

Effect of Safety-Oriented HR and Climate Practices and Project Leadership on Perceived Accident Prevention: Testing Vision 2030 Institutional Pressure and Alignment as a Moderator

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Abstract:

Introduction: This research explored the influence of Safety-Oriented HR and Climate Practices and Project Leadership on the perceived accident prevention in large-scale infrastructure projects in Saudi Arabia, and tested the moderating effect of Vision 2030 Institutional Pressure and Alignment. This research brought about two contributions. First, it combined Safety-Oriented HR and Climate Practices into a single construct and compared its impact to that of project leadership. Second, it indicated that institutional forces preferentially reinforce leadership-based safety mechanisms rather than HR-based systems when working on megaprojects.

Methodology: Quantitative research design was used and it surveyed 400 construction professionals. Partial Least Squares Structural Equation Modelling (PLS-SEM) was used to analyse them.

Results & Discussion: The findings indicated that the positive influence of project leadership on perceived accident prevention was significant, compared to positive although insignificant impact of Safety-Oriented HR and Climate Practices. These two were: Vision 2030 Institutional Pressure and Alignment x Project Leadership, and Vision 2030 Institutional Pressure and Alignment x Safety-Oriented HR and Climate Practices. The findings suggested that contact with the project leadership was at a significant level and contact with the HR practices was not.

Conclusion: The study revealed that the pressures of an institution favor the implementation of safety using leadership and that an HR-based safety system is not directly converted into the prevention of accidents in mega project environments.

Keywords: Safety climate, HR practices, project leadership, construction safety, perceived accident prevention, vision 2030 institutional pressure and alignment, and Saudi Arabia.

1. INTRODUCTION

The construction industry is among the most hazardous in the world, and occupational risks and accident rates have not decreased despite recent safety improvements. The cost of workplace injuries and accidents is still too high, with almost 3 million fatalities and approximately 400 million non-fatal injuries reported each year (Gaudiaut, 2026). The construction

industry in Saudi Arabia is estimated to incur an estimated cost of accidents at \$91,940 per accident, which is part of an estimated economic cost of \$261.11 million annually that includes hospital bills, compensation, and loss of productivity (Umar & Umeokafor, 2021). This has been a major issue, especially in large-scale infrastructure programs where complex risk environments, diverse workforces, and dynamic activities increase the vulnerability of safety.

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Safety climate is a core driver of safety outcomes, as the literature highlights that management commitment, training, communication, and accountability are dimensions of safety climate associated with safer workplace behaviours and lower accident rates in the construction sector (Umar, 2020). Theoretically, Safety Climate Theory describes how employees share a common understanding of organisational safety policies, procedures, and priorities, and how these affect workplace safety culture and behavioural norms (Kines *et al.*, 2011; Sawhney *et al.*, 2011). It has been empirically demonstrated that positive perceptions of safety climate are associated with enhanced safety performance among construction workers, including migrant labour populations where vulnerability may be particularly high (Zafar *et al.*, 2024).

At the same time, leadership styles, particularly transformational leadership, are significant factors that influence how safety norms are communicated, exemplified, and embedded at construction sites. Transformational Leadership Theory refers to leadership practices that support and encourage employees through vision, intellectual stimulation, and personal consideration to achieve organisational objectives (Bass & Avolio, 1993; Deng *et al.*, 2023). Safety-specific transformational leadership was found in the literature to be especially useful for enhancing safety outcomes through employee empowerment, the development of a shared vision of safety, and increased motivation to comply (Senthamizh & Anandh, 2024). Another recent study also supports the idea that transformational leadership improves safety behaviour through knowledge sharing and psychological safety (Ali *et al.*, 2025). Therefore, this study argues that institutional pressures selectively reinforce leadership-driven safety mechanisms rather than HR-based systems.

Although there are evident theoretical connections between safety climate, leadership, and perceived accident prevention, gaps exist in the literature regarding the operationalisation and research of Safety-Oriented HR and Climate Practices as an integrated construct of safety climate perceptions and HR practices (training, incentives, and performance management) in infrastructure environments. The majority of research continues to consider safety climate and HR practices as independent antecedents without considering their combined effect on safety outcomes (Manadero *et al.*, 2024; Ashamu, 2026). In addition, although the role of leadership in safety performance is well established, there is little evidence regarding contextual moderators that may reinforce or undermine these relations, particularly within the framework of the national development program.

Also, the national institutions and policies have an important influence on organisational safety practices, as they provide regulatory, normative and cultural pressure on firms and industries. Based on the Institutional Theory, the outside forces are represented by the programs and make companies adjust their practices to gain legitimacy, fulfill the requirements, or even align with the overall targets of the society (Kauppi, 2022). One such program is the Vision 2030 in Saudi Arabia where national transformation agendas are characterized with sound occupational safety and health regulations. Saudi Arabia has reported a reduction of 75 and 30 percent in the number of fatalities and workplace injuries,

respectively, due to stringent regulatory measures, digital safety, and active safety policies (Abueish, 2025; Arab News, 2024). National Institute for Occupational Safety and Health and compliance incentive programs are examples of how institutional forces can restructure the organisational safety priorities (Government of Saudi Arabia, 2021). Despite such achievements, the high-profile incidents still highlight the issue of safety in mega projects and reinforce the argument that the additional efforts are required to look into the factors underlying the organisations in the context of accident prevention (Pattison, 2025).

Nonetheless, the available empirical studies did not investigate the interplay of these macro-level programs with organisational safety drivers, including combined Safety-Oriented HR and Climate Practices and project leadership, to determine their effects on perceived accident prevention. The aim of the present research, therefore, was to investigate the interaction between Safety-Oriented HR and Climate Practices and Project Leadership as predictors of perceived accident prevention and Vision 2030 Institutional Pressure and Alignment as a moderator. The study made a theoretical contribution by combining Safety Climate Theory, Transformational Leadership Theory, and Institutional Theory to examine how internal factors within an organisation respond to external institutional programs that influence safety. The current study also argues that institutional pressures within the Vision 2030 framework do not uniformly strengthen all internal safety procedures; rather, they selectively bolster leadership-oriented safety procedures, whereas HR-based safety systems have no direct influence on perceived accident prevention in megaproject settings.

2. LITERATURE REVIEW

2.1. Key Constructs

The term safety climate was coined by (Dov Zohar, 1980) as workers' joint perceptions about safety priorities, policies, procedures, and practices in the workplace. In construction environments, safety climate is often an indicator of management's commitment to safety, communication of safety policies, worker engagement, safety training, and enforcement of safety practices (Lestari *et al.*, 2020). Some common HR practices in the construction industry include safety training, competency development, performance assessment, hiring qualified employees, and other safety-based incentives that strengthen safe work behaviours. Empirical studies indicate that HR safety practices can be well-designed to minimise accidents and enhance safety performance by improving employees' knowledge and adherence to safety practices (CIPM, 2020). To elaborate, in construction organisations, organisational practices that strengthen safety priorities and employee behaviour operationalise safety climate. Some of these practices are safety training programs, precise safety policies, communication systems, safety monitoring systems, and employee involvement in safety decision-making. The practices indicate management's commitment to safety and influence employees to share the same expectations for safe work. Management's commitment is always an influence on its safety practices; therefore, there is a higher tendency for workers to adhere to safety procedures, report hazards, and engage in proactive safety behaviour.

Based on this, safety climate and HR practices are operationalised in this research as a single construct, Safety-Oriented HR and Climate Practices. This integration is based on the perception that safety systems, which are HR-driven (training, communication, and performance management), are the structural tools that create shared safety perceptions (safety climate) rather than defining safety climate and HR practices as two distinct constructs, such as a practice is indicative of their interdependence, with formal organisational practices constituting the overall perception of employees regarding safety priorities. It can be used particularly in construction environments where formal systems and perceived safety expectations are both strongly intertwined to shape behaviour. Teams, coordinating with stakeholders, and accomplishing project goals in complex project settings (Whyte *et al.*, 2022). In construction teams, coordinating with stakeholders and accomplishing project goals in complex project settings (Whyte *et al.*, 2022). Ensuring workers carry out their activities safely and effectively. Project leadership in the present study refers to leaders' capacity to convey safety priorities, direct safety compliance, and influence workers' behaviour regarding accident prevention. On the other hand, perceived accident prevention is employees' evaluation of the effectiveness of organisational strategies, policies, and behavioural practices in minimising workplace hazards, injuries, and incidents before they occur. Perceived accident prevention in this study is a measure of the efficacy of safety activities and management in reducing on-site accidents in infrastructure developments.

Finally, Saudi Vision 2030 (2024) eases mega infrastructure projects, such as NEOM, The Red Sea Project, Qiddiya Entertainment City, King Salman Park, and Diriyah Gate, which, combined, should modernise infrastructure and achieve sustainable economic growth. As more infrastructure is developed as part of the Vision 2030, organisations conducting such activities need to balance their operational practice with national safety standards as well as institutional expectations and guidelines (Government of Saudi Arabia, 2021). In the present research, the Vision 2030 Institutional Pressure and Alignment is modelled as a macro-level institutional environment that defines organisational safety priorities and moderates the relationship between internal safety practices and leadership and perceived accident-prevention outcomes.

2.2. Theoretical Framework

The theory of Safety Climate, first postulated by Dov Zohar, defines safety climate as the collective perceptions of the employees for organisational safety policies, procedures, and practices that indicate the management priorities towards safety performance (Anna, 2025). The recent empirical research in the construction setting found that a high perception of safety climate positively correlates with adherence to safety protocols and proactive safety behaviours of workers, which result in the enhancement of safety performance (Al-Bayati, 2021; Chen *et al.*, 2021a; Shahin *et al.*, 2026). Others have mentioned the psychological safety climate and this is where individual cognitive understanding of safety in the workplace occurs, as opposed to the organisational climate between

groups or organisational levels (Golzad *et al.*, 2023). However, the psychological safety climate emphasises individual interpretations and does not have a collective orientation on the organisation to explore the integrated safety management practices within complex infrastructure project environments. Therefore, the Safety Climate Theory provides a suitable insight into the cumulative effects of Safety-Oriented HR and Climate Practices on employee perceptions of safety, compliance behaviour and accident prevention within construction projects.

Transformational Leadership (TFL) Theory asserts that leaders should motivate followers by inspiring them with vision, intellectual stimulation, and individual consideration to go beyond standard expectations and embrace organisational goals (Bass and Avolio, 1993; Deng *et al.*, 2023). Empirical studies in construction settings support the claim that TFL enhances safety performance by strengthening workers' safety commitment, promoting knowledge sharing, and increasing proactive safety behaviour (Ali *et al.*, 2025; Senthamizh & Anandh, 2024). TFL is especially appropriate in project-based settings where the leader must manage multiple teams and enforce organisational goals in unstructured, ever-changing environments, compared to other leadership styles such as servant leadership. TFL Theory, therefore, serves as the conceptual base for Project Leadership by explaining how project leaders can reinforce safety priorities and motivate workers to adhere to safe practices that help prevent accidents.

At the macro level, the Institutional Theory explains the mechanisms of external regulation, normative pressures and cultural pressures that influence firms in their participation in practices that comply with societal expectations (Kauppi, 2022). Empirical research in the fields of infrastructure and construction has shown that the impact of government control and state development processes on organisational safety management systems and a more solid adherence to safety are significant (Olimat *et al.*, 2025; Saad *et al.*, 2026). Institutional Theory, therefore, provides a theoretical view of Vision 2030 as an institutional pressure that moderates the translation of internal processes (Safety-Oriented HR, Climate Practices and Project Leadership) into accident-prevention results.

The three theories are combined in this study as opposed to being independent explanatory lenses to explain accident prevention as a multi-level process. Safety Climate Theory describes the process in which Safety-Oriented HR and Climate Practices create formal expectations of safety via organisational systems (training, communication, and performance management). This is supplemented by the Transformational Leadership Theory which describes how project leadership converts these formal safety expectations into operational behaviours through supervision, enforcement and real time decision-making on-site. Institutional Theory goes further to expand this mechanism by arguing that these relationships are influenced by the external institutional environment. Particularly, the institutional setting of Vision 2030, as understood through the perceived regulatory pressure and organisational commitment to the national safety priorities, empowers or limits the degree to which the leadership can

successfully transform organisational safety systems into the results of accident prevention. Therefore, the prevention of accidents in large-scale infrastructure is not due to individual factors, but the interplay of formal safety systems, leadership implementation, and institutional support.

2.3. Hypotheses Generation

(Mosly & Makki, 2020) conducted a systematic survey among 401 construction workers working on the large projects in Saudi Arabia and studied 13 dimensions of the safety climate, such as education and training, communication, management commitment, involvement, and competence. The study established that safety commitment by the top management, training, and communication are particular practices that determine safety climate and most likely reinforce behaviour and results. Although it gave good evidence that the HR-related practices, such as training and communication, are fundamental determinants of the safety climate in the construction environment, it did not connect them to the result of perceived accident prevention directly, which is a gap that links practices to behavioural safety results.

Furthermore, mixed-method research was carried out among Micro, Small, and Medium Construction firms (440 surveyed respondents, with 11 interviews added) in Saudi Arabia (Alharbi *et al.*, 2025). It was discovered that the communication gap, the shortage of skilled workforce, the absence of committed safety personnel, and poor knowledge of safety were major limitations to safety compliance. These limitations are of an HR nature and explain why, in the absence of systematic HR practices, safety behaviour is likely to decline. The major limitation of this study, however, is that its sample is biased to the smaller-scale of firm, which cannot be generalised to the large-scale project conditions of Vision 2030 Institutional Pressure and Alignments. Also, the causal direction between HR shortages and accident prevention was not empirically determined.

Supplementing these results with evidence from a different geographical and organisational setting, a smaller quantitative study by (Mustapha *et al.*, 2024) of 77 construction workers in Ghana demonstrated that safety training and communication have a significant impact on productivity in terms of curtailing the risk of accidents and illness. The key barriers and resource gaps that were identified by the respondents as impediments to implementation are hierarchical barriers and a lack of resources. Moreover, organisational commitment was found to be necessary to support training and communication. Although not on a large scale, this study supports that practical training and communication, which are key HR safety practices are associated with better safety behaviours and outcomes, although it also highlights the need to have organisational support in order to realize their full preventive potential.

Although the safety climate is associated with safety behaviours and perceptions, (Chen *et al.*, 2021b) have indicated that its operationalization is not yet consistent in construction because of disjointed and dynamic project settings, and its direct impact on safety outcomes is challenging to determine. This indicates that safety climate processes might not always be transformed into quantifiable accident prevention within a

complicated project environment. In addition, (Shen *et al.*, 2017) analysed the influence of safety climate and leadership on the safety behaviour of the construction workers through structural equation modelling. Their findings showed that the relationship between safety climate and safety compliance as well as safety participation is significant, yet the association between safety climate and accident reduction is not as consistent.

The literature as a whole is rather fragmented. Although HR-based safety practices are always associated with better safety perceptions and behaviour, their direct connection with accident prevention is not conclusive, especially in dynamic and complex project settings. It means that the performance of these practices can be dependent on the contextual and operational variables instead of serving as independent predictors of accidents prevention.

Accordingly, this study proposes:

H1: Safety-Oriented HR and Climate Practices positively affect perceived accident prevention.

Empirical research is placing more emphasis on project leadership in influencing safety behaviour and reinforcing the act of accident prevention in construction settings. (Zeng *et al.*, 2026) investigated how transformational leadership affects new-generation construction workers through survey data from construction enterprises in Guangdong, China, and structural equation modelling (SEM). The researchers concluded that transformational leadership paid off in enhancing safety compliance and safety participation among workers. The strongest effect was demonstrated by inspirational motivation on safety compliance and participation, meaning that leaders who articulate a safety vision can internalize the safety norm and promote proactive involvement with safety practices. The behaviours are linked to better safety outcomes such as prevention of accidents. Nevertheless, the research primarily discussed behavioural outcomes and did not investigate the interaction of leadership and expanded organisational safety systems in complicated construction projects.

Additional support is provided by another quantitative study of 706 construction workers from Turkey on safety-specific transformational leadership (SSTL) (Ali *et al.*, 2025). The study conducted a cross-sectional survey and concluded that SSTL can largely enhance the safety behaviour of workers and also positively influence the sharing of knowledge about the safety practices. The leadership-safety relationship was also enforced by knowledge sharing, which implied that leaders fostering open communications allow workers to share safety information and become more aware of risks. The implication of these findings is that leadership creates a cooperative atmosphere related to better safety measures and accident prevention. The research was, however, based on perceptual survey data in one national setting, which might not be generalizable to other institutional settings like in big infrastructure programs.

To supplement these results, (Hamdan *et al.*, 2023) surveyed 385 supervisors, engineers, and project managers working in large contracting firms in Malaysia to investigate

the importance of safety leadership and competency in developing safety culture. Based on the SmartPLS analysis, the study discovered that safety leadership can substantially reinforce the aspects of safety culture like communication, training, and adherence to safety procedures. Effective safety culture enhances safer working conditions and aids in preventing accidents on the construction sites. But the study was mainly limited to contractor-level culture and not the project-level leadership dynamics that are common in large infrastructure programs.

The literature, collectively, places leadership as one of the driving forces of safety in operation; its impacts are not equally strong in all contexts. It seems that the effectiveness of leadership can be influenced by the surrounding organisational and environmental conditions and not as an independent one. This underlines the necessity to take into consideration leadership as a more general contextual and institutional unit. Thus, H2 is proposed:

H2: Project leadership positively affects perceived accident prevention.

Construction safety literature evidence reveals that the impact of external institutional forces, including government regulations, industry standards, and policy frameworks, tends to affect the translation of internal safety practices and leadership into safety outcomes. A study of institutional pressures and safety climate on construction projects analysed survey data of 186 construction companies in China and performed PLS analysis to assess the effects of coercive, normative, and mimetic pressures (He *et al.*, 2016). The results showed that external forces of rules and industry standards played a key role in improving the commitment of management to safety and the engagement of employees in safety activities. Such institutional pressures enhanced the workers' perceptions of safety responsibility and organisational safety priorities, proving the fact that external regulatory environments could impact the functioning of internal safety climate mechanisms in construction projects. Nevertheless, the research is ten years old, employed a small sample, and targeted non-Saudi companies, which restricts its applicability.

Similarly, a regulatory reforms and safety culture study in the construction industry concluded that institutional components such as government regulations, training needs and the application of policies are very essential in improving organisational safety culture (Saad *et al.*, 2026). The research, which analysed survey data of 105 construction professionals, revealed that regulatory bodies and institutional sponsors had a significant impact on the development of safety culture in comparison with contractors or actors at the project level. This implies that macro-level institutional structures can positively affect the impact of organisational safety practice in terms of shaping expectations, setting standards, and shaping firms to embrace stronger safety systems. However, the study has limitations due to the small sample size that restricts its generalization. The second research article by (Liu *et al.*, 2024) that focuses on the concept of safety governance in construction megaprojects emphasized the role of both institutional and governance mechanisms in managing complex safety risks.

The research developed a system-dynamics model of safety management within megaprojects and realised that governance institutions, regulatory controls and technological assistance can improve the ability of an organisation in preventing and reacting to safety failures. Such governance systems establish the general setting where the project-level safety practices are located hence the degree to which the organisational safety practices are functional in averting accidents.

Regarding leadership, (Elosta & Alzubi, 2024) examined the impacts of the perceived employer safety obligations on the connection between safety leadership and safety behaviour in 359 construction professionals. Their results concluded that strong employer safety obligations increased the positive effect of safety leadership on safety behaviour, *i.e.*, the greater the perceived emphasis of the organisation on safety obligations, the greater the effect of the leadership on the enhancement of safety practices. It indicates that external or situational demands regarding safety (like organisational policies or norms) may support effective leadership in leading to safer behaviours. Nevertheless, the prevention of accidents was not directly examined in this research, and the sample was only Turkey professional, which also restricts the ability to generalize this study to the Saudi setting. Second research by (Hussain *et al.*, 2026) investigated regulatory competencies to introduce Design for Safety (DfS) in construction, surveying 91 stakeholders, including regulators and designers. It was discovered that implementation of safety requirements relied heavily on leadership and commitment, capacity building, technology integration, compliance, collaboration, and resource allocation. This demonstrates that leadership in regulatory and enforcement agencies has a great influence on the implementation of safety practices, which impact safety outcomes. One weakness is that the research did not directly examine project-level leadership or accident prevention, and its context in Malaysia could vary from other institutional settings. Nevertheless, it also helps to believe that the effects of leadership on safety may be mitigated through Vision 2030 Institutional Pressure and Alignment.

Nevertheless, a few pioneer studies offer valuable information about the way safety outcomes are generated by means of various organisational processes. (Clarke, 2013) summarizes data in high-risk industries and discovers that safety leadership, especially transformational and supervisory leadership, is significantly more directly and strongly related to safety compliance and accident reduction than safety climate itself. The analysis indicates that although the safety climate reflects mutual view of safety policies, its impact on actual safety outcomes is highly reinforced through behavioural compliance, but the leadership directly influences the workers in their daily safety decisions and compliance behaviours at the workplace. In the same vein, (Zohar & Luria, 2010) construct a multilevel framework of safety climate and show that organisational safety mechanisms, such as safety policies rooted in the HR, do not necessarily translate into the safe behaviour unless they are put into practice through group-level supervisory leadership. Their results emphasize leadership as the important implementation layer that transforms formal safety procedures into manifest safety practices where

supervisory behaviour determines the extent to which safety policies are actually implemented in real working conditions. Collectively, these studies indicate that leadership has a more direct operation role in the safety performance as compared to HR-based systems, which offers a better background to comprehend why contextual/institutional forces are more inclined to enhance leadership-directed safety pathways. Overall, although institutional frameworks should have an impact on organisational safety practices, these impacts might not be homogenous among various mechanisms. In more complicated project settings institutional pressures can be more directly converted into leadership behaviours than formal HR-based mechanisms. Thus, H3 and H4 are proposed

H3: Vision 2030 Institutional Pressure and Alignments moderate the relationship between Safety-Oriented HR and Climate Practices and perceived accident prevention.

H4: Vision 2030 Institutional Pressure and Alignments moderate the relationship between Project leadership and perceived accident prevention.

2.4. Conceptual Framework

(Fig. 1) shows the conceptual framework of this study with respective hypotheses. Safety-Oriented HR and Climate Practices and Project Leadership are independent Variables (IVs), impacting the dependent variable (DV), which is perceived accident prevention. Both pathways are shown to be moderated by a moderating variable (MV), Vision 2030 Institutional Pressure and Alignment (Fig. 1).

2.5. Literature Gap

Previous studies have largely investigated safety climate, HR practices, and leadership in association to safety behaviours, compliance, and safety culture in construction contexts (Ali *et al.*, 2025; Mosly & Makki, 2020; Xia *et al.*, 2025). Nevertheless, the relationship between these internal processes and perceived accident prevention as a direct consequence has received relatively less focus, especially in large-scale and high-risk project contexts. Furthermore, although institutional theory posits that external regulatory and policy structures influence the organisational practices,

empirical data on the interaction between these macro-level factors and internal safety systems and leadership processes is scarce. Consequently, the question of whether institutional programs are selectively reinforcing specific pathways in complex infrastructural contexts or uniformly reinforcing the whole range of safety mechanisms is still under-understood.

3. METHODOLOGY

The research design in this paper was quantitative in nature to investigate the connections between Safety-Oriented HR and Climate Practices, project leadership, and perceived accident prevention, and the moderating effect of the Vision 2030 Institutional Pressure and Alignments. Quantitative research enables measurement of constructs with structured tools and offers statistical support of hypothesized relationships (Taherdoost, 2022). Despite the conceptual multilevel nature of the constructs (perceptions of individuals, organisational structures, and institutional environments), they are theoretically represented on the perceptual level, which is aligned with the extensive literature in PLS-SEM.

The population of interest included construction professionals involved in large-scale infrastructural development in Saudi Arabia, such as operational personnel, supervisors, engineers, and project managers. Professional LinkedIn groups were used to recruit the sample: the survey link was shared through LinkedIn posts and sent to professional contacts, ensuring a wide coverage of roles and types of projects. Purposive sampling was used, which (Hossan *et al.*, 2023) described as a sampling method that involves the selection of participants who fit into a given set of inclusion criteria, *e.g.*, experience in infrastructure projects and awareness of safety practices in this study. The rationale behind the use of purposive sampling is that the research aims to capture the opinion of informed people who are directly related to safety management, which increases construct validity. However, despite the presence of some frontline workers in the sample, the sample is biased towards supervisory, engineering, and managerial professionals.

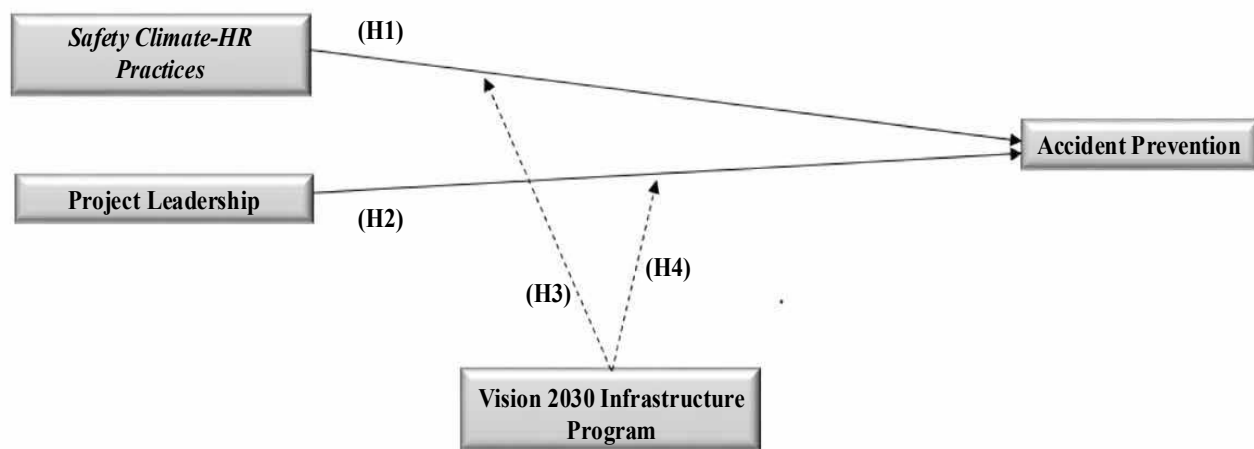


Fig. (1). Conceptual framework.

Of the 500 responses collected, 400 valid responses were obtained after the screening was done based on completeness and consistency. A priori G*Power analysis (linear multiple regression, fixed model, R^2 deviation of zero) was run using an effect size of 0.15 (medium), alpha level of 0.05, statistical power of 0.80, and four predictors, which indicated a minimum required sample size of approximately 85–100 respondents. The standard guidelines for G*Power application in behavioural research confirm that such parameters are appropriate for determining minimum sample requirements in regression-based models (Kang, 2021). Thus, the final sample size of 400 respondents can be considered adequate.

The structured questionnaire was used to collect data, and it included two primary parts: demographics and constructs (Appendix A). The constructs section with Likert scale (1=strongly disagree to 5=strongly agree) encompassed Safety-Oriented HR and Climate Practices, project leadership effectiveness, the alignment of the Vision 2030 Institutional Pressure and Alignment, and prevention of accidents. Safety-Oriented HR and Climate Practices revolved around training and communication, and project leadership involved supervision and safety enforcement interventions.

The questionnaire questions in this research were updated on the validated and well-established measurement scales that are common in safety and leadership studies. Items of safety climate were mainly based on the Zohar original safety climate scale that has been largely revised and tested in later construction safety research as a measure of management commitment and safety practices perceptions as stated in (Seo et al., 2004). The transformational leadership items were based on Multifactor Leadership Questionnaire (MLQ-5X) that is a well-validated tool created by Bass and Avolio to assess leadership behaviours in a variety of dimensions as stated in (Tejeda et al., 2001). In addition, the questionnaire was also perfected based on expert advice and pilot testing to make it clear and relevant in context. Items were also modified slightly to match the Saudi construction context and terms whilst retaining conceptual similarity with the original validated scales.

The Safety-oriented HR and Climate practices measurement items were formulated to reflect both the structural facet of HR-based safety system (e.g., training, communication, and enforcement) and its contribution to the development of common safety perceptions among the employees in accordance with the integrated conceptualization of the construct. Vision 2030 Institutional Pressure and Alignment was operationalised as the perceptions of employees on regulatory expectations, policy guidance, and alignment of the organisation to national safety priorities under Vision 2030. The items represent the external institutional pressure as well as the degree to which the organisations comply with their practices on safety with these expectations.

Procedural and statistical solutions were adopted to reduce common method bias. Procedurally, anonymity and voluntary participation were stressed, and questionnaire items were randomized to minimize response patterns. Statistically, Harman's single-factor test was performed, according to

(Kock, 2020), this test determines whether a first factor explains most of the variance which should be less than 50%; in this study, the variance was not above this level. Non-response bias was also tested by comparing the early and the late respondents to enable consistency in the response across the periods of collection, and no such bias was observed. Moreover, values of Variance Inflation Factor (VIF) were also used to check CMB through full collinearity approach, where all predictor constructs yielded values below 5, confirming no issue of common method bias.

The analysis of the data was conducted with the help of Partial Least Squares Structural Equation Modeling (PLS-SEM), which is a variance-based method that can be applied to complex models containing latent variables. The PLS-SEM is suitable for the present study because it is capable of addressing small to medium sample sizes, non-normal data, and predictive modelling that has moderation effect as advocated by (Memon et al., 2021) as well. Cronbach's alpha (≥ 0.70) and composite reliability (≥ 0.70) were used to test measurement validity based on internal consistency, Average Variance Extracted (≥ 0.50) was used to test convergent validity, and ratios of HTMT (< 0.85) were used to test discriminant validity (Aburumman et al., 2022; Rasoolimanesh, 2022). In this study, moderation was evaluated by inclusion of interaction terms between Vision 2030 Institutional Pressure and Alignment and the independent variables in the PLS-SEM model. In addition, a direct impact of Vision 2030 Institutional Pressure and Alignment on perceived accident prevention was added as a control path to consider its possible independent effect on safety outcomes. Moreover, evaluation of the structural models incorporated R^2 to assess variance explained in perceived accident prevention and Q^2 (through a blindfolding process) to evaluate the predictive relevance of the endogenous constructs as mentioned by (Wijaya et al., 2022). The use of bootstrapping with 5,000 resamples was implemented to test the significance of path and moderation effect of the Vision 2030 Institutional Pressure and Alignment.

Ethical considerations were strictly followed. Study participation was voluntary, and the participants had knowledge of the purpose of the study, possible benefits, and their right to drop out. No personally identifiable data was gathered, and thus the information was confidential and anonymous. Prior to the administration of questionnaires, informed consent was obtained, and ethical clearance was also obtained from the relevant institutional review board.

4. RESULTS

4.1. Descriptive Analysis

The demographic features of the 400 respondents are shown in Table 1. Most respondents were men (73.0%), and 24.0% were women, and 3.0% did not disclose their gender. With regard to age, the majority of the respondents fell in the 25-34 years; and 35-44-years brackets (36.5% and 32.0%, respectively), which implies that the workforce in the infrastructure projects is relatively young and dynamic. In terms of educational qualifications, 44.0% had a bachelor's degree, 22.0% had diplomas, and 17.5% were having Masters'

degrees, implying that the majority of the respondents are holders of formal technical education. In relation to occupation, the operational/frontline workers represented 29.5%, the supervisory workers represented 28.0%, the managers represented 27.0%, and the senior management represented 15.5%. Lastly, regarding industry experience, the most common category was 6-10 years (36.5%), then 3-5 years (25.5%), and over 10 years (24.5 percent), which is indicative of a workforce with a considerable industry exposure.

4.2. Measurement Model

The measurement model results are presented in Table 2, showing construct reliability and validity. Each indicator values for loading factor varied between 0.784-0.925 (≥ 0.70 threshold). Internal consistency is confirmed as Cronbach’s alpha values (0.813-0.899) and composite reliability (0.889-0.937) are above the standard threshold (≥ 0.70). Additionally,

convergent validity is satisfactory as AVE values were between 0.727-0.833 significantly more than ≥ 0.50 threshold. Overall, reliability and validity of constructs are adequate, signifying their structural analysis appropriateness.

4.3. Discriminant Validity

Using Heterotrait-Monotrait ratio (HTMT) Table 3 presents results for discriminant validity for all the constructs. HTMT is an evaluation for empirical differences presence between constructs. All the values in Table 3 were less than the 0.85 thresholds. Importantly, despite being close to the threshold, the largest figure (0.751) between Safety-Oriented HR and Climate Practices and falls within the reasonable range. Thus, it is confirmed that each construct does not reflect same concept with no overlapping of concepts and multicollinearity, showing discriminant validity of adequate level.

Table 1. Descriptive analysis results for 400 respondents.

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	292	73.0
	Female	96	24.0
	Prefer not to say	12	3.0
Age Group	Below 25	48	12.0
	25–34	146	36.5
	35–44	128	32.0
	45–54	56	14.0
	55 and above	22	5.5
Educational Qualification	Secondary	52	13.0
	Diploma	88	22.0
	Bachelor’s	176	44.0
	Master’s	70	17.5
	Doctorate	14	3.5
Current Job Role	Operational / Frontline	118	29.5
	Supervisory	112	28.0
	Managerial	108	27.0
	Senior Management	62	15.5
Industry Experience	Less than 3 years	54	13.5
	3–5 years	102	25.5
	6–10 years	146	36.5
	More than 10 years	98	24.5

Table 2. Measurement model.

Latent Construct	Indicator	Factor Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Perceived accident prevention	AP1	0.784	0.813	0.889	0.727
	AP2	0.892			
	AP3	0.878			
Project leadership	PL1	0.884	0.874	0.922	0.799
	PL2	0.921			
	PL3	0.875			
Safety-Oriented HR and Climate Practices	SCHRP1	0.912	0.899	0.937	0.833
	SCHRP2	0.925			
	SCHRP3	0.900			
Vision 2030 Institutional Pressure and Alignment	VIP1	0.874	0.860	0.915	0.781
	VIP2	0.905			
	VIP3	0.872			

Note: Factor Loadings ≥ 0.70 ; Cronbach's alpha ≥ 0.70 ; CR ≥ 0.70 ; AVE ≥ 0.50 (Hair et al., 2021; Mia et al., 2022)

Table 3. Discriminant validity using HTMT.

-	Perceived Accident Prevention	Project Leadership	Safety-Oriented HR and Climate Practices	Vision 2030 Institutional Pressure and Alignment
Project leadership	0.600	-	-	-
Safety-Oriented HR and Climate Practices	0.500	0.751	-	-
Vision 2030 Institutional Pressure and Alignment	0.649	0.725	0.623	-

Note: HTMT threshold < 0.85 (Afthanorhan et al., 2021; Cheung et al., 2023)

4.4. Path Coefficient

The results of the structural model are provided in Table 4, comprising path coefficients, t-statistics, and p-values, indicating the direct and moderating impact of the study variables. The findings suggest positive, significant influence of project leadership on perceived accident prevention ($\beta = 0.270, t = 4.102, p = 0.001$), which suggest that a stronger leadership provide better impact on the safety outcomes of the infrastructure projects, supporting H2. Conversely, the impact of Safety-Oriented HR and Climate Practices on perceived accident prevention ($\beta = 0.100, t = 1.618, p = 0.106$) is weak and statistically not significant, implying that it does not have a direct effect in this model, rejecting H1.

Two interaction effects were examined: Vision 2030 Institutional Pressure and Alignment x Project Leadership and Vision 2030 Institutional Pressure and Alignment x Safety-Oriented HR and Climate Practices. The interaction with project leadership is significant ($\beta = 0.105, p = 0.042$) supporting H4, but, the interaction with Safety-Oriented HR

and Climate Practices is not significant ($\beta = 0.057, p = 0.332$), rejecting H3.

Results of f^2 were also given in Table 4, which reveal that Vision 2030 Institutional Pressure and Alignment have a medium impact on perceived accident prevention ($f^2 = 0.139$), whereas project leadership has a small impact ($f^2 = 0.046$). Conversely, Safety-Oriented HR and Climate Practices ($f^2 = 0.007$) and the two interaction terms ($f^2 = 0.011; f^2 = 0.003$) have insignificant effects. This indicates that institutional context has a significant role in explaining accident prevention, with leadership playing a small role and HR-based practices having little practical weight in the model. Besides the hypothesized relationships, the direct relationship between the Vision 2030 Institutional Pressure and Alignment and the perceived accident prevention was measured as a control relationship. The strongest direct effect of the Vision 2030 Institutional Pressure and Alignment on perceived accident prevention ($\beta = 0.395, t = 7.411, p = 0.001$) is observed, which indicates the significance of institutional programs in the formation of safety performance.

Table 4: Path coefficient

-	Path Coefficient	T-Statistics	P-Values	f-Square
Project leadership -> Perceived accident prevention	0.270***	4.102	0.001	0.046
Safety-Oriented HR and Climate Practices -> Perceived accident prevention	0.100	1.618	0.106	0.007
Vision 2030 infrastructure program -> Perceived accident prevention	0.395***	7.411	0.001	0.139
Vision 2030 infrastructure program x Project leadership -> Perceived accident prevention	0.105**	2.032	0.042	0.011
Vision 2030 infrastructure program x Safety-Oriented HR and Climate Practices -> Perceived accident prevention	0.057	0.971	0.332	0.003

Note: Number of asterisks shows significant paths: ** for $p < 0.05$ (5%), and *** for $p < 0.01$ (1%)

4.5. Explanatory Power

The coefficient of determination (R^2) and the predictive relevance of the model (Q^2) are presented in Table 5. The R^2 of perceived accident prevention is 0.377 (adjusted $R^2 = 0.371$) shows a moderate explanatory power. This implies that its predictors explain about 37% of perceived accident prevention. Moreover, the Q^2 of 0.342 in Table 5 indicates large predictor relevance, implying effectiveness of the model in predicting perceived accident prevention. Overall, the model has a moderate explanatory power and large predictive relevance.

Table 5. Explanatory power and predictive relevance.

-	R-Square	R-Square Adjusted	Q-Square
Perceived accident prevention	0.377	0.371	0.342

Note: $R^2 = 0.25$ (weak), $R^2 = 0.5$ (moderate), and $R^2 = 0.75$ (substantial); $Q^2 = 0.02$ (small), $Q^2 = 0.15$ (medium), and $Q^2 = 0.35$ (large) (Wijaya et al., 2022)

5. DISCUSSION

The results demonstrate varied impacts among organisational practices, leadership processes, and institutional forces, which provide an understanding of how perceived accident prevention is formed in challenging construction settings.

H1 proposed that Safety Climate–HR Practices positively affect perceived accident prevention; however, this hypothesis was not supported ($\beta = 0.100, p = 0.106$). The relationship was positive but not significant, which indicated that HR-based safety practices do not necessarily has direct impact on perceived accident prevention outcomes in large construction projects. This is contrary to previous research studies which highlight the beneficial effect of safety training, communication, and management commitment in enhancing the safety behaviour (Mosly & Makki, 2020; Mustapha et al., 2024). However, previous studies focused on the behavioural outcomes, including the safety compliance or engagement, but not directly on the results of accident prevention. Safety training or communication in highly complicated infrastructure projects might increase awareness but may not necessarily

cause an instant decrease in the number of accidents unless supported by powerful supervision and on-site leadership. In practice, this implies that the introduction of safety training programs or HR policies alone is not enough unless all these programs are put into action or are applied in the day-to-day project management. The other reason can be complexity of the vision 2030 projects, in which the large workforce, subcontracting arrangement, and various grades of skills diminish the direct impact of HR safety policies.

H2 suggested that Project Leadership has a positive influence accidents prevention, and this was confirmed ($\beta = 0.270, p = 0.001$). This finding indicates that leadership has a significant but smaller effect in preventing accidents than the HR safety practices. It is in line with other research findings that indicate that transformational or safety-oriented leadership facilitates the growth of safety compliance, knowledge exchange, and proactive safety behaviour (Ali et al., 2025; Zeng et al., 2026). The leaders, who work at the project level, are engaged directly in the organisation of teams, implementation of safety measures, and real-time responses to the hazards, so their impact is more immediate and practical than the HR policies formulated at the organisational level. The high coefficient relative to Safety-Oriented HR and Climate Practices is also an indication that behavioural enforcement and supervision at workplace may have a greater role in accident prevention accidents than policy-based safety systems. Practically, construction conditions are dynamic and unpredictable; thus, project leaders that communicate safety priorities, oversee compliance, and interfere in dangerous situations can considerably cut down accidents. Though the positive impact of project leadership is high, its effect size is small ($f^2 = 0.046$), which implies a minimal practical impact in comparison to the institutional context. Vision 2030 Institutional Pressure and Alignment, on the other hand, has a medium effect size ($f^2 = 0.139$) indicating that institutional pressures have a larger effect on perceived accident prevention. It implies that leadership is a mechanism that is both significant and context-dependent that exists within a larger institutional context.

Concerning the moderating impact, H3 hypothesized that the Vision 2030 Institutional Pressure and Alignment moderate the relationship between Safety-Oriented HR and Climate Practices and perceived accident prevention but results did not

support the hypothesis ($\beta = 0.057$, $p = 0.332$). This observation was inconsistent with the institutional theory, which claims that the organisational behaviour is influenced by external forces like governmental regulations, country policies, and standards of the industry (Kauppi, 2022). It can be discussed that institutional programs are usually oriented on regulatory compliance and safety standards, but not on internal HR management systems. Although the Vision 2030 efforts can impose safety checks or technology surveillance, it might not have a direct impact on the way organisations lay out or adopt their HR safety strategies. Moreover, HR practices work on a strategic organisational level, and institutional regulations work on a project or regulatory level, which means that the two mechanisms have limited interaction.

H4 also hypothesized positive moderating impact of Vision 2030 Institutional Pressure and Alignment but on Project Leadership and perceived accident prevention, which current findings supported ($\beta = 0.105$, $p = 0.042$). With high external safety expectations, project leaders have higher authority, resources, and regulatory support to impose safety practices on-site. It strengthens the Institutional theory and previous results that regulatory climate improves the efficacy of the leadership in forming the safety behaviours (Elosta & Alzubi, 2024; Kauppi, 2022). In practice, the existence of national infrastructure programs under Vision 2030 make it mandatory for project leaders to fulfil the criteria of safety performance, which can stimulate the increased safety supervision and enforcement. The moderation of HR practices is not significant compared with the significant moderation of leadership, which implies that the institutional pressures are more strongly interacted with operational leadership than with administrative safety systems, confirming the earlier literature work (Clark, 2013; Zohar & Luria, 2010).

In general, the results indicated that leadership behaviour and institutional enforcement are more likely to influence safety performance in large-scale construction settings than simply HR policies.

THEORETICAL CONTRIBUTION

This study provides a small theoretical contribution by uniting the three viewpoints of safety climate, leadership, and institutional points of view in one framework to explore accident prevention in construction contexts. By doing so, it underscores the fact that various types of safety mechanisms, such as formal organisational systems and operational leadership practices, might play different roles than acting as a single set of predictors. The study also indicates that institutional context can have a differentiated influence in informing safety-related processes. Instead of having a homogenous effect, external pressures can be in closer interaction with the operational elements of safety implementation as compared to formal administrative systems. This indicates that contextual boundary conditions are important to consider when analysing the relationship between organisational safety mechanisms and safety outcomes. These observations are meant to be context-specific observations based on large scale infrastructure projects and are supposed to

be viewed as indicative rather than definitive, owing to the cross-sectional and perceptual nature of the data.

LIMITATIONS AND FUTURE RESEARCH

This study has various limitations despite its contributions. First, the cross-sectional type does not allow the researcher to build a causal relationship between the constructs. Longitudinal research designs should be used in the future to investigate the effects of safety climate, leadership behaviour, and institutional programs on the prevention of accidents over time. Second, the research is based on self-reported perceptual survey information, which can cause bias of respondents. Future research may include objective safety measures like accident history, near miss reports, and safety audit scores. Further analysis of the contextual factors like contractor management systems, safety monitoring systems based on technology, and diversity of the workforce would also enhance study. Comparative research in various national infrastructure programs may also enable the evaluation of whether it is true that the moderating role of institutional initiatives is not limited to the Vision 2030.

The use of purposive non-probability sampling may limit the generalizability of findings beyond the studied sample. In future research, probability-based sampling methods must be used to increase representativeness and external validity among various construction populations. Further, the sample obtained by means of professional networking sites like LinkedIn is most prone to reflect supervisory, engineering, and managerial staff but not frontline workers and low-literary employees. Thus, the results are more of a perception of professional construction personnel and not the entire range of personnel at the site level. Finally, the fact that the safety climate and HR practices are introduced as a single construct, can also create conceptual ambiguity, due to the combination of perceptual and structural aspects. Further studies can conduct investigations on these constructs independently to give a better theoretical difference and determine their independent impact on safety outcomes.

CONCLUSION

This study investigated the role of Safety-Oriented HR and Climate Practices and Project Leadership on perceived accident prevention in Saudi infrastructure projects, where Vision 2030 served as a moderator. The results suggest that leadership is an important factor in preventing accidents, but institutional forces (through Vision 2030) have a stronger overall impact on safety outcomes, and HR-based safety practices have limited direct effect. The research illustrates that the role of leadership and alignment with national programs is more effective than solo HR safety practices in the prevention of on-site accidents.

The results provide practical implications to construction organisations and policymakers. First, project leaders should focus on developing leadership skills in the firms by training leaders on safety communication, supervision, and proactive enforcement because effective leadership directly impacts on the prevention of accidents. Second, organisations need to align internal safety programs with national programs such as Vision

2030, including adherence to regulatory standards and use of institutional direction to support safety culture. It is advisable to implement it in a stepwise manner: recognizing major leadership gaps, aligning HR practices and program guidelines, and tracking safety performance and refining practices. Third, policymakers may improve the safety in the industry through the design of structured frameworks, which promote leadership-based safety interventions in combination with incentives, compliance monitoring, and reporting systems. These plans focus on an integrated approach in which leadership, human resources practices, and institutional structures interrelate, eventually leading to safer infrastructure project environments and eliminating the frequency of on-site accidents.

LIST OF ABBREVIATIONS

HLM	=	Hierarchical Linear Models
NDAP	=	National Data Analytics Platform
PLFS	=	Periodic Labour Force Survey
SC	=	Scheduled Caste
ST	=	Scheduled Tribe
SECC	=	Socio-Economic and Caste Census

AUTHOR'S CONTRIBUTION

F.M. contributed to the design and implementation of the study. E., S.A.A., J.O. contributed to the analysis of the results and the writing of the manuscript.

ETHICAL APPROVAL & INFORMED CONSENT

All procedures were carried out in accordance with institutional research ethics committee guidelines and Declaration of Helsinki. Informed consent was obtained from all participants. To ensure participant protection, all data were fully anonymized at the point of collection, and no personal or identifiable data was recorded.

AVAILABILITY OF DATA AND MATERIALS

The data will be made available on reasonable request by contacting the corresponding author [F.M.].

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CONFLICT OF INTEREST

The author declares that there is no conflict of interest regarding the publication of this article.

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DECLARATION OF AI

During the preparation of this work the authors used ChatGPT for editing purposes. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

APPENDIX A

Study Title: Safety-Oriented HR and Climate Practices and Project Leadership on Perceived accident prevention: Vision 2030 Institutional Pressure and Alignment as a Moderator

Research Team: [Student names]

Introduction

Thank you for considering participation in this research study. We, a group of students, are conducting a study on the relationship between Safety-Oriented HR and Climate Practices, project leadership, and perceived accident prevention, with a particular focus on the moderating role of the Vision 2030 Institutional Pressure and Alignment. Your participation is valuable and will significantly contribute to the completion of this research.

Purpose of the Study

The aim of this study is to explore how Safety-Oriented HR and Climate Practices and project leadership influence perceived accident prevention within infrastructure projects, and how the Vision 2030 Institutional Pressure and Alignment acts as a moderator in this relationship. By participating, you will help us understand how HR practices, leadership styles, and national infrastructure reforms are working together to improve safety outcomes in the construction sector. Your responses will provide valuable insights into the effectiveness of these practices and how Vision 2030 initiatives are shaping safety standards and perceived accident prevention.

What will I be asked to do?

You will be asked to complete a questionnaire that will take approximately 5-15 minutes to complete. The questions will focus on your experiences and views regarding Safety-Oriented HR and Climate Practices, project leadership, and the impact of the Vision 2030 Institutional Pressure and Alignment on perceived accident prevention within your projects. Your participation will help us collect essential data to support our research findings.

Confidentiality

Your responses will be kept strictly confidential. The information you provide will only be used for research purposes. No personally identifiable information will be collected, and your participation will remain anonymous.

Voluntary Participation

Participation in this study is entirely voluntary. You can choose not to participate, or withdraw from the study at any time without any consequences. If you decide to withdraw, your responses will be excluded from the final analysis.

Potential Risks

There are no anticipated risks involved in participating in this study. The questions are non-invasive and do not require sensitive personal information. If you feel uncomfortable at any point, you are free to skip any questions or withdraw.

Thank you for taking the time to consider participating in this study. Your involvement is greatly appreciated.

1. What is your gender?

- Male
- Female
- Prefer not to say

2. What is your age group?

- Below 25
- 25–34
- 35–44
- 45–54
- 55 and above

3. What is your highest educational qualification?

- Secondary
- Diploma
- Bachelor’s
- Master’s
- Doctorate

4. What best describes your current job role?

- Operational/Frontline
- Supervisory
- Managerial
- Senior Management

5. How many years of total experience do you have in this industry?

- Less than 3 years
- 3–5 years
- 6–10 years
- More than 10 years

Variable	Question Statement	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Safety-Oriented HR and Climate Practices	1. The company’s safety climate practices help reduce the number of accidents on construction sites.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2. Safety training and communication systems in the organisation promote shared awareness and understanding of safety among employees.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3. Safety-oriented HR practices (e.g., performance monitoring and enforcement) consistently reinforce safe work behaviours across project sites.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project Leadership Effectiveness	1. Project leadership has played a key role in improving safety standards on construction projects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2. Leadership in the organisation ensures that safety protocols are followed on all projects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3. Strong leadership has contributed to preventing accidents on the worksite.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vision 2030 Institutional Pressure and Alignment	1. Vision 2030 infrastructure initiatives create strong expectations for improving safety standards at my workplace.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2. Vision 2030 provides clear regulatory and policy guidance that shapes safety practices in the construction industry.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3. My organisation actively aligns its safety practices with the requirements of Vision 2030 infrastructure programs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Perceived accident prevention	1. Implement proactive steps to prevent accidents and maintain safety on the worksite.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2. Always follow safety protocols to minimise the risk of accidents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3. Safety measures in place have significantly reduced accident rates.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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