relationships of indicators estimating a similar construct. In fact, the HTMT approach is an evaluation of what the genuine connection between two constructs would be, if they have been measured perfectly. This genuine relationship is additionally referred to as a disattenuated relationship. A disattenuated relationship between two constructs near 1 shows an absence of discriminant validity.

Another to assess the measurement model, the HTMT ratio of relationships was utilised to evaluate discriminant validity, in light of the multitrait-multimethod matrix. The HTMT element that was more than 0.85 demonstrates an issue of discriminant validity [67]. In this study, all elements are according to the criteria. The specific research, in this manner, demonstrates that the estimation model has built up its discriminant validity.

In conclusion, the estimating model has passed the reliability and validity tests. The validity and reliability tests show that the estimated model used in this study is valid and suitable for use in evaluating the structural model's parameters.

Structural model

The Structural equation model (SEM) was assessed dependent on five criteria: (1) path coefficient (β) that shows the either relationship is weak or strong between constructs (2) level of variance clarified or R square (R^2) which generally was called regression score, (3) standardized root mean square residual (SRMR) (4) *t*-values significance which clarify the relationship among variables are significant or not. (5) The Q2 that estimates how well the model reproduces the perceived values and its estimates of parameters [68].

Path Coefficient (β) and *t*-value

In this study, the path coefficient was used to assess the relationship of the variables as hypothesised. The resampling criteria of bootstrapping were run by inducing statistical inference and observing the influence of confidence intervals of path coefficients [69]. Table 7 indicates the results of 165 sample bootstrap analyses, including (1) standardised path coefficient (β), (2) corresponding *t* and *p* values.

This study used SEM Analysis, tests like PLS-algorithm, PLS-blindfolding and PLS-bootstrapping to test all the Hypotheses. The latent variables are entered into the model and connected in a path, HR practices as an independent variable, safety motivation and safety knowledge as mediators, institutional pressure as a moderator and employee's safety performance.

Table 4

DISCRIMINANT VALIDITY							
Variables	**Institutional pressure**	**Management commitment**	**Promotion of employees**	**Safety knowledge**	**Safety motivation**	**Safety promotion**	**Safety training**
Institutional pressure	0.703						
Management commitment	0.332	0.898					
Promotion of employees	0.333	0.742	0.86				
Safety knowledge	0.301	0.871	0.787	0.854			
Safety motivation	0.265	0.821	0.716	0.825	0.852		
Safety promotion	0.324	0.723	0.829	0.844	0.774	0.86	
Safety training	0.27	0.823	0.763	0.812	0.722	0.79	0.823

Note: The square root of AVE' is visible on the main diagonal. Correlations are lower left of the diagonal.

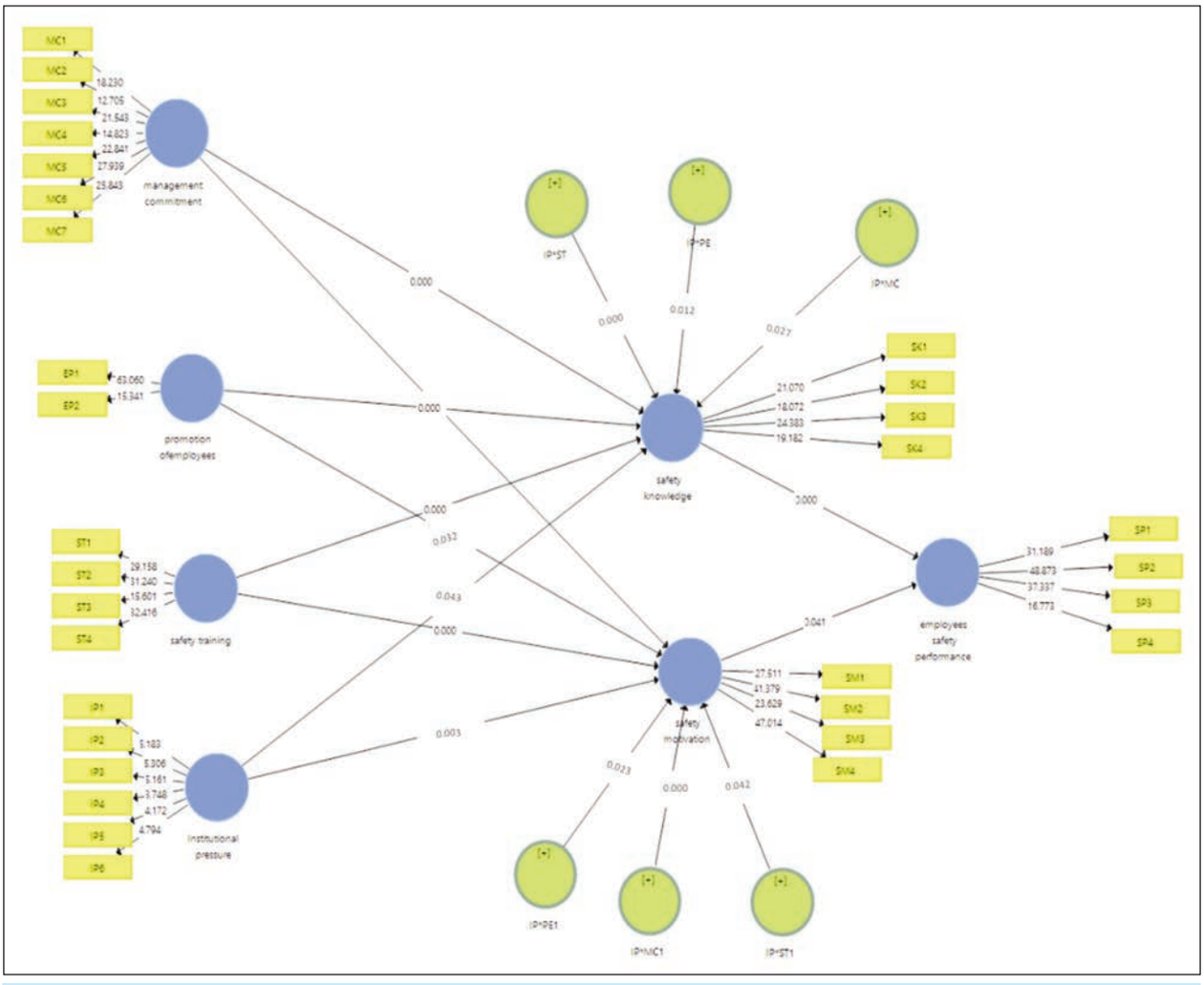

Fig. 3. Bootstrapping

Table 5

RESULT OF STRUCTURAL MODEL AND HYPOTHESES TESTING

Hypothesis	β	|*t*-value|^	*p*-value	Decision
Management commitment 8 → Safety knowledge	0.471	6.276	0.000	Supported
Management commitment → Safety motivation	0.371	5.754	0.000	Supported
Promotion of employees → Safety knowledge	0.195	3.545	0.000	Supported
Promotion of employees → Safety motivation	0.037	6.729	0.032	Supported
Safety motivation → Employees' safety performance	0.197	2.045	0.041	Supported
Safety training → Safety knowledge	0.323	3.750	0.000	Supported
Safety training → Safety motivation	0.530	9.496	0.000	Supported
Safety knowledge → Employees' safety performance	0.676	7.777	0.000	Supported

The first hypothesis shows that management commitment has a significant impact on safety Motivation. The results show there is a significant impact on safety Motivation by managing management commitment (β = 0.471; *t* = 6.276, *p* < 0.05), supporting H1. The second hypothesis shows that management commitment has a significant impact on safety motivation. The results show there is a significant impact on safety motivation by managing management commitment (β = 0.371; *t* = 5.754, *p* < 0.05), supporting H2.

It is a hypothesis that shows the promotion of employees has a significant impact on safety knowledge. The results show there is a significant impact on safety knowledge by management commitment (β = 0.195; *t* = 3.545, *p* < 0.05), supporting H3. The Promotion of employees has a significant impact on safety motivation. The results show there is a signifi-

Table 6

HYPOTHESIS TESTING RESULT MODERATING EFFECTS				
Hypothesis	**β**	**|*t*-value|^**	***p*-value**	**Decision**
IPp*MC1 → Safety motivation	0.041	0.406	0.000	Supported
IP*MC_ → Safety knowledge	0.108	0.825	0.027	Supported
IP*PE → Safety knowledge	0.001	0.009	0.012	Supported
IP*PE1 → Safety motivation	0.078	1.118	0.023	Supported
IP*ST1_ → Safety motivation	0.045	0.389	0.042	Supported
IP*ST_ → Safety knowledge	0.116	0.967	0.000	Supported

cant impact on safety motivation by managing management commitment ($\beta = 0.037$; $t = 6.729$, $p < 0.05$), supporting H4.

It is a hypothesis that shows safety motivation has a significant impact on employees' safety performance. The results show there is a significant impact on safety motivation by managing employees' safety performance ($\beta = 0.197$; $t = 2.045$, $p < 0.05$), supporting H5. The safety training has a significant impact on safety knowledge. The results show there is a significant impact on safety training by safety knowledge ($\beta = 0.323$; $t = 3.750$, $p < 0.05$), supporting H6.

It is a hypothesis that shows safety training has a significant impact on employees' motivation. The results show there is a significant impact on safety training by managing employees' motivation ($\beta = 0.530$; $t = 9.496$, $p < 0.05$), supporting H7. The safety knowledge has a significant impact on safety employee's safety performance. The results show there is a significant impact on safety knowledge by employees' safety performance ($\beta = 0.676$; $t = 7.777$, $p < 0.05$), supporting H8.

Testing the moderating effect

A moderating impact happens when a third factor (so-called mediator) decreases or improves the quality or direction of the relation between an independent and dependent variable. A moderator variable communicates under what conditions an independent variable impacts on dependent variable. Considering a causal variable, a moderator is at a similar level as an independent variable. A few measurable procedures have been predicted in testing moderating impacts, contingent upon whether the moderator is categorical or continuous.

At the point when the exogenous variable affects on endogenous variable, it depends upon the estimations of another variable, which moderates the link. Vinzi, Chin, Henseler and Wang, In their study in two thousand ten evaluated different approaches for testing moderation in Smart PLS-SEM as far as their relevance to statistical power & reflective and formative measures. Institutional pressure moderates the relationship between HR practices and proximal factors. The association between management commitment, safety training, employee promotion, safety motivation, and safety knowledge are shown in the table. All the moderating effects are positive and significant. It shows significant results which are consistent with the previous research; the results show that institutional pressure influences the relationship between HR practices and Proximal factors significantly and positively.

DISCUSSION

The primary goal of this research was to determine the relationship between some essential management practices and safety performance, namely safety compliance and engagement. Management commitment to safety, safety training, promotion of employee engagement in safety, and payment mechanisms are all examples of these management approaches. The first three practices are posited as distal antecedents of safety performance that impact safety knowledge and motivation, whereas the final one is expected to modulate the link between safety knowledge/motivation and safety performance. In addition, the function of safety knowledge and safety motivation as mediators in safety management was investigated.

The findings revealed that all three management methods had an impact on safety motivation and were all positively connected with safety knowledge. Only safety training and encouraging employee engagement in safety were shown to affect safety knowledge, whereas workers' opinions of management commitment to safety had no effect.

Management commitment, it might be claimed, provided workers with an overall image of management's interest in occupational health and safety, which was represented in a variety of activities and initiatives aimed at safety [14]. This overall perception of employers' safety concerns had little effect on individual safety knowledge, but it did drive workers to engage in safe activities.

We discovered that management commitment and employee engagement in safety may have independent, direct impacts on safety compliance and participation in our study of the connection between management practices and safety performance. Safety training influenced both direct and indirect safety compliance, as well as safety involvement, through safety knowledge and motivation. Notably, the direct impact of safety training on safety compliance was only significant among workers who were paid on a

time-rate basis, implying that the effect of safety training on safety compliance for employees paid on a piece-rate basis was entirely via the mediators. Such findings show that training alone is inadequate to assure safety, and firms must motivate workers and ensure that they apply what they've learned in the training program to real-world challenges. This is particularly critical for workers who are working under tight deadlines.

Employee engagement in safety measures, according to [70], fosters learning, allows workers to become more proactive, improves problem-solving abilities, and permits preventative action. The present research confirmed their results, indicating that increasing employee engagement in safety had a direct impact on safety performance as well as an indirect impact due to increased safety knowledge and motivation. As a result of this study, managers at all levels need to delegate authority and influence to lower-level workers so that individuals feel empowered [71]. More employee influence over the organization's safety practices may motivate employees to take more responsibility in their work while also encouraging others to do so (high safety participation) in the context of safety management, increasing their likelihood of adopting the value of working safely (high safety compliance) and working toward the organization's goals [72]. If people have more power and responsibility, this may lead to an increase in the number of people who take safety seriously and apply their expertise in the workplace.

Individual safety habits were impacted by managerial commitment. Management commitment to safety had a stronger influence on workers' earning piece rates than on those earning time rates, and the beneficial impact of management commitment to safety on safety motivation was limited to those earning piece rates, as shown in the table. Employees often turn to their supervisors for cues to influence their safety behaviours, according to [73], when there is a contradiction between the pressure to produce and the emphasis given to safety. When managers are extremely devoted to safety, the probability and willingness of workers experiencing production challenges due to piece-rate pay to participate in and perform safety behaviours improves, since they have a direct influence on the allotted incentives for employees [74].

The following conclusions may be derived for practitioners and organisations. Managers must first show their commitment to safety by communication and actions, such as frequent meetings, investment in workplace safety initiatives, and incentive programs [75]. Second, businesses must establish systematic, comprehensive health and safety training programs for new hires, as well as ongoing safety re-education and retraining for their personnel. Furthermore, for safety training to be more successful, it should be followed by goal-setting programs and performance reviews [26]. Organisations are also urged to include employees in detecting safety issues, consulting with them on safety issues, and empowering them to make safety-related choices, especially as worker engagement is a critical component in safety management [14, 56]. Employees who are engaged in the formulation of safe-work measures, for example, are more likely to identify with and follow such procedures [76]. Furthermore, if they are given opportunities to contribute to workplace safety by identifying risk behaviours, monitoring the workplace environment, and sharing their experience with safe production in training programs, they are more likely to be aware of risky behaviours and motivated to follow workplace safety rules and procedures.

CONCLUSION

The research discovered that poor occupational health and safety procedures for textile workers affect worker performance and output. Respondents were unanimous in their belief that risks such as noise, fire, smoking, fatigue, drinking alcohol, job stress, cotton and dust particles exist to some extent, and that these hazards have a direct or indirect impact on employees' health. Occupational Health and Safety Practices (OHSP) include; awareness of clinic, awareness of hazards, better health makes good production, workers satisfaction with top management's attitude, awareness of preventive measures, influence of mobile on production, inaccurate instrument cause trouble, and periodic medical tests since working was being done in their organizations, while; dust mask, ear plug, pre-employment medical examination, training on hazard prevention. In addition, respondents were dissatisfied with the use of personal protective equipment at work.

LIMITATION AND FUTURE DIRECTION

There are various limitations in the existing research. First, all data were gathered from textile organisations of Faisalabad and Lahore, which may have minimised the variety in replies, implying that generalisations should be used with care. In addition, due to a lack of adequate numbers of participating organisations, the unit of analysis was confined to the person level rather than the organisational level. Future research might address this restriction by broadening the scope of the study to cover more of Pakistan's textile industry.

Second, this research primarily employed self-report data from individuals, including measures of perceived organisational management practices, safety knowledge and motivation, and safety performance obtained from the same people. It was challenging to demonstrate causal linkages since the research was cross-sectional. The causal association between these factors may be established in a future study using longitudinal methods. Qualitative data might also aid in the development of a fuller, more thorough understanding of the processes by which management practices influence safety performance. The connections between the variables tested may have been harmed by common method variance (CMV) due to the cross-sectional character of the study

methodology [77]. For example, the survey introduction said that respondents' anonymity and confidentiality would be protected, and that they should answer the questions on distal antecedents and proximal determinants first, before moving on to the part on safety performance. Furthermore, the questionnaire separated conceptually related assessment items to limit the impact of contextual hints and respondents' propensity to utilise past responses to fill in memory gaps [78].

In conclusion, this work adds to the small body of knowledge on the relationship between management and safety performance in Pakistan's textile industry. Safety is influenced directly by management commitment to safety, safety training, and staff participation [79], as well as indirectly via the mediating effects of safety knowledge and motivation, according to the research. This exemplifies the critical role that these practices have in improving workplace safety [80]. Surprisingly, piece-rate compensation had no detrimental impact on individual safety performance habits, according to this research. Because there is so little empirical research on the impact of piece-rate pay on health and safety in the textile industry, we were unable to compare our results to others in the literature. More study on this subject is critically needed in the future. These results contribute to the expanding body of knowledge about how management practices affect employee safety. We expect that the research will help practitioners understand how to enhance workplace safety via several processes.

ETHICS STATEMENT

All methods were performed by the Declaration of Helsinki and approved by the Research Ethics Committee of Faisalabad Business School, National Textile University Faisalabad, Pakistan (# FBS-NTU-27-145-8).

REFERENCES

[1] Upadhyaya, U., *Occupational Health, Safety and Environment 6 in the Construction Sector*, In: Issue of the World of Work in Nepal, 2002

[2] Hassan, Z., Spulbar, C., Birau, R., Mushtaq, M., Carmen Bărbăcioru, I., *Relationship among leadership styles, employee's well-being and employee's safety behaviour: an empirical evidence of COVID-19 from the frontline healthcare workers*, In: Economic research-Ekonomska istraživanja, 2023, 36, 1

[3] Bakri, A., Rosli, M.Z., Mohd, S.M., Abdul Hakim, M., *Occupational Safety and Health (OSH) Management Systems: Towards Development of Safety and Health Culture*, In: Proceedings of the 6th Asia-Pacific Structural Engineering and Construction Conference (APSEC 2006), 2006, 5–6

[4] Vinodkumar, M.N., Bhasi, M., *Study of influence of safety engineering and management practices in Selected Industries in Kerala*, Doctoral dissertation, Cochin University of Science and Technology, 2005

[5] Ludovic, P.-C., Bouissou, M., *Cross-Fertilization between Safety and Security Engineering*, In: Reliability Engineering & System Safety, 2013, 110, 110–126

[6] Smith, M.J., Karsh, B.-T., Carayon, P., Conway, F.T., *Controlling Occupational Safety and Health Hazards*, 2003

[7] Iqbal, M.S., Awais-E-Yazdan, M., Mushtaq, M., Birau, R., Ninulescu, P.V., Cirjan, N.T., *Determinants of Stock Price Volatility: An Empirical Investigation of Firms in Textile Sector of Pakistan*, In: Revista de Stiinte Politice, 2024, 83, 98–107

[8] Awais-E-Yazdan, M., Hassan, Z., Ejaz, A., Spulbar, C., Birau, R., Mitu, N.E., *Investigating the nexus between safety training, safety rules and procedures, safety performance and protection against hazards in Pakistani construction companies considering its impact on textile industry*, In: Industria Textila, 2022, 73, 1, 48–53, https://doi.org/10.35530/IT.073.01.202154

[9] Shaikh, M.A., Weiguo, S., Shahid, M.U., Ayaz, H., Ali, M., *An assessment of hazards and occupational health & safety practices for workers in the textile industry: a case study*, In: Journal of Academic Research in Business and Social Sciences, 2018, 8, 12, 333–347

[10] Farooqui, R.U., Ahmed, S.M., Panthi, K., *Developing Safety Culture in Pakistan Construction Industry–an Assessment of Perceptions and Practices among Construction Contractors*, In: Proceedings of the Fourth International Conference on Construction in the 21st Century: Accelerating Innovation in Engineering, Management and Technology (CITC IV 2007), Gold Coast, Australia, 2007, 420–437

[11] Khan, W.A., Mustaq, T., Tabassum, A., *Occupational health, safety and risk analysis*, In: International Journal of Science, Environment and Technology, 2014, 3, 4, 1336–1346

[12] Hassan, S.A., *Health, safety and environmental practices in the construction sector of Pakistan*, 2012

[13] Neal, A., Griffin, M.A., *Safety climate and safety at work*, 2004

[14] Vinodkumar, M.N., Bhasi, M., *Safety management practices and safety behaviour: Assessing the mediating role of safety knowledge and motivation*, In: Accident Analysis & Prevention, 2010, 42, 6, 2082–2093

[15] Clarke, S., Cooper, C., *Managing the risk of workplace stress: Health and safety hazards*, In: Routledge, 2004

[16] Neal, A., Griffin, M.A., Hart, P.M., *The impact of organizational climate on safety climate and individual behaviour*, In: Safety Science, 2000, 34, 1–3, 99–109

[17] Phoon, W.O., *Occupational Health in Developing Countries: A Simple Case of Neglect*, In: World Health Forum, 1983, 340–343

[18] Michael, C.S., Bradley, J.C., Wallace, J.C., Burke, M.J., *Workplace Safety: A Meta-Analysis of the Roles of Person and Situation Factors*, In: Journal of Applied Psychology, 2009, 94, 5, 1103
[19] Zohar, D., *A group-level model of safety climate: testing the effect of group climate on microaccidents in manufacturing jobs*, In: Journal of Applied Psychology, 2000, 85, 4, 587
[20] Burke, M.J., Sarpy, S.A., Tesluk, P.E., Smith-Crowe, K., *General safety performance: A test of a grounded theoretical model*, In: Personnel Psychology, 2002, 55, 2, 429–457
[21] Neal, A., Griffin, M.A., *A study of the lagged relationships among safety climate, safety motivation, safety behaviour, and accidents at the individual and group levels*, In: Journal of Applied Psychology, 2006, 91, 4, 946
[22] Bowen, D.E., Ostroff, C., *Understanding HRM–firm performance linkages: The role of the "strength" of the HRM system*, In: Academy of Management Review, 2004, 29, 2, 203–221
[23] Jiang, K., Lepak, D.P., Hu, J., Baer, J.C., *How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms*, In: Academy of Management Journal, 2012, 55, 6, 1264–1294
[24] Lai, D.N., Liu, M., Ling, F.Y., *A comparative study on adopting human resource practices for safety management on construction projects in the United States and Singapore*, In: International Journal of Project Management, 2011, 29, 8, 1018–1032
[25] Lauver, K.J.L., *Human resource safety practices and employee injuries*, In: Journal of Managerial Issues, 2007, 397–413
[26] Vredenburgh, A.G., *Organizational safety: which management practices are most effective in reducing employee injury rates?*, In: Journal of Safety Research, 2002, 33, 2, 259–276
[27] Campbell, J.P., McCloy, R.A., Oppler, S.H., Sager, C.E., *A theory of performance*, In: Schmitt, N., Borman, W. C. & Associates (Eds.) Personnel Selection in Organizations, 1993
[28] Zohar, D., Luria, G., *A multilevel model of safety climate: cross-level relationships between organization and group-level climates*, In: Journal of Applied Psychology, 2005, 90, 4, 616
[29] Seo, D.C., *An explicative model of unsafe work behaviour*, In: Safety Science, 2005, 43, 3, 187–211
[30] Wu, T.C., Chen, C.H., Li, C.C., *A correlation among safety leadership, safety climate and safety performance*, In: Journal of Loss Prevention in the Process Industries, 2008, 21, 3, 307–318
[31] Cavazza, N., Serpe, A., *Effects of safety climate on safety norm violations: exploring the mediating role of attitudinal ambivalence toward personal protective equipment*, In: *Journal of Safety Research*, 2009, 40, 4, 277–283
[32] Hofstede, G., *Dimensionalizing cultures: The Hofstede model in context*, In: Online Readings in Psychology and Culture, 2011, 2, 1, 8
[33] Littrell, J.L., *Taking the perspective that a depressive state reflects inflammation: implications for the use of antidepressants*, In: Frontiers in Psychology, 2012, 3, 297
[34] Cropanzano, R., Mitchell, M.S., *Social exchange theory: An interdisciplinary review*, In: Journal of Management, 2005, 31, 6, 874–900
[35] Gouldner, A.W., *The norm of reciprocity: A preliminary statement*, In: American Sociological Review, 1960, 161–178
[36] Huang, Y.H., Lee, J., McFadden, A.C., Murphy, L.A., Robertson, M.M., Cheung, J.H., Zohar, D., *Beyond safety outcomes: An investigation of the impact of safety climate on job satisfaction, employee engagement and turnover using social exchange theory as the theoretical framework,* In: Applied Ergonomics, 2016, 55, 248–257
[37] Tsui, A.S., Pearce, J.L., Porter, L.W., Tripoli, A.M., *Alternative approaches to the employee-organization relationship: does investment in employees pay off?,* In: Academy of Management Journal, 1997, 40, 5, 1089–1121
[38] Alruqi, W.M., Hallowell, M.R., Techera, U., *Safety climate dimensions and their relationship to construction safety performance: A meta-analytic review,* In: Safety Science, 2018, 109, 165–173
[39] Cohen, A., Smith, M., Cohen, H.H., *Safety Program Practices in High versus Low Accident Rate Companies- An Interim Report (Questionnaire Phase)*, In: Professional Safety, 1975
[40] Cohen, H.H., Cleveland, R.J., *Safety program practices in record-holding plants*, In: Professional Safety, 1983, 28, 3, 26–33
[41] Zohar, D., Luria, G., *A multilevel model of safety climate: cross-level relationships between organization and group-level climates*, In: Journal of Applied Psychology, 2005, 90, 4, 616
[42] Tinmannsvik, R.K., Hovden, J., *Safety diagnosis criteria—development and testing*, In: Safety Science, 2003, 41, 7, 575–590
[43] Burke, M.J., Dunlap, W.P., *Estimating interrater agreement with the average deviation index: A user's guide*, In: Organizational Research Methods, 2002, 5, 2, 159–172
[44] DiMaggio, P.J., Powell, W.W., *The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields,* In: American Sociological Review, 1983, 48, 2, 147–160
[45] Scott, W.R., *Approaching adulthood: the maturing of institutional theory*, In: Theory and Society, 2008, 37, 427–442
[46] Chhokar, J.S., *Behavioural safety management*, In: Vikalpa, 1990, 15, 1, 15–24
[47] Hofmann, D.A., Stetzer, A., *A cross-level investigation of factors influencing unsafe behaviours and accidents*, In: Personnel Psychology, 1996, 49, 2, 307–339
[48] Hofmann, D.A., Stetzer, A., *A cross-level investigation of factors influencing unsafe behaviours and accidents*, In: Personnel Psychology, 1996, 49, 2, 307–339
[49] Lingard, H., Rowlinson, S., *Behaviour-based safety management in Hong Kong's construction industry*, In: Journal of Safety Research, 1997, 28, 4, 243–256

[50] Anderson, J.R., *Skill acquisition: Compilation of weak-method problem situations*, In: Psychological Review, 1987, 94, 2, 192
[51] Baldwin, T.T., Ford, J.K., *Transfer of training: A review and directions for future research*, In: Personnel Psychology, 1988, 41, 1, 63–105
[52] Stout, R.J., Salas, E., Kraiger, K., *The role of trainee knowledge structures in aviation team environments*, In: The International Journal of Aviation Psychology, 1997, 7, 3, 235–250
[53] Baldwin, T.T., Ford, J.K., *Transfer of training: A review and directions for future research*, In: Personnel Psychology, 1988, 41, 1, 63–105
[54] Ford, J.K., Quiñones, M.A., Sego, D.J., Sorra, J.S., *Factors affecting the opportunity to perform trained tasks on the job*, In: Personnel Psychology, 1992, 45, 3, 511–527
[55] Blaikie, N., *Confounding issues related to determining sample size in qualitative research*, In: International Journal of Social Research Methodology, 2018, 21, 5, 635–641
[56] Cox, S.J., Cheyne, A.J., *Assessing safety culture in offshore environments*, In: Safety Science, 2000, 34, 1–3, 111–129
[57] Zhu, Q., Sarkis, J., *The moderating effects of institutional pressures on emergent green supply chain practices and performance*, In: International Journal of Production Research, 2007, 45, 18–19, 4333–4355
[58] Liu, I.F., Chen, M.C., Sun, Y.S., Wible, D., Kuo, C.H., *Extending the TAM model to explore the factors that affect intention to use an online learning community*, In: Computers & Education, 2010, 54, 2, 600–610
[59] Roxas, B., Coetzer, A., *Institutional environment, managerial attitudes and environmental sustainability orientation of small firms*, In: Journal of Business Ethics, 2012, 111, 461–476
[60] Zhu, Q., Sarkis, J., *The moderating effects of institutional pressures on emergent green supply chain practices and performance*, In: International Journal of Production Research, 2007, 45, 18–19, 4333–4355
[61] Hair, J.F., Ringle, C.M., Sarstedt, M., *PLS-SEM: Indeed a silver bullet*, In: Journal of Marketing Theory and Practice, 2011, 19, 2, 139–152
[62] Henseler, J., Ringle, C.M., Sinkovics, R.R., *The use of partial least squares path modeling in international marketing*, In: New Challenges to International Marketing, Emerald Group Publishing Limited, 2009, 277–319
[63] Chin, W.W., *Commentary: Issues and opinion on structural equation modeling*, In: MIS Quarterly, 1998, VII–XVI
[64] Henseler, J., Ringle, C.M., Sinkovics, R.R., *The use of partial least squares path modeling in international marketing*, In: New Challenges to International Marketing, Emerald Group Publishing Limited, 2009, 277–319
[65] Fornell, C., Larcker, D.F., *Evaluating structural equation models with unobservable variables and measurement error*, In: Journal of Marketing Research, 1981, 18, 1, 39–50
[66] Hair, J., Hollingsworth, C.L., Randolph, A.B., Chong, A.Y.L., *An updated and expanded assessment of PLS-SEM in information systems research*, In: Industrial Management & Data Systems, 2017, 117, 3, 442–458
[67] Kline, R.B., *Principles and practice of structural equation modeling*, Guilford Publications, 2023
[68] Chin, J.L., *Introduction to the special issue on diversity and leadership*, In: American Psychologist, 2010, 65, 3, 150
[69] Tenenhaus, M., Vinzi, V.E., Chatelin, Y.M., Lauro, C., *PLS path modeling*, In: Computational Statistics & Data Analysis, 2005, 48, 1, 159–205
[70] Barling, J., Kelloway, E.K., Iverson, R.D., *High-quality work, job satisfaction, and occupational injuries*, In: Journal of Applied Psychology, 2003, 88, 2, 276
[71] Lawler, E.J., *An affect theory of social exchange*, In: American Journal of Sociology, 2001, 107, 2, 321–352
[72] Wachter, J.K., Yorio, P.L., *A system of safety management practices and worker engagement for reducing and preventing accidents: An empirical and theoretical investigation*, In: Accident Analysis & Prevention, 2014, 68, 117–130
[73] Bosak, J., Coetsee, W.J., Cullinane, S.J., *Safety climate dimensions as predictors for risk behaviour*, In: Accident Analysis & Prevention, 2013, 55, 256–264
[74] Bender, W.N., *Project-based learning: Differentiating instruction for the 21st century*, Corwin Press, 2012
[75] Bosak, T., Knoll, A.H., Petroff, A.P., *The meaning of stromatolites*, In: Annual Review of Earth and Planetary Sciences, 2013, 41, 1, 21–44
[76] Wachter, J.K., Yorio, P.L., *A system of safety management practices and worker engagement for reducing and preventing accidents: An empirical and theoretical investigation*, In: Accident Analysis & Prevention, 2014, 68, 117–130
[77] Podsakoff, P.M., MacKenzie, S.B., Podsakoff, N.P., *Sources of method bias in social science research and recommendations on how to control it*, In: Annual Review of Psychology, 2012, 63, 539–569
[78] Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., Podsakoff, N.P., *Common method biases in behavioural research: a critical review of the literature and recommended remedies*, In: Journal of Applied Psychology, 2003, 88, 5, 879
[79] Awais-E-Yazdan, M., Iqbal, M.S., Mushtaq, M., Birau, R., Popescu, V., Ninulescu, P.V., *Green HRM practices in textile sector of Pakistan and its impact on green innovation and environmental sustainability*, In: Industria Textila, 2024, 75, 3, 275–282, http://doi.org/10.35530/IT.075.03.202383
[80] Li, C., Murad, M., Awais-E-Yazdan, M., *The impact of leadership styles on employee safety behaviour among Chinese healthcare workers: The moderating role of cooperation facilitation*, In: The International Journal of Health Planning and Management, 2023, 38, 5, 1377–1395

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