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Revolutionising Organisational Safety and Health Management in the Nigerian Manufacturing Industry via Active Employee Involvement

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Abstract. *The concerns with the increasing rate of preventable accident occurrences in Nigeria's manufacturing sector required a renewed focus on occupational safety and health (OSH). Specifically, despite the number of interventions and the amount of spending on interventions, the effects have remained minimal. Also, despite the efforts of researchers and their suggestions, little or no impact has been noticed as OSH continues to be inadequate. These problems call for a fresh approach and consultation with the individuals who will be utilising these solutions most directly (the workers) to address these issues at their core. This paper is part of a large mixed-method study designed to explore how to improve the efficacy of OSH in Nigeria. However, this present paper reports part of the initial phase as it examines the perception of blue-collar workers in the Nigerian industry to understand how well the existing measures have satisfied their safety needs from the standpoint of available human resource management practices (HRM practices). Hence, this work uses a cross-sectional research design to gather data from both registered and non-registered workplaces located in cities in three Nigerian states, totaling 633 required participants. A mix of simple random and convenience sampling techniques was applied to select the expected samples. SPSS software version 26 was used to analyse the 641 responses. The blue-collar workers constituted the unit of analysis for this phase. The findings indicated that there are diverse opinions among Nigerian manufacturing blue-collar workers regarding the accessibility and applicability of the HR practices under investigation. Based on the findings, recommendations for improving OSH practices in the manufacturing industry are suggested with the hope of maximising employee involvement in strengthening the efficacy of OSH interventions in Nigerian manufacturing workplaces.*

Keywords: Blue-collar workers; human resource management practices; manufacturing industry; occupational health and safety; perception

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1. Introduction

The success of an organisation and its continued relevance in a given economy is a necessity attributable to the active state of its maintained health and safety at work. Incidentally, while several organisations wish to benefit from the deliverables of OSH, maintaining this in many organisations has become a matter of major global concern (Hedlund *et al.*, 2016; Vuorio, Rantonen, Johnson, *et al.*, 2014). Occupational accidents and injuries were projected to surpass natural causes of mortality and acknowledged as the second leading cause of death worldwide in 2020 (Gyekye, 2006) due to the frequency of their occurrences. The International Labour Organisation (ILO, 2016) revealed that annually, industrial accidents affect approximately 2.3 million individuals. About 750,000 or three-quarters of a million workers experience work absenteeism due to illnesses or sustained injuries on the job (ILO, 2016). Apart from the social, financial, and several other detrimental impacts on the economy and environment (Barbaranelli, Petitta, & Probst, 2015), many workers quit their jobs involuntarily due to a temporary or permanent disability, which could have affected their productivity (ILO, 2016). Extant records showed that the developed economies experience about 5% –7% of all reported fatalities with an estimated cost of around 1.8% – 6% of gross domestic product (Takala, Hämäläinen, Saarela, *et al.*, 2014) and about US\$2.8 trillion (about 2.1 trillion Euros) to the world economy (ILO, 2016). Regarding developing countries, incidences of safety refraction are commonplace with many workplaces operating below expected standards. Work-related incidents are daily occurrences and major topics in the media (Adebisi *et al.*, 2009). It is reported that about 24 fatalities per 100,000 employees occur annually (Hamalainen *et al.*, 2009) within this environment, which is among the top death rates recorded globally (Abubakar, 2015). In Nigeria alone, different degrees of work-related fatalities are experienced, including at least 200 fatal cases every day and a monetary loss of billions between April 28, 2009, and April 2010 (Wogu, 2011). The available figures only represent the tip of the iceberg, as incidents often go underreported or improperly documented (ILO, 2016). Accordingly, the records of incidences remain inconclusive in developing countries because of inappropriate record keeping and lack of a valid database.

It is noted that the fundamental breeding factors for safety compromises originate in the workplace (Yorio & Wachter, 2014) and are exacerbated by a myriad of factors such as safety ignorance, apathetic safety behaviour, deficient safe work procedures, management lapses and leadership amongst others (Adeogun & Okafor, 2013; Leman *et al.*, 2010). Upholding standard safety has been notably challenging due to the uncooperative attitudes of the key stakeholders including employees' indifferent attitudes, entrenched faulty perceptions, and general approaches to workplace safety, etc, that portray safety as an impossible task (Adeyemi *et al.*, 2016; Oyelohunnu, 2009). Even in places where employers had invested in providing some basic safety equipment, these provisions go underutilised due to ignorance of safety essentials and/or indifference of employees (Adeyemi *et al.*, 2016). Many workers lacked the fundamental attitudes and



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behaviours toward safety, and several others had traded off their safety for their well-being to follow managers' orders, even when doing so meant compromising safety to maintain their jobs (Umeokafor *et al.*, 2014). Many employers prioritize productivity over employee well-being and safety, while some employers believe maintaining safety standards is unfeasible and expensive. They would reluctantly set up emergency provisions when compelled to do so (Jilcha, Kitw, & Beshah, 2016), which often might be either because an incident had happened, in preparation for statutory workplace inspection, or when legally mandated. Several others disregard sound management techniques on grounds of unconducive economic circumstances (Adeyemi, Akinyemi, Musa, & Olorunfemi, 2016). In addition to these factors, governments' reluctance to set acceptable OHS standards and maintain requisite measures constitutes a significant barrier to sound OSH practices (Alfers *et al.*, 2016; Jilcha *et al.*, 2016). Workplace safety management in developing countries is evidently in its infancy, and those responsible for fixing the situation appear indifferent to the deplorable condition (Adeyemi, Akinyemi, Musa, & Olorunfemi, 2016). The OSH management scenario suggests that many of the key stakeholders have become disenchanted from the realities of safety incidents while many workers seem to have accepted it as part of their job, perhaps, as the required safety measures remain either pending or unattainable. Yet, while little or no changes have been made in many developing countries, safety improvements have been recorded in other nations, validating the claims that safety issues are avoidable and remediable (ILO, 2016).

Incidentally, a plethora of extant literatures validated the fact that occupational safety issues are controllable, avoidable, and standard safety practices could be embraced with appropriate safety interventions (Adeyemi *et al.*, 2016; ILO, 2016; Lucchini & London, 2014). The state of workplace safety in developing nations has particularly become more worrisome given that safety measures have become more often remedial than proactive, especially when the costs of remedy tend to outweigh those of prevention. Although it may be erroneous to claim that there is a total lack of safety awareness (as there are avenues within which the need for safety is being sensitized and some organisations do permit safety practices), the general state of safety and health, which remains poor in workplaces, questions the quality of safety awareness as well as offered interventions. Nigeria is an example of a developing, sub-Saharan country with serious occupational health and safety management challenges (Abubakar, 2015). Its accidents, injuries, and ill-health accounts are not only daunting, but its occupational safety improvement measures appear to be poor compared to counterpart countries like South Africa and India (Du Plessis, 2017). Avoidable work-related incidents are daily occurrences captured in the media (Adebiyi *et al.*, 2009), and given the frequency of work-related incidents, these are ranked third in fatalities after vehicular accidents and homicide (Adegun *et al.*, 2011). This situation has made Nigeria declared as an African country that urgently needs to focus on workplace safety (British Safety Council, 2009). Incidentally, the country's OSH performance is not up to par with the perpetual failure to follow internationally recommended OHS guidelines. Also, establishing sound OHS is still seen in many organizations as a move that can only be made with an economy, which is robust enough to bear the extra costs that preventing work risks would entail (Lucchini & London, 2014). In addition, the severity of the high unemployment rate, the prevalence of precarious employment patterns, poor working conditions, declining rates of unionization, inadequate infrastructural facilities for socio-economic development, and similar facets (Ollé-espluga *et al.*, 2015), are added



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concerns that necessitate a firmer approach to resolving OSH problems in Nigeria, especially, as these situations have not only strained employment relationships but have also made the administration of occupational health and safety harder (Atilola, 2012).

This article is focused on the Nigerian environment as an example of a developing nation. This emphasis is justified by the blatantly weak safety performance demonstrated in many preventable events (near misses, injuries, health challenges, and work-related death) in the Nigerian manufacturing industrial sector, which is of serious concern. It is a key industry that impacts employment as it employs a substantial number of people, yet the nature of work processes and working environments oftentimes expose employees to hazards and risks, thus constituting a potent ground for workplace injuries and fatalities. Although safety and health concerns may vary across sectors, the practices of most manufacturing workplaces, such as risky operations pertaining to the use of machinery, deficient resources, and several other factors have contributed to safety incidents as well as continue to create significant problems in the manufacturing industrial settings (Aremu & Adeyemi, 2011; Adebisi, 2009). Due to the high frequency of occurrences of preventable incidents in the manufacturing industry, it is crucial to pay more careful attention to safety in the industry.

The international labour organisation mandates appropriate management of human resources as a basic human right with suggested pathways to achieve it (ILO, 2016). Against these backdrops, the aims of the present paper are twofold. First, it investigates perceptions of the blue-collar workers of the Nigerian manufacturing industry to understand the extent to which renowned safety interventions such as HRM practices have been maximized toward motivating workers' safety practices as well as participative interest. This is to illuminate the conflicting zones, which might have impeded their relevance in the Nigerian context, with an intent to propose strategies to boost their efficacy within the manufacturing industry in Nigeria. This is because uncovering the discrepancies between theory and practice results in more potent interventions and advancements. In addition, it aimed to investigate the extent to which the available measures were effective to blue-collar workers' safety performances and the expectations of their efficacy on OSH. Second, it investigates what needs to be done for these standard measures to significantly contribute to sharpening the OSH landscape in the Nigerian manufacturing industry as established in other developed environments. To this end, this work uses quantitative research. The survey method was employed to provide specific information on blue-collar workers' perspectives on important OSH problems and help determine how well the current measures have met safety demands as intended. This article presents a self-administered survey study that was part of a mixed-methods research initiative to improve occupational health and safety in Nigeria's manufacturing sector. The survey findings has contributed towards improving OSH in manufacturing industry workplaces in Nigeria.

2. Literature review

This section provides an exposition on human resource management (HRM) practices and some underlying theories such as AMO and SET relating to employees' safety performance behaviours.



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2.1 The concept of HRM and HR practices in employee safety performance behaviours

Human resource management (HRM) is a concept strongly associated with the strategic activities of managing people while HRM practices (or simply HR practices) include all the engaged activities in an HRM system or its policies. For instance, according to Delery and Doty (1996), human resource management practices encompass a collection of coherent policies and practices that are strategically developed and executed to guarantee that an organisation's workforce contributes to its overall business goals. Not only are the employees' demonstrated performances evidence of their exposure to HRM practices, but employees' conduct or work behaviours are likely to be responsive to, or readily influenced by the deployed HR practices (Ogunyomi & Bruning, 2016). The significant effects of HRM practice on performance have been established on different organisational outcomes, including but not limited to employee turnover, productivity, profitability, service quality, and other measures of firm performance or effectiveness (Chowhan, 2016; Amin *et al.*, 2014; Bal, Bozkurt, & Ertemsir, 2013), and individual employee attitudes and behaviours including organisational citizenship, withdrawal, and turnover intention along with how HR practices influence employee behaviour flow through their potential ability to influence HR outcomes like employees' competencies, skills, abilities, motivation, and knowledge (Jiang, Lepak, Hu, & Baer, 2012).

About HR practices specific, the list is unlimited. However, the implementation of HRM practices, such as teamwork, autonomy, employee participation, and compensation were found as motivational tools leading to increase employee productivity. Darwish, Singh, and Wood (2016) established that training is a superior source for promoting various aspects of organisational performance within the financial services industry in developing countries, with a tentative stamp on the use of extrinsic incentives such as pay and promotion. There is empirical evidence in support of the nexus between training and various performances concerning improved quality of services, innovations (Bal *et al.*, 2013), employee engagement enhanced employee commitment (Chew & Chan, 2008), firm profitability, and general effectiveness (Osman *et al.*, 2011). Likewise, HRM processes enhance employees' behaviour, attitude, and knowledge such that it resulted in increased employee commitment, cooperation, and motivation, enhancing their capacity to provide the company with a sustainable competitive edge and the capacity of organization to reach its objectives (Shamsudin, Subramaniam, & Ramalu, 2014; Tan & Nasuridin, 2010). This is because these practices create the atmosphere for motivating employees' high involvement and active participation in organisational goals (Bal, Bozkurt, & Ertemsir, 2013). The relevance of HRM practices for improving OSH is also supported (Geldart, Smith, Shannon, & Lohfeld, 2010; Vinodkumar & Bhasi, 2010; Burke *et al.*, 2006).

Wambua and Karanja (2016) found that, except for employee involvement, HRM practices such as reward management, performance appraisal, and training and development had significant effects on employee performance in a commercial bank in Nairobi, Kenya. Training and development, with rewards and compensation, were found to improve worker performance and according to Shitsama (2011), leveraging the potential of such HR practices is vital to boost employee efficiency. Similarly, training, recruitment, career planning, performance appraisal, employee participation, compensation, and job design were linked to university performance in Malaysia by Amin *et al.* (2014). Although the effectiveness of HRM practices is notable, their association with performance remains conditional. For instance, the inherent uniqueness of HR practices to employees'



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satisfaction, motivation, sense of belonging, loyalty, and so on, inherently impacts employees' work engagement and willingness to contribute to organisational success. In contrast, combinations of practices have the synergistic capacity to stimulate effective strategies for appropriate people management (Darwish *et al.*, 2016; Fabi *et al.*, 2015). Recent literature on HRM interactions (Ogunyomi & Bruning, 2016; Armstrong, 2014) has advanced this debate and provided new empirical evidence to explain that the functionality of HR practices may still be conditional. It is argued that, among other things, appropriate use of HR practices, well-designed HR practices, meaningful implementation, adequacy, and the satisfaction derived from such treatment are highly associated with employees' organisational commitment and work engagements, which in turn promote high performance (Oke, Aigbavboa, & Odia, 2016; Ogunyomi & Bruning, 2016; Armstrong, 2014). Likewise, such HR practices that meet employees' needs foster favourable attitudes and result in improved performance outcomes. Based on this understanding, some of the attributes of the investigated HR practices in this present study (safety training (ST), safety incentive (SI), open communication (OC), employee involvement and participation (EIP), are examined with respect to establishing its effects on safety performance.

2.1.1 Safety training practices and performance outcomes

Safety training describes the systematic procedures involved in enhancing one's knowledge and skills to effectively perform a specific job (Aguinis & Kraiger, 2009) and improving the attitude and knowledge needed to ensure effective performance. Regarding its safety connotation, it is a crucial part of a safety and health management strategy designed to raise safety awareness, teach workers how to prevent workplace incidents following OSH rules (Laberge *et al.*, 2014), and build their skills for addressing potential work risks (Yorio & Watcher, 2014). Such activity usually involves instructions on, for example, how to identify and control workplace hazards, standard work practices, the adequate use of PPE, and other preventive tactics. It also facilitates the setting of safety goals to promote personnel's effectiveness in promoting safety. Investing in safety training motivates workers and reinforces their sense of security while promoting collaboration and coordination among the employees, which are vital factors needed to inculcate acceptable behaviour and promote efforts at averting the occurrence of preventable incidents (Burke & Signal, 2010). The provision of safety training to employees confers a considerable degree of job control, thereby enhancing their engagement levels, willingness to assume safety-related duties, and motivation to perform safety tasks with diligence (Vinodkumar & Bhasi, 2010). Though crucial, evidence suggests that it may not always work and may depend on some factors. The effectiveness of safety training extends beyond the number of people who have it, but the benefits come from the quality of the training. Laberge *et al.* (2014) emphasise that training benefits depend on the goal, intent, and methods used to create safety awareness. Burke *et al.* (2006) claim that OSH training is more effective when the learner is more engaged rather than passively receiving information (through lectures and video). Bena *et al.* (2009) suggest that a safety training programme's characteristics and aim can predict its efficacy. Safety training should improve the technical and professional skills needed to complete jobs. According to Zacharatos *et al.* (2005), training that empowers workers to apply new skills rather than just teaching safety yields better results. This allows them to recognise their limits, make choices, communicate, and share knowledge and abilities. Like these views, studies have found that workers' dissatisfaction with training methods and frameworks predicts their non-participation or seriousness with safety training, which lowers commitment.



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2.1.2 Safety incentives practices and performance outcome

Safety incentives are notable with the capacity to elicit and reinforce desired behaviours. Various incentive practices have been linked to high-performance work practices that motivate and encourage employees to exert greater work effort (Jiang *et al.*, 2012). Offering incentives for safe behaviour boost employee health and safety involvement as well as promotes their decision-making, which improves safety (Jiang *et al.*, 2012). In addition, studies (Chuang *et al.*, 2013; Collins & Smith, 2006) argued that employees are more likely to pursue organisational goals and exert greater effort in performing their tasks if it is explicitly stated that engaging in such behaviours will be appreciated and properly compensated particularly if the rewards will cover some of their expenditures. It is also consistent with the expectancy-valence theory (Porter & Lawler, 1968; Vroom, 1964), whose concept advances the idea that human behaviour is shaped by its consequences (Armstrong, 2012). According to this theory, a vital way to enhance employee performance is by providing positive consequences for that performance, such that whatever is rewarded becomes what is repeated or perceived as a desired behaviour by the employees. Apparently, incentives that offer employees concrete and measurable benefits for their contributions towards achieving organisational objectives (such as safety) are more likely to drive repeat performance, based on this theory. The legitimacy of these theories is, therefore, established in the claims that an incentive system that adequately considers financial reward, promotion, compensation, and other recognition of employees' efforts or non-monetary in nature (such as verbal recognition, awards, expressions of gratitude, offering useful packages, etc.) may inspire employees to be serious with their tasks and excite them to increase their participation in positive acts for higher organisational performances (Soomro *et al.*, 2011; Vinodkumar & Bhasi, 2010; Zacharatos *et al.*, 2005; Vredenburg, 2002).

In some studies, a direct correlation between compensation practices and employee performance was established (Chew & Chan, 2008). In support, Silverman (2004) found that non-financial means such as offering fringe benefits, paid holidays, subsidized meals, medical insurance, praise, acknowledgment, and a change in job status on account of safety motivated and aroused workers' level of involvement in the firm's goals, as well as increased affective commitment. However, in contrast, Lai *et al.* (2011) reported an inverse correlation between the utilisation of financial incentives and the occurrence rate of previously unexperienced accidents after the introduction of the reward system. It turned out that the more employees are compensated for fewer accidents, the more accidents occur on sites. This observation has propelled the argument that monetary rewards may not really be a suitable incentive capable of changing an undesired behaviour. In a similar vein, Vredenburg (2000) noted that monetary rewards did not affect reducing workplace incidents in the United States. Nonetheless, the effectiveness of safety incentives has hinged on the importance of ensuring that good incentives programmes are adopted, in terms of the sincerity of purpose and meaningfulness, and that such choices must be valuable, relevant, consistent, timely, and well-designed to achieve desired results. In addition, the incentives must be aligned with performances and the intention and modes of operation must be genuinely perceived as constructive by the employees instead of the traditional



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methods, which are oriented towards control, domination, and subordination-based approaches to management.

2.1.3 Open communication and performance outcome

Open communication is a critical managerial practice that entails the unrestricted broadcast of specific and general work-related communications and the sharing of the required information, which has significantly influenced employees' safety performance behaviours in different aspects (Fernández-Muñoz *et al.*, 2014; Zin & Ismail, 2012). A free or good communication flow between management and employees is a suitable effort towards goal attainment and the smooth operation of an organisation. According to these scholars, in addition to the standard safety training provided to workers, it may be necessary to provide other forms of motivational strategies and safety support to encourage employees to take responsibility for their own well-being and safety, as well as that of others, which is a key essence of good communication practice. Importantly, the metric of operation of a two-way communication exchange is documented with the argument that it becomes initiated when an organisation supports effective open safety communication practices. In such a strategy, management provides employees with pertinent safety-related information on the hazards and risks associated with the organization's operations to prepare them for safe work practices. Not only that but employees are also encouraged to be honest in sharing the observed risky behaviours or safety situations with the management or cautioning others about unsafe practices while the management listens and acts on the raised concerns of employees and even consults employees in making safety decisions. Standard safety communication tools include a clear HSE mission statement and policy, regular safety meetings, safety inductions, safety weeks, individual contact through walkabouts and safety committees, print media (newsletters, e-mails, updated global HSE information, memoranda, etc.), and regular feedback on performance. It allows employees to direct their complaints to the proper authorities and provide critical feedback on workplace safety problems. Thus, organisations that prioritize effective open safety communication are more likely to influence their employees' safety behaviour, including safety participation, safety compliance, and safety achievements.

2.1.4 Employee involvement and participation, and performance outcome

The management practice of involving and encouraging employee participation is a behavioural strategy that seeks to engage individuals or groups in the upward communication and decision-making process within an organisation (Vredenburg, 2002). This practice has been viewed as a component of firms' supportive policies, in which employees are provided the opportunity to contribute to organisational procedures, particularly in the creation of better working conditions (Jiang *et al.*, 2012). It is an opportunity to improve the HR package that motivates employees to contribute to organisational goals. Similarly, it is viewed as an indication of an organisation's desire to form an emotional connection with its employees, which demonstrates an appreciation for their potential and value in achieving organisational goals. When employees perceive that their effort is valued and recognized, their work becomes more meaningful, leading to increased employee work commitment. With regards to workplace safety, it is argued that workers are more likely to embrace and advocate for precautionary measures when they are involved in the group that oversees the implementation of



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safe work procedures, particularly when they are really allowed to contribute to creating safe job procedures and influence decision-making. Such an opportunity engenders a sense of empowerment in employees because it shows employees that the management recognises their value to the company. As such, they are motivated to be more enthusiastic and zealous about attaining organisational objectives (Yorio & Watcher, 2014). Employee participation is well-established in the categories of HRM practices that enhance employee performance (Soomro *et al.*, 2011) and, of course, general organisational performance. Ford and Tetrick (2011) reported that integrating employees into the safety management process through their participation in safety committees empowered the employees psychologically, which in turn improved the organisation's performance in safety. Subramaniam *et al.* (2016) reported that encouraging safety participation facilitates employees' safe work acts. However, for these practices to yield the expected results, they need to be proactive. Subramaniam *et al.* (2016) argued that the aim of employee participation is achieved when management is truly supportive and creates the right work atmosphere for employees to freely engage in discretionary behaviours. More importantly, evidence supports that employees interpret a work climate where employee involvement is supported as a show of readiness for change.

2.2 Safety performance behaviour and possible antecedent(s)

Safety behaviour describes specific patterns of actions demonstrated in the line of safety and the degree to which standard safety practices are appreciated and followed (Burke & Signal, 2010; Christian *et al.*, 2009). The term "safety performance" refers to an individual's safety attitudes, behaviours, or actions (Christian *et al.*, 2009), which has been extensively described in the available literature. Earlier proponents of safety behaviour argued that this could be interpreted as practises demonstrating concern and actions aimed at enhancing safety situations, based on dedicated work practices to reduce risk including the use of personal protective equipment, communicating health and safety information, ensuring safety compliance and participation, and exercising employee rights and responsibilities are examples of such practices (Fugas, Silva, & Melia, 2012; Neal & Griffin, 2006). Safety compliance pertains to the fundamental occupational duties that an individual is typically obligated to perform to maintain workplace safety (Neal & Griffin, 2006). These duties may include but are not limited to, conforming to established work procedures, abiding by the safety protocols outlined in the organisation's policies, and engaging in mandatory safety practices (Kaufman, 2014). Conversely, safety participation indicates those activities that individuals carry out (not because they are instructed or required to do so for personal safety) to contribute towards creating a supportive safety environment (Neal & Griffin, 2006). Such identified activities include participation in safety planning, showing interest in safety activities, helping co-workers avoid unsafe acts, pointing out potential hazards, and exercising efforts in improving workplace safety (Burke & Signal, 2010; Vinodkumar & Bhasi, 2010). This behavioural display is frequently borne out of the free will (voluntary in nature) and often involves extra-role acts. As a result, this usually requires motivational factors to stir workers' feelings of indebtedness to participate in safety activities (Neal & Griffin, 2002), unlike compliance, which is generally commanded.



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These two factors have been acknowledged as distinct yet related contextual factors that influence safety performance. For instance, it is argued that for the fact that employees are equipped and have a high knowledge of safety rules may not guarantee their compliance; instead, the knowledge of safety coupled with actual motivation is what impacts safety outcomes. Although the factors listed above are crucial, literature further asserts that stimulating employees' behaviours requires more than the skills, knowledge, and immediate motivation provided. Other findings support that top management's commitment to safety management and their leadership role is predictive of effective safety performance or systems (Yorio & Wachter, 2013). Such positive perceptions increase employee interest in the implemented HR practices to improve their safety behaviour, resulting in better safety performance outcomes. However, when management disregards safety, employees are compelled to conclude that the company places little importance on safety. Hence, regardless of the HRM practices in place, employees are more likely to disregard safe practises to complete their tasks while maintaining their employment. Thus, some of the theoretical foundations for understanding workplace relations and employees' attitudes for safety interventions at work including the social exchange theory (SET), Ability + Motivation + Opportunity to participate theory (AMO) is briefly explained.

2.3 Theoretical underpinning of the study

The commonly adopted theoretical foundations for providing understanding with regards to workplace relationships have often exploited the tenets of theories such as the social exchange theory (SET), Ability + Motivation + Opportunity to participate theory (AMO), and the expectancy-valence theory (Neal & Griffin, 2006; Vroom, 1964). However, the SET and AMO theories are common foundational conceptual frameworks for investigating work attitudes and behaviours in research. The AMO theory of performance assumes that the capacity of individuals to demonstrate appropriate performance is contingent upon their aptitude, motivation, and the availability of opportunities to participate. As such, the theory has highlighted the importance of contemplating such variables to improve employee performance and outcomes. It presumes within its framework that the achievement of optimal employee performance is contingent upon the possession of necessary abilities, such as skills and competencies, appropriate motivation, and the availability of opportunities for participation within the work environment. This provides a groundwork for advocating for the development of an HRM system that caters to employees' talent requirements and boosts their motivation to generate their best performance and job quality. Consequently, it is supported that well-designed HRM practises (particularly those that enhance skill, motivate, and promote opportunity) are positively correlated with enhanced employee performance outcomes. When employees are managed with practises that provide these vital parameters, organisations have a better chance of achieving their intended goals (Jiang *et al.*, 2013).

Regarding SET's framework, this theory demonstrates that social exchange relationships are characterised by the recurrence of mutually dependent and obligation-generating exchanges of resources (such as services, care, and favourable treatment) between two or more parties (Cropanzano *et al.*, 2007). This kind of relational exchange is found in work relations, in which one party is more likely to reciprocate the deeds



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of another party accordingly to the treatment received (Cropanzano *et al.*, 2007). When applied to safety performance, SET's supports that when an organisation demonstrates genuine concern for the well-being of its employees (translated as a positive safety environment), employees are more likely to develop implicit obligations to reciprocate such a gesture by engaging in safety behaviours that benefit the organisation. Similarly, SET has been utilised to elucidate the reasons behind employees' behaviour, which is usually a response to their perceived organisational relationships and practises. The relationship between HRM and safety performance can be explained through SET. In line with this, the literature argues that employees often interpret the HRM practises they are exposed to at work differently. Thus, when employees view such practises favourably, they may reciprocate the organisation's goodwill by showing greater dedication to the organisation and enthusiasm for achieving its goals (Bowen & Ostroff, 2004). Studies confirmed that perceived organisational exchanges (via HRM practices) lead to reciprocal employee behaviours such as willing obedience to established standards and the voluntary performance of discretionary activities that contribute to the overall well-being of organisational. Such positive work attitudes may include appropriate safety performances, particularly if workers believe that safety is important to their organisations and that engaging in such behaviours is a noble act (Kaufman, 2014).

3. Research methods

This current paper applied a quantitative research approach to investigate the necessary intervention to improve the efficacy of OSH in the Nigerian manufacturing industry. This paper, however, reports a part of the larger study. The required data for the survey phase of the research were collected using a self-administered questionnaire instrument through the "drop-off and pick-up" method. The use of questionnaires has proven effective in gathering quantitative data, widely accepted, cost-effective, easy to analyse, and ultimately useful for generalising (Denscombe, 2007). A pre-existing questionnaire adapted from previously validated questionnaires was used to acquire the participants' responses on issues examined within the study constructs. The use of an existing standard questionnaire was adapted because such an instrument has already been evaluated for reliability and validated in existing studies. This instrument ensures that the questionnaire measures what the researcher wants to measure and that the results can be replicated easily. In this study, a sample of 663 participants from 211 selected manufacturing workplaces including 196 registered and 15 non-registered manufacturing industries across three state capitals in Nigeria, namely Ikeja (Lagos), Akure (Ondo), and Ibadan (Oyo state) were employed to obtain the required data. The employees' anonymity was well-maintained in the inquiry process in line with research ethics.

3.1 Research instrument

The study utilised open-ended and closed-ended questionnaires to get feedback on workplace safety quality evaluations. Open-ended and closed-ended qualitative data improved the study's mixed-methods design (explanatory sequential method). Sections B–E of the questionnaire used a five-point Likert scale of strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). Lower scores indicate less agreement and higher scores more. Section A covered gender, marital status, age, education, months of work experience, job type, workplace accidents, and involvement frequency. In sub-section B, HRMP was measured



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by asking HR practices questions. Safety training (6 items), incentives (9 items), open communication (5 items), and worker participation (5 items) measured this. The items were adjusted from Vinodkumar and Bhasi (2010 & 2011) with Cronbach alphas over 0.6. The scale's dependability Cronbach's alpha coefficients are ST (0.89), SI (0.91), OC (0.89), and EIP (0.90). Section C analysed the top management's safety climate, focusing on eight aspects from Fugas, Silva, and Melia (2012) and Zohar and Luria (2005). With a 0.92 scale, this study's Cronbach's alpha coefficient indicates dependability. Safety leadership is assessed in Section D using five items from Bass and Avolio's (1994) multifactor leadership questionnaire form 5X and the coefficient of this scale is 0.91 Cronbach's alpha. Section E assesses employee safety performance by assessing safety compliance (SCB) and participation (SPB) with 5 questions each from Vinodkumar and Bhasi (2010) and (2011) with sufficient alpha values. Scale reliability SCB and SPB Cronbach alpha is 0.76 and 0.86. This questionnaire originally had 55 items, but pilot testing reduced it to 48. All items had Cronbach alpha coefficients better than 0.6, indicating internal consistency ($\alpha = 0.948$). Using simple, easy-to-understand questions and other standard practices improved measurement quality and response rate. The 20-minute questionnaire was written in English, the study's official language. Quality assurance approaches included anonymity and voluntary participation.

3.2 Research procedure

The questionnaires were hand-delivered to factory management representatives for distribution and collected via "drop-off and pick-up" Under thorough researcher supervision and oversight, this questionnaire dissemination and collection strategy works as it managed Nigeria's data loss and delayed collection. Gatekeepers and personal connections improved workplace access and response rates, especially in the target country with information limits. The Manufacturing Association of Nigeria (MAN) authorised research using the specified firms. A letter from the association's executive director enabled the researcher entry into the companies. The researcher's institution's data-collecting consent letter which outlined the project also distributed. The manufacturing business management gave informed approval to the researcher. A confidential cover note outlining the study's goal and response was attached to the first page of the questionnaire. To indicate their interests, respondents signed the questionnaire's first-page agreement form. HR managers or representatives followed up three days before distribution and collection. Calls or visits were utilised to encourage questionnaire completion on time.

The samples were selected using simple random probability sampling and non-probabilistic sampling, with three employees from each industry randomly selected to represent registered and non-registered manufacturing workplace participants. The researcher also ran a pilot study to evaluate the surveys and identify potential difficulties (Denscombe, 2010). Research professionals assessed the questionnaire's content specificity to determine its contextual relevance. The piloting process revalidated the questions and assessed their viability for the Nigerian manufacturing context. Before distributing the questionnaires, 30 purposively sampled respondents were factory workers from Gauteng (South Africa) manufacturing industries, various employees, and a few officers in the University of Johannesburg's occupational safety office and maintenance department were approached for the pilot study. Some terms were modified to fit Nigerian manufacturing and culture. Care was taken to keep the scales' conceptual meaning as close as feasible to their



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intended application by the original users. Participants in Nigeria's three state capitals received the final questionnaire. To adjust for non-responses, damage losses, and statistical analysis, 800 copies of the questionnaire were issued. It also verified that the findings could be extrapolated to the target group and that a 100% response rate would have produced the same results (Richardson, 2000). Of the 710 surveys recovered (89%), 27 were unused, and 42 were incomplete, leaving 69 useless. The SPSS version 26 was used to evaluate 641 out of 710 surveys ($641/710 \times 100$). For correlation and multiple regression, data were cleaned. Local reliability assessments were done on the research instrument. The collection, appraisal, and storage of sensitive data were ethically considered.

4. RESULT

4.1 Descriptive Summary of Investigated Constructs

The demographics and questionnaire response rates of Nigerian blue-collar manufacturing workers are shown in Table 1. Table 1 shows 432 (67%) male and 209 (33%) female workers. The majority of 350 (54.6%) responders are 26–35 years old (273, 43%) and 18–25 (77). The 36–45 age group follows with 221 (35%). Just 59 replies were 46–55 years old (9%), and 2% (11) were over 56 (1.7%). 357 (56%) had higher education, 154 (24%) secondary education, 64 (10%) school leavers, 62 (10%) technical education, and 4 (0.6%) unschooled. Permanent (327/51%), contract (198/30.9%), regular casuals (63/9.8%), and temporary casuals (53/8.3%). The research uncovered that Nigerian manufacturing workers are agile, young, and could comply with laws. Table 2 used category variables to collect respondents' demographic profiles and as shown in Table 2, the lowest duration of respondents' active work service is 1 month. About 6 respondents have only been employed less than 6 months while the highest year of experience is 300 months (25 years) with 2 respondents in this category. This shows that many of the respondents have been working in their places of work for at least 45 months (approximately 4 years) based on a mean value of 45.29 (SD = 54.14). This information suggests that the study's blue-collar workers have marked understanding of the espoused policies within their organisations, given the months of being engaged in the workplace. Also, there is a higher possibility that they are familiar with the organization's mission and goals.

According to the demographic indications in Table 3 about 503 of the respondents (about 79%) have never experienced any safety-related incident while doing their jobs. 127 of the respondents (about 20%) have been involved in work accidents between 1 and 3 times, and 11 of them (about 2%) have been victims about 4 to 7 times. The information from most of this worker group implied that accidents and injuries at work in Nigerian factories are rare as suggested in the mean value (0.36 ■ 0.86). In addition to this information, 459 participants (approximately 72%) are certain they have never experienced any major injuries in the line of duty. However, 167 persons (26.1%) have been exposed to fatal injuries that resulted in more than 3 days of work absence and such situations have been experienced about 1-3 times. Another 15 persons (2 %) have been exposed to fatal injuries that resulted in more than 3 days of work absence and such situations have been



experienced about 4-7 times. Although this feedback has recorded a low mean value (0.55 ■ 1.034), the account of likely victims is an indication that the zero-incident expectation is yet to be attained in this industry.

Table 1: Demographic variables

Characteristics	Category	Frequency	Percentage %
Gender	Male	432	67.4
	Female	209	32.4
	Total	641	100
Age	18-25	77	12.0
	26-35	273	42.6
	36-45	221	34.5
	46-55	59	9.2
	Over 56	11	1.7
Educational qualification	No education	4	0.6
	School leaver	64	10.0
	Secondary education	154	24.0
	Higher education (Bachelors/Master/PhD) degrees	357	55.7
	Technical	62	9.7
	Total	641	100.0
Employment status	Permanent staff	327	51.0
	Contract	198	30.9
	Regular casuals	63	9.8
	Temporary casuals	53	8.3
	Total	641	100.0

Source: Author's fieldwork

Table 2: Summary of frequency statistics on respondents' composition by job tenure (in Months)

Case Characteristics	Valid	Missing	Minimum		Maximum		Mean	Std. Dev.
Year of employment service	638	3	^a Cases	^b Value (month)	^c Cases	^d Value (month)	45.29	54.138
			1	2	2	300		



			3	3				
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Source: Author's fieldwork

Note: ^a denotes the number of workers in the specified minimum months of employment

^b denotes the minimum number of months of employment

^c denotes the number of employees in the specified maximum months of employment

^d denotes workers' maximum months of employment

Table 3: Respondents' accounts regarding involvement in work-related accidents and exposure to fatal injuries at work

Case Characteristics	No of times	Frequency	Valid Percent	Minimum	Maximum	Mean	Std. Dev.
Frequency of Involvement in work-related accidents	0 times	503	78.5	0	7	0.36	0.862
	1-3 times	127	19.8				
	4-7 times	11	1.7				
	Total	641	100.0				
Exposure to fatal injuries	0	459	71.6	0	7	0.55	1.034
	1-3	167	26.1				
	4-7	15	2.3				
	Total	641	100.0				

Source: Author's fieldwork

4.2 Descriptive statistics

Custom tables investigate employee response percentages for this study's first sub-research aim. To "establish employees' perceptions of HRMP dimensions (safety training, incentives, open communication, employee involvement, and participation) and safety performance behaviour (safety compliance and participation) in Nigeria's manufacturing industry". The under-studied variables' respondents' perceptions are summarised using a 5-point Likert scale with strongly disagree (SD = 1), disagree (D = 2), neutral (N = 3), agree (A = 4), and strongly agree (SA = 5). The data is given in mean-standard deviation tables. Table 4 reveals that many study participants agree on HR practise variable items. Workplace health and safety training is extensive



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(71% of respondents) (3.76 1.07). The mean (3.70 1.09), 70% of respondents, agreed that newly hired workers are adequately taught safety regulations and procedures (ST2). In ST3, 71% stated their companies' safety training programmes emphasise safety (3.76 1.05). Blue-collar workers claim safety training adequately educates emergency response (ST4) (3.67 1.08). 68% of respondents said management encourages staff (ST5) to attend safety training (3.71 1.16). With a moderately high mean score (3.62 1.25), 67% of participants believe that it has a substantial impact on workers' ability to recognise workplace hazards in practical terms (ST6). The mean ratings of the different statements (from highest to lowest) showed that blue-collar workers rate safety training most effectively when safety issues are prioritised in training programmes (ST3), with a mean value of 3.76 1.05. Training employees to analyse workplace dangers (ST6) was the lowest-ranked element in determining safety training effectiveness (3.62 1.25). These scores show that Nigeria's manufacturing context's best appraisal of safety training revolves around its content and safety priority.

In terms of availability and quality, the majority are certain that safety incentives management practises (SI) have been experienced at work to motivate safety performance behaviour, whether in compliance or participation. In quality and content (SI1), 65% of respondents felt that employers take employees' health and safety concerns seriously (3.61 1.25). Some respondents said staff is congratulated, given cash or other awards, recognised in newsletters, etc. for reporting safety issues. Though the remarks had a moderately high mean value (3.17 1.21), 44% agreed with this claim, 30% disagreed, and 25% were undecided.

As part of the incentive content (SI3), 49.3% of respondents claim that colleagues appreciated safe work practices, which pushed them to operate safely (3.30 1.07). Some blue-collar workers (46.3%) favoured supervisors tangibly rewarding employees' safety efforts by awarding meal tickets, gift packs, etc. (SI4). The responses to this question looked polarised, with significant disagreement. Though 46% of respondents agreed that employees' safety efforts are tangibly rewarded (3.19 1.21), 30% disagreed and 24% were undecided, therefore 54% questioned this assertion. In addition, incentive indicators included the possibility of supervisors in their work unit writing about safe practises (SI5). The records showed that 45% of respondents received such incentives at work (3.19 1.23) indicating that Nigerian manufacturing supervisors use this managerial conduct to reward safe work practices. Despite many employees experiencing this at work, the issue was not settled, especially given the magnitude of record inconsistency. Nearly 49% of participants believed employees are routinely recognised for their efforts to promote a safe workplace (SI6). The response has a higher level of agreement (3.26 1.17), but it also suggests that such experience is not universally accepted and cautions against concluding it. SI7, which states that top management recognises safe job performance, is widely accepted (52%), with a somewhat high mean value (3.32 1.17). About 58% of participants believe senior management appreciates employees for working safely (SI8), with a moderately high mean score (3.45 1.09). Workers agreed on the company's safety week festivities and other safety promotional activities (SI9) to raise safety awareness (3.40 1.25). Ranking values showed that the best way to evaluate incentive practices is when they take employees' health and safety suggestions seriously, as noted in variable item S11 (3.61 1.20). Not so valued is compensating employees for reporting safety challenges by any means (SI2) (3.17 1.20).

The perspectives of open communication practices (OC) in driving safe work practices in industrial firms showed that workers can express their safe work opinions through authorised channels. About 64% of



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respondents stated their organisations have a hazard reporting system (OC1) where employees can report hazards (3.59 1.12), which reflects the view that workplace communication is open. The findings also showed that organisations provide standard forums for employees to freely share safety ideas. Management allows employees (67%) to discuss safety issues with them through an open-door policy (OC2) has feedback scores moderately high at 3.69 1.06 with over 67% agreeing (3.69 1.06), that workplace meetings provide enough time to discuss safety problems. Safety performance aims and goals are communicated to workers (OC4) is highly supported (about 69%) with a reasonably high mean score (3.70 1.02). A moderately high mean score of 3.70 1.08 supports the item “supervisors are actively involved in the safety mission of the organisation by providing regular feedback (advice) to employees about their unsafe behaviours (OC5)” in Nigeria's manufacturing industry. About 68% of workers agreed with this statement. The mean score of blue-collar employees' feedback on OC items suggested that making workers aware of safety performance targets and goals was the greatest way to demonstrate an open communication policy. In contrast, giving employees a hazard reporting system to report dangers is not appropriate in this industry (3.59 1.12). Thus, rather than management focusing on hazard reporting systems, this group values open communication through discussing performance aims and safety goals.

52% of EIP1 respondents believed that top management (those in charge of running an organization's daily operations) considered employee input before making safety decisions. 63% of safety committees with management and employee representatives (EIP2) support this claim, a moderately high mean (3.61 1.07). Management promotes employee involvement in safety-related problems (EIP3) with a high mean score of 3.49 1.07 (59%). With a mean score of 3.59 1.05, 63% of participants believe that management discusses workplace health and safety (EIP4) with employees. About 67% of participants are in support of having the opportunity of being allowed to take part in work safety issues (EIP5) at their workplace (3.69 1.07). With respect to the ranking position of EIP items, the best-appreciated measure of EIP is when employees are sincerely allowed to participate in safety matters (EIP5), with a mean score of 3.69 and 1.07. However, the fact that management always welcomes opinions from employees before making final decisions on safety-related matters (EIP1) makes little/no difference and is seen as the least measure of EIP practice in the study's context (3.34 1.12). Although all these factors can stimulate employee safety participation, the flexibility offered to employees to honestly participate in safety matters is best supported as a vital avenue that encourages employee safety performance in this industry. The following table provides safety performance perceptions.

Table 4: Perceptions of participants of HRM practices on safety performance behaviour

Statements	Strongly Disagree (SD)	Disagree (D)	Neutral (N)	Agree (A)	Strongly Agree (SA)	Mean	Std. Deviation	Ranking



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ST1 → My company provides comprehensive training to employees around workplace health and safety issues.	4.1%	11.2%	14.0%	46.2%	24.5%	3.76	1.069	2
ST2 →New recruits are trained adequately to learn safety rules and procedures.	4.5%	12.6%	13.1%	47.6%	22.2%	3.70	1.085	4
ST3→ Safety issues are accorded high priority in training programmes.	4.5%	8.9%	15.9%	47.0%	23.7%	3.76	1.051	1
ST4 →I am adequately trained to respond to emergency situations in my workplace.	3.3%	15.9%	13.4%	45.6%	21.8%	3.67	1.084	5
ST5 → Management encourages workers to attend safety training programmes.	5.6%	13.1%	12.9%	41.7%	26.7%	3.71	1.158	3
ST6 →Safety training that I have received is adequate to enable me to assess hazards in the workplace.	9.2%	12.3%	11.9%	40.9%	25.7%	3.62	1.246	6
Total						3.703	.90897	
SI1 → Employees' health and safety suggestions are seriously taken into consideration at my company.	6.7%	10.8%	17.5%	45.2%	19.8%	3.61	1.120	1
SI2→Employees at my company are rewarded for reporting safety hazards (thanked, receive cash or other rewards, recognition in newsletter, and so on).	10.5%	20.4%	24.6%	30.7%	13.7%	3.17	1.205	9
SI3 →My colleagues often show me their appreciation whenever I perform safe work practices.	6.4%	17.0%	27.3%	38.8%	10.5%	3.30	1.070	5
SI4 → Supervisors in my work unit tangibly recognize employees' safety efforts in different ways (for example, provide meal tickets, gift packs, and so on).	11.4%	18.4%	23.9%	32.9%	13.4%	3.19	1.214	7
SI5→ Employees in my work unit receive written recognition for safe practices from their supervisors.	11.2%	18.7%	24.8%	30.1%	15.1%	3.19	1.228	8
SI6→ Employees in my workplace are regularly rewarded for their efforts to create a safe workplace.	7.8%	20.9%	22.8%	34.5%	14.0%	3.26	1.167	6
SI7→ Top management in my workplace usually celebrates safe work performances.	6.9%	21.4%	20.3%	36.2%	15.3%	3.32	1.168	4
SI8→Top management praises employees for working safely.	6.1%	14.7%	21.7%	43.1%	14.5%	3.45	1.095	2



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SI9 → Safety week celebrations and other safety promotional activities that management arranges are effective in creating safety awareness among workers.	10.0%	16.7%	16.7%	36.8%	19.8%	3.40	1.253	3
Total						3.284	0.9247	
OC1→ We have a hazard reporting system at my company, where employees can give or be given information about hazards.	5.6%	14.0%	16.2%	44.1%	20.0%	3.59	1.123	5
OC2→ Management operates an open-door policy on safety issues, so employees are free to talk about safety issues with them.	4.4%	10.5%	18.4%	45.2%	21.5%	3.69	1.057	3
OC3 → There is sufficient opportunity to discuss and deal with safety issues in meetings.	4.7%	10.1%	18.3%	45.2%	21.7%	3.69	1.064	4
OC4 →Workers are made aware of safety performance targets and goals at my organisation.	4.8%	8.1%	18.6%	49.3%	19.2%	3.70	1.024	1
OC5→ Supervisors at my workplace provide regular feedback (advice) to employees about their unsafe behaviour.	5.6%	8.7%	17.5%	46.5%	21.7%	3.70	1.076	2
Total						3.674	0.8893	
EIP1→ Management always welcomes opinions from employees before making final decisions on safety-related matters.	6.2	19.0	22.5	39.2	13.1	3.34	1.115	5
EIP2→My company has safety committees, consisting of representatives from management and employees.	4.2	13.4	19.5	43.4	19.5	3.61	1.073	2
EIP3→ Management promotes employee involvement in safety-related matters.	4.5	16.1	20.9	43.1	15.4	3.49	1.074	4
EIP4→Management consults with employees regularly about workplace health and safety issues.	3.3	15.6	18.4	44.8	17.9	3.59	1.054	3
EIP5→ Employees at my workplace are sincerely allowed to participate in safety matters.	3.7	12.6	17.0	43.8	22.8	3.69	1.071	1
Total						3.542	.9073	

Source: Author's fieldwork



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4.3 The Nigerian blue collars' views on individual safety behaviours and safety performance

Participants' safety behaviours were assessed by compliance and involvement (Table 5). SCB data indicates that many Nigerian blue-collar workers adhere to safety regulations. The SCB1 reported 76% of responders use all safety equipment (3.86 1.09). Participants agree with SCB 2 safe working practices 83% (4.02 0.91). Following safety standards and procedures when performing work-related activities (SCB3) is supported by 82% of respondents with a very high mean score (4.05 0.87). Many blue-collar workers take safety seriously (3.97 0.94), as 78% of participants feel their jobs are safe (SCB4). The practicality of following all safety regulations when doing work (SCB5) demonstrated their differing viewpoints. The record revealed that 42% disagreed, 44% agreed, and 15% were indifferent, with a low mean score of 2.95 1.36 (M = 3) but an average line. Approximately as many workers disagreed that following all safety rules while working is not always possible. The best predictor of safety compliance for blue-collar workers is following safety rules and procedures (SCB3) (4.05 0.87).

Table 5: Respondents' perception of individual safety performance behaviours

Statements on safety performance behaviour (compliance & participation)	Strongly Disagree (SD)	Disagree (D)	Neutral (N)	Agree (A)	Strongly Agree (SA)	Mean	Std. Deviation	Ranking
SCB1 → I use all the necessary safety equipment when carrying out my job	5.9%	7.2%	10.5%	48.0%	28.4%	3.86	1.091	4
SCB2 → I carry out my work in a safe manner.	2.0%	6.9%	7.8%	54.1%	29.2%	4.02	0.910	2
SCB3→ I follow correct safety rules and procedures while performing my job duties.	2.2%	3.6%	11.9%	52.1%	30.3%	4.05	0.872	1
SCB4→ I ensure the highest levels of safety when I carry out my job.	2.2%	6.6%	13.3%	48.2%	29.8%	3.97	0.943	3
SCB5→ It is not always practical to follow all safety rules while doing a job.	19.8%	21.8%	14.8%	30.1%	13.4%	2.95	1.360	5
Total						3.972	0.8234	
SPB1→ I help my co-workers when they work under risky or hazardous conditions.	5.5%	6.6%	13.1%	51.6%	23.2%	3.81	1.040	4



SPB2→I always inform management of any safety related matters that I encounter at my company.	5.0%	8.3%	15.3%	47.6%	23.9%	3.77	1.059	5
SPB3→I put in extra effort to improve safety at my workplace.	3.4%	4.8%	14.8%	50.9%	26.1%	3.91	.951	2
SP4→I voluntarily carry out tasks or activities that help to improve workplace safety.	4.1%	5.9%	12.5%	51.6%	25.9%	3.89	.988	3
SPB5→I encourage my co-workers to work safely.	4.8%	3.3%	10.0%	44.5%	37.4%	4.06	1.019	1
Total						3.889	0.8104	

Source: Author's fieldwork

They argued that asking them to follow safety requirements every time they worked was impracticable (SCB5) and may not fully represent Nigerian manufacturing workers' safety compliance. Regarding safety participation, about 75% of participants agreed to help coworkers in unsafe or hazardous settings (SPB1), with a significantly high mean score (3.81 1.04). About 72% agreed to always report workplace safety issues to management (SPB2) with a moderately high mean (3.77 1.06). A significant number of workers (77%) agreed to put in extra effort to improve safety in the workplace (SPB3), which reflects the high mean value (3.91 0.95). As seen by the high mean value (3.91 0.95), 77% of workers agreed to work harder to improve workplace safety (SPB3). However, 78% of workers voluntarily conduct tasks or activities that increase workplace safety (SPB4), resulting in a moderately high mean score (3.89 0.99). 82 percent additionally thought they encouraged coworkers to work safely (SPB5), resulting in a very high mean score (4.06 1.02). According to the item (SPB5), encouraging colleagues to work safely is the greatest approach to demonstrate their participation in the safety mission at work (4.06 1.02). Concerning the rating of the items measuring SPB, encouraging colleagues to work safely is the greatest approach to demonstrate their participation in the safety mission at work (4.06 1.02). In contrast, always alerting management of firm safety issues (SPB2) may not inform their safety participation and may not appeal to their safety interests.

5. DISCUSSION



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The goal of this study was to assess how blue-collar workers in the Nigerian manufacturing industry perceive basic HR practises and how these practises relate to their safety performance behaviour. Accordingly, the demographic details of the participants, (Table 1, 2,3) suggests that the manufacturing blue-collar workers are mostly male seeing that a larger percentage of the survey participants (641) consisted of 432 male employees (67%) and 209 (33%) female employees. The male-dominated nature of blue-collar employment is affirmed in other studies. It was explained that such predominance is rooted in the perception that traditionally, this type of work is occupied by males. The data also shows that these blue-collar workers were majorly among the millennial generation. The majority group falls in the aged bracket of 26 and 35 years with 273 of the respondents (approximately 43%) in the age brackets of 18 to 25 years, which brings the total to 350 (54.6%) followed by the 36-45 age group with 221 people (about 35%). Only 59 of them were in the 46 - 55 years category (approx. 9%), while about 2% (11) of the respondents were over 56 years (1.7%). This distribution suggests that Nigeria's manufacturing sectors prefer to hire younger people. This preference may be explained by the fact that people in this category are endowed with natural vigour and energy, whilst also being physically active. This is also an indication that a large percentage of the hired workers are agile and might be capable of the associated demands with manufacturing processes, and as such satisfies the need of this industry. When compared to older generations, such traits increase their chances of being regarded as the qualified talent that the industry needs to survive. This is congruent with previous findings, explaining that recruiting such employee categories is typically motivated by an organisation's profit-driven mission. In addition, young people are preferred mostly owing to their lower cost and flexibility in work schedules.

According to the data, many in this younger cohort may have worked earlier. This claim is based on age information because 327 (51%), contract (198 or 30.9%), regular casuals (63 or 9.8%), and temporary casuals (53 or 8.3%) at the time of the current research have permanent jobs. The stated early introduction into the Nigerian labour force may justify these workers' age claims, even though participants' scheming tendency in answering questionnaires warns elaborate debate on the matter. Respondents' education levels show that Nigeria's manufacturing industry has workers who are capable of following rules. 357 (56%), 154 (24%), 64 (10%), 62 (10%), and 62 (10%) had higher education while 4 participants (0.6%) are without formal education. The statistics imply that most blue-collar workers can perceive and grasp workplace dangers and risks because they can read and understand written rules, principles, and policies. Blue-collar workers were also more likely to know and offer accurate information. This supports Afube, Nwaogazie, & Ugbebor's 2019 findings.

Additionally, they may have a better understanding of their organisations' policies and objective and goals. This is because though some of them may be newly employed (with the lowest duration of respondents' active work service being 1 month with roughly 6 respondents in service less than 6 months), some have 25 years (300 months) of service. The mean value of 45.29 (SD = 54.14) indicates that many respondents have worked in their workplaces for at least 45 months (roughly 4 years). According to this data, Nigerian industrial blue-collar workers are more likely to understand their companies' policies and mission. In addition, the respondents' years of service and relatively stable job status suggest they might be more relaxed in demonstrating appropriate work behaviours.



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The data, however, indicated that the Nigerian manufacturing industry has not achieved zero-incident expectations despite the caliber of workers in the industry and claims from many workers. This is in line with previous findings (Otitolaiye, Abd Aziz, Munauwar, & Omer, 2021; Afube, Nwaogazie, & Ugbebor, 2019); Adeyemi *et al.*, 2016). However, the information from most of this worker group claimed that accidents and injuries at work in Nigerian factories are rare as suggested in the mean value (0.36 ■ 0.86). 503 of the respondents (about 79%) indicated that they have never experienced any safety-related incident while doing their jobs. 459 participants (approximately 72%) are certain they have never experienced any major injuries in the line of duty. Some of them had experienced work-related accidents up to seven times. 127 of the respondents (about 20%) have been involved in work accidents between 1 and 3 times, and 11 of them (about 2%) have been victims about 4 to 7 times. 167 persons (26.1%) have been exposed to fatal injuries that resulted in more than 3 days of work absence and such situations have been experienced about 1-3 times. Most claims that several factory workers are performing their duties without sustaining major injuries are questioned based on the record showing that fatal injuries (with a recorded mean value of 0.55 ■ 1.034), still happen at various workplaces with some being fatally injured about seven times. Furthermore, while there is convincing evidence to conclude that several of the respondents could have benefited from the accumulated experiences and knowledge from their long service years, accidents and fatal injuries remained a concern. The few blue-collar workers who claimed to have been hurt on the job or experienced accidents during work, support the need for safety attention since one accident is one too many thus confirming the imperativeness of this present study.

With regards to descriptive analysis of employees' perception, the statistics showed that Nigerian blue-collar workers have a positive perception of the availability and adequacy of the basic human resource management practices investigated. They seemed to be in unison in their perceptions that these practices have sufficiently catered to their safety needs. However, this information is in contrast with available evidence both in theory and practice (Otitolaiye, Abd Aziz, Munauwar, & Omer, 2021; Afube, Nwaogazie, & Ugbebor, 2019) and suggests the likelihood of either falsehood or disconnection from reality. Past studies (Wang *et al.*, 2020; Kim *et al.*, 2019; Subramaniam *et al.*, 2016; Darwish *et al.*, 2016) have shown that aside from the provision of HR practices, though important, the extent to which it satisfies needs weigh in the performance behaviour of employees. Similarly, the accrued benefit of these HR practices is justified in appropriate safety practices of which the accounts of those employees indicating experiencing fatal injuries several times are subject to questioning. The present finding contrasts previous research where the inadequacy of safety affairs in Nigeria factories had been reported (Aluko *et al.*, 2016; Abubakar, 2015; Umeokafor *et al.*, 2014; Agbola, 2012).

Many of the workers maintained that safety training provided at the workplace is comprehensive and adequate in guiding them on how to identify as well as solve workplace health and safety issues, yet avoidable safety incidents persisted. According to their declaration, safety issues are accorded high priority in the organised safety training programmes (3.76 ■ 1.05). The broad agreement on the adequacy of safety training content for emergency response preparedness reflects the positivity of blue collar



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workers on the content of the received safety training, which includes guidance and skills on how to respond to safety emergency situations at work (3.67■1.08). Amongst other commendations, they consented that blue-collar workers are motivated to attend organised safety training at the workplace where the experienced training has increased their potential to assess workplace hazards and address work risks. All these performance metrics are well established in extant studies with evidence regardless of setting or location. Hence, the present findings disagree with the associated benefit of such management practice. This present finding, however, supports the earlier studies (Oitolaiye *et al.*, 2021; Adeyemi *et al.*, 2016; Abubakar, 2015).

Meanwhile, as shown by the ratings of the different statements established through mean assessments, the best method for safety training to appeal to and have a significant impact on blue-collar employees is for training programmes to give safety issues a high priority. On the contrary, training for the identification of hazards seems to have little effect on blue-collar safety behaviours in Nigeria's manufacturing context. This finding shows that the content and quality of safety training need to be reassessed. The need to understand what employees perceive of the various HR practices offered at work becomes important on the grounds of such discovery in this study. The perception of employees is noted to have a strong influence on the effectiveness of programs and policies that are implemented within the organization (Hofhuis, van der Zee, & Otten, 2015). It has been noted that there are many instances where, due to differential concerns among the actors in the workplace exchanges, the designed practices engaged to motivate employees may not really be what is expected (Morrell, 2011). As such, it is important that employees give correct assessments of these practices so that further actions to improve their effectiveness could be put in place

The data concerning safety incentives showed that the responses were polarised with a notable level of divergence in the expressed opinions on some of its variable items. For instance, the act of supervisors tangibly recognising employees' safety efforts in different ways (providing meal tickets, gift packs, and so on) seem not to be a common practice. Despite the ascribed high response rate (3.19■1.21), rewarding safety efforts by different means has not cut across the manufacturing workplaces in Nigeria. This might be a likely reason for the lack of OSH improvement in this sector as incentive practices have a natural capacity to stimulate employees' interest in organisational safety activities and inspire safety behaviours (Kim *et al.*, 2019). Likewise, the possibility of employees receiving written recognition for safe practises from supervisors in their work unit showed that while there might be supervisors in Nigeria's manufacturing industry who practice this managerial act towards workers that perform safe work practices in their units (3.19■1.23), many other employees had not experienced this at work. This record suggests the likelihood that positive experiences of safety participation might be higher with those having a positive perception of being motivated for appropriate safe work practises through the appreciation shown when they operate safely than those who did not receive such treatment. This equally implies that the manifested safety appreciation activities of co-workers have a positive effect on employees' perceptions concerning the existence of safety incentives at work. In addition to the recognised incentive practices in this study, the data support the management activities of celebrating safe work performances, and praising



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employees for working safely is in effect and resulted in their improved work safety performances. The deliveries of all these items as claimed in this study is, however, at variance with the standard features of safety incentives seeing that OSH remains poor. According to research, a well-designed safety incentive programme results in reduce unsafe acts, injuries, health issues, and accidents (Vredenburg, 2002). This is because it stimulates employees' interest in safety activities and inspires appropriate safety behaviours. The ineffectiveness of the acclaimed incentives, therefore, suggests possible loopholes, either in the implementation or, perhaps, its content.

The rating of the perceptions regarding incentive practices (from ranking values) showed that the best way to evaluate the efficacy of these practices is when it makes adequate provision for taking employees' health and safety suggestions into serious consideration as noted in variable item S11 (3.61 ■ 1.20). On the contrary, rewarding employees for reporting safety hazards by whatever means (S12) is not so appreciated (3.17 ■ 1.20). These results indicate that the most acceptable measure of safety incentive among Nigeria's blue-collar workers is when employees' suggestions are appreciated (highest rank) and not necessarily that they are rewarded for reporting safety hazards possibly by word of mouth, cash, or other rewards (such as recognition in a newsletter, etc.). Although this is also acknowledged as being useful, it is considered the least capable incentive for initiating or promoting appropriate safety performance. This study's finding suggests the need to re-examine the overall incentive packages in this industry, which according to findings might be at variance with employees' expectations. This might be a possible setback to the supposed effectiveness of this practice among Nigerian blue-collar workers. According to research, if the incentives do not appeal to employees, they may be less enthusiastic about being committed to safety-related tasks (Kim *et al.*, 2019). It was found that safety incentives may prevent workers from reporting injuries if these are not well-defined.

Furthermore, the perceptions of open communication practices in driving safe work practices in manufacturing organisations demonstrated the presence of the requisite practices in many manufacturing industries. Amongst other findings, the data show that many companies have a hazard reporting system that allows their employees to provide information about workplace hazards. The employees also receive information in this respect and are free to give feedback. This suggests that employees are given the freedom to voice their opinions about safety issues at their workplaces through authorised mechanisms. There is also a high level of consent on management use of an open-door policy for safety issues where employees are allowed to freely speak about their safety concerns indicating that there is sufficient opportunity to discuss and deal with safety issues in their workplace meetings. While workers are being informed of safety performance targets and goals, other supported open communication content. In accordance with extant literature, places experiencing such provisions have commendable safety outcomes. For example, it is argued that when employees feel accepted and respected in their roles and can express viewpoints without being worried about negative consequences for self-worth, social standing, or career, they are more likely to reciprocate appropriately.



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Nonetheless, the ranking of the various feedback on OC items showed that the Nigerian blue-collar employees' best practice for proving there is an open communication policy is when *workers are made aware of safety performance targets and goals, which recorded* a mean score of 3.70 (SD=1.02). In contrast, *providing a hazard reporting system at the company, where employees can give or be given information about hazards is not a true measure* in this industry (3.59 (SD=1.12)). Hence, this suggests that engaging employees in a discussion about the expected performance targets and safety goals is a recognized platform for showing open communication at work *for this group of participants*, rather than management focusing on creating hazard reporting mechanisms (OC1). These findings support earlier reports (Omunakwe, Nwinyokpugi, & Adiele, 2018).

Regarding employee involvement and participation practice (EIP), the data established that this is experienced in terms of management welcoming opinions from employees before making final decisions on safety-related matters. Many of them perceived that employees are sincerely allowed to participate in safety matters in the workplace and so on. The account literally suggests that many of these factory workers in Nigeria's manufacturing industry have experienced this kind of managerial goodwill, which contrast past findings (Adeyemi *et al.*, 2016; Akinkunmi, 2016). Ordinarily, evidence suggests that appropriate implementation of this act indicates firms' supportive policies to employees, which is significant for their performance at work (Yorio & Watcher, 2014) and incentivizes employees to meaningfully contribute to organisational goals (Jiang *et al.*, 2012; Soomro *et al.*, 2011).

A point of note in this present study's findings is that though many of them seemed to be unanimous on almost all the EIP variable items, the freedom given to employees to sincerely participate in safety matters is best supported as a critical path that motivates employee safety performance in this industry. In contrast, the fact that management always welcomes opinions from employees before making final decisions on safety-related matters carries little or no weight in the study's context. This is in conformity with the scholastic argument (Umeokafor *et al.*, 2014). It also supports the finding that sincere employee involvement or participation in decision-making in Nigeria's manufacturing sector is largely missing (Akinkunmi, 2016) and remains low. In places where these do exist, they either remain inactive for years owing to the weak relationship between employers and employees or owing to defective communication patterns or mediums. This resonates with previous research arguing that the genuine freedom given to employees is a vital factor for engendering safety performance behaviours (Subramaniam *et al.*, 2016).

Having established the perceptions of employees on the various HRM practices, the investigation into their individual safety performance behaviour has notable findings as well. Regarding SCB, the data showed that many Nigerian blue-collar workers (about 76%) are following standard principles, and all the necessary safety equipment is used when carrying out their tasks (SCB1), showing a moderately high mean score (3.86 (SD=1.09)). Many workers (about 83%) of participants appropriately engage in safe working practices (4.02 (SD=0.91)). Also, correct safety rules and procedures are followed while performing work-related duties with utmost carefulness. In addition, fellow workers' compliance is ensured amongst other acts of ensuring safety compliance. Such a level of demonstrated adherence to standard practices is found



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to significantly influence workplace safety. This current feedback on compliance, however, contrasts existing reports (Otitolaiye *et al.*, 2021).

Added to the findings, the practicality of following all safety rules each time a task is performed (SCB5) indicated that their perceptions on this aspect are slightly divergent. The record showed that about 42% disagreed while about 44% agreed, and about 15% of the respondents maintained a neutral position with the responses supported by a low mean score of (2.95 ■ 1.36), though this value nearly falls on an average line (M = approximately 3). The result portrays that the proportion of workers who agreed that following all safety rules while doing a job is not always practical, was almost equal to those who disagreed with the statement. This finding appears to contrast the initially acclaimed practice of safety with utmost carefulness, thus, collaborating with other previous studies (Otitolaiye *et al.*, 2021). According to extant studies, employees' disregard for best practices has made safety performance extremely difficult (Abubakar, 2015; Umeokafor *et al.*, 2014). This is exacerbated by the belief that zero-safety tolerance is unattainable among other factors (Adeyemi *et al.*, 2016). In terms of the ranking of variable items, the data shows that Nigerian manufacturing blue-collar workers perceive the act of following correct safety rules and procedures while performing job duties (SCB3) as the best indicator of their safety compliance behaviour (4.05 ■ 0.87). However, they believed that asking them to follow safety rules each time a job is being done is not feasible (SCB5) and may not suffice as a correct representation of employees' safety compliance in the study's context. This situation is supported by past findings (Adeyemi *et al.*, 2016; Abubakar, 2015).

Regarding safety participation, most of the participants agreed to participate in workplace safety by rendering help to co-workers when they work under risky or hazardous conditions (SPB1). They always inform management about any experienced safety-related matters encountered at work while extra effort is exercised to improve safety in the workplace. Similarly, many workers voluntarily perform tasks or activities that help to improve workplace safety and particularly encourage fellow workers to work safely. This perceived level of safety participation amongst the factory workers is admirable and should ordinarily reduce injuries, accidents, and other consequences of safety violations as against the recurring safety incidents evident in the manufacturing industry. This present finding does not agree with existing reports (Fernández-Muñiz *et al.*, 2014). The active participation of workers has been noted to affect OSH improvement at work, significantly influencing workers' compliance with safety standards and procedures (Fernández-Muñiz *et al.*, 2014), thus considerably reducing work-related injuries and accidents (Christian *et al.*, 2009). Concerning the rating of the items measuring SPB, the data suggest the act of encouraging fellows to work safely as the best way of demonstrating their participation in the safety mission at work (4.06 ■ 1.02). Conversely, the practice of always informing management of any safety-related matters encountered at the company does not inform their safety participation and may not appeal to their safety interests.

Notably, these results demonstrate how Nigerian manufacturing blue-collar workers are likely to perceive the investigated HR practices, demonstrating that their consciousness of both the characteristics



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and the goals of these HR practices is vague. Additionally, it has been shown that the level of satisfaction with the practices is either low or poor or differs from what they expected. Such variances may explain why these HR practices do not provide the intended results, especially when many of them have claimed to exhibit acceptable safety behaviours in terms of compliance and participation. Studies have established that appropriate management practices are sine qua non to improve safety performance behaviours (Hadjimanolis *et al.*, 2015; Vinodkumar & Bhasi, 2010). In addition, A significant positive correlation among all these HR practices has been established where a positive perception of one can influence the efficacy of the other. For instance, it was found that the more employees are exposed to safety training programmes and related opportunities, the more their positive perceptions of the company's safety investments increase (Hadjimanolis *et al.*, 2015). Also, a strong positive relationship is established between safety incentives and employee involvement practices (Vredenburg, 2002). Likewise, it was found that safety incentives may hinder open communication and prevent employees from reporting injuries if these are not appropriately defined (Kim *et al.*, 2019) amongst other issues. This makes the matter of obtaining the perceptions of employees who are the major recipients of the various HR practices imperative as they can point out areas that need to be fixed for improved performance. This suggests the criticality of allowing employees to be active partners in running safety matters at work, otherwise the needed information to address possible loopholes in the existing measures may be overlooked, suppressed, or result in unresponsive attitudes of employees to organisational missions, even in safety.

The literature argues that employees are more likely to embrace and promote safety practices when they are allowed to be part of those overseeing safe work procedures, particularly when they are critical constituents in decision-making processes. This recognition of their value to organisational success not only excites them but also fuels their determination to achieve important organisational goals (Yorio & Watcher, 2014). The genuine practice of engaging employees' involvement and participation encourages employee ownership of the safety programmes, which in turn tends to make them more committed in their coordinated efforts to lower the rate of workplace accidents and injuries. According to research, it creates a climate where workers can apply critical thinking to issue resolution. Added to this, the need for employees' involvement also aligns with the assumptions of SET and AMO, which hold that an individual's ability, motivation, and availability of opportunities to participate, as well as the perception that such performance is valued, lead to better employee performance. The above findings thus point to the necessity of reviewing the conventional safety approaches to include correct employee participation for better safety interventions on OSH in the Nigerian manufacturing sector, thus achieving the set goal of this present study.

5.1 Practical implications

The current findings have several implications for further study and appropriate scientific and strategic intervention to improve occupational safety and health, improving the existing HR practices and advancing it. These results will also lead to improved work relationships due to the enhancement of social exchanges at work as the key actors in employment-related matters see the need to work together and in partnership with the employees. The results would also positively impact manufacturing blue-collar



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workers' safety performances as individuals see the need to take ownership and be motivated to take personal responsibility for safety.

6. Conclusion

Appropriate safety interventions are vital to promote satisfactory safety actions. The ineffectiveness of these treatments in Nigeria suggests that even if records demonstrate that safety precautions are in place in the country and for industrial usage, the ineffectiveness of these in Nigerian workplaces suggests the need to re-evaluate choices and adopt a proactive strategy. Reports have demonstrated that effective personnel management is essential towards achieving a noteworthy OSH status, but the benefit is not without restrictions. Likewise, it has been established in industrialised nations that allow employees to assume personal responsibility for their safety is effective when done properly, regardless of the environment or work setting. The current findings hint at the viability of this accomplishment because employee perspectives have indicated that their participation could reveal likely gaps in the safety measures already in place. This, therefore, shows that their genuine participation cannot be disregarded. Otherwise, regardless of how much money is spent on launching various interventions, the attainment of the goal may remain a myth.

7. Recommendation

Understanding employees' perceptions about how they are managed is critical because it has been demonstrated to be a major strategy to enhance workplace culture and performance. Hence the present study suggests that the key safety stakeholder (employers, government, and necessary authorities) must be prepared to patiently seek ways to encourage employees to communicate their candid opinions without fear of repercussions.

There is also the need to reconsider existing management practices to include genuine involvement of employees in decision-making processes. This should be done without discussion because it has shown to boost commitment, reduce absenteeism, and lower turnover, all of which contribute to the company in various ways. In addition, this study recommends a need to build trust among employees so that they are prepared to open up about potential flaws in existing practices and are free to suggest strategies to improve or adopt alternative solutions.



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