

Occupational Safety Climate, Employee Engagement, and Employee Performance in UAE Construction: A Mediation Analysis

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Abstract

Employee performance in the UAE construction sector is influenced not only by general working conditions but also by employees' perceptions of how strongly safety is prioritized in daily organizational practice. Building on Job Demands–Resources theory, this study examines the effect of occupational safety climate on employee performance and investigates the mediating role of employee engagement in the UAE construction context. A quantitative cross-sectional research design was adopted, and data from 435 valid respondents were analysed using Partial Least Squares Structural Equation Modelling. The measurement model demonstrated satisfactory reliability, convergent validity, and discriminant validity. The structural model results showed that occupational safety climate had a significant positive effect on employee performance ($\beta = 0.242$, $t = 5.024$, $p < 0.001$) and employee engagement ($\beta = 0.221$, $t = 4.942$, $p < 0.001$). Employee engagement also had a significant positive effect on employee performance ($\beta = 0.251$, $t = 4.971$, $p < 0.001$). In addition, employee engagement significantly mediated the relationship between occupational safety climate and employee performance ($\beta = 0.055$, $t = 3.356$, $p < 0.001$), confirming complementary partial mediation. The model explained 31.1% of the variance in employee engagement and 31.0% of the variance in employee performance. These findings show that occupational safety

climate should not be treated only as a compliance or accident-prevention issue, but also as a performance-related organizational resource. The study contributes to construction management literature by demonstrating that safety climate enhances employee performance both directly and indirectly through employee engagement.

Keywords: occupational safety climate, employee engagement, employee performance, construction workers, UAE, PLS-SEM

1. Introduction

The construction industry is a major contributor to economic development in the United Arab Emirates (UAE). It supports infrastructure growth, urban development, and national economic diversification. At the same time, construction remains a labour-intensive and safety-sensitive sector in which workers are exposed to demanding physical, environmental, and organizational conditions. The UAE construction workforce is also strongly shaped by migrant labour, multilingual work teams, and site-based operational pressures, making worker safety, engagement, and performance important issues for both firms and policy makers (International Labour Organization, 2024; Lyu et al., 2025).

Employee performance is central to construction project success because it affects task completion, work quality, productivity, safety compliance, and timely project delivery. In organizational research, employee performance is not limited to output alone. It is more accurately understood as work-related behaviour that contributes to organizational goals (Campbell & Wiernik, 2015). This behavioural view is useful in construction because project outcomes are influenced not only by individual effort but also by site conditions, equipment availability, supervision, communication, and safety practices. Prior research also shows that employee performance is multidimensional, including task performance, contextual performance, adaptive performance, and the avoidance of counterproductive behaviour (Borman & Motowidlo, 1993; Koopmans et al., 2011, 2014; Pulakos et al., 2000).

Among the organizational factors that may influence employee performance, occupational safety climate has become especially important. Occupational safety climate refers to employees' shared perceptions of how seriously safety is prioritized through policies, communication, supervision, procedures, and everyday work practices (Xia et al., 2024). In construction, where work is frequently performed under risk, uncertainty, and time pressure, safety climate can influence how workers behave, how much they trust management, and how effectively they perform their tasks.

Much of the existing safety climate literature focuses on safety behaviour, safety participation, injuries, and accident prevention. These outcomes are important, but they may not capture the broader organizational value of safety climate. A positive safety climate may also support employee performance by reducing uncertainty, improving trust, strengthening procedural discipline, and creating a more supportive psychological work environment (Abegaz et al., 2025; Castro et al., 2025; Meng et al., 2024). Therefore, safety climate should not be seen only as a technical or compliance issue. It may also function as a performance-related organizational resource.

Employee engagement may explain how occupational safety climate contributes to employee performance. Employee engagement refers to a positive work-related psychological state characterized by vigour, dedication, and absorption (Schaufeli et al., 2006). Engaged employees are more energetic, focused, committed, and willing to invest effort in their work. In demanding construction environments, engagement can help workers maintain performance despite physical strain, heat exposure, fatigue, and operational pressure (Han et al., 2024; Ibrahim et al., 2023; Reig Botella et al., 2024).

Job Demands–Resources theory provides the theoretical foundation for this study. According to JD-R theory, job resources support motivation and engagement, which can then improve work outcomes (Bakker et al., 2023; Bakker & Demerouti, 2024). Within this logic, occupational safety climate can be understood as a contextual job resource. When workers perceive that safety is genuinely valued, they may feel more protected, supported, and psychologically available for their work. This can strengthen employee engagement and ultimately improve employee performance.

Based on this background, this study investigates the relationship between occupational safety climate, employee engagement, and employee performance in the UAE construction sector. Specifically, it examines whether employee engagement mediates the relationship between occupational safety climate and employee performance. The study contributes to construction management and organizational behaviour literature by extending the role of occupational safety climate beyond safety outcomes and by testing its relationship with engagement and performance in the UAE construction context.

2. Literature Review

2.1 Occupational Safety Climate and Employee Performance

Occupational safety climate reflects employees' perceptions of the priority given to safety within an organization. It includes perceptions of management commitment, safety communication, enforcement of safety procedures, supervisor support for safety, and the extent to which safety is practiced consistently on site (Xia et al., 2024). In construction, occupational safety climate is highly relevant because workers face physical hazards, changing site conditions, subcontracting arrangements, time pressure, and environmental risks.

Previous research has shown that safety climate is associated with safety participation, safety behaviour, and occupational injuries among construction workers (Abegaz et al., 2025). Safety climate can also affect safety behaviour through relational and motivational mechanisms, including personnel engagement and social relationship exchange (Meng et al., 2024). These findings suggest that safety climate is not only a background condition but a meaningful organizational factor that influences worker behaviour.

Although safety climate is often studied in relation to injuries and compliance, it may also influence broader employee performance. A strong safety climate can improve task focus, reduce uncertainty, strengthen trust in supervisors, and support more disciplined work behaviour. In construction, employee performance involves more than completing tasks. It also includes maintaining quality, adapting to changing site conditions, cooperating with others, and following safe procedures (Borman & Motowidlo, 1993; Koopmans et al., 2011; Pulakos et al., 2000). Therefore, a positive occupational safety climate may support both safety-related and general performance outcomes.

This view is consistent with Job Demands–Resources theory. JD-R theory explains that organizational resources help employees achieve work goals, reduce job demands, and maintain effective functioning (Bakker et al., 2023; Bakker & Demerouti, 2024).

Occupational safety climate may operate as a contextual resource because it signals that the organization values worker protection and provides a safer, more predictable work environment. Based on this reasoning, the following hypothesis is proposed:

H1: Occupational safety climate has a significant positive effect on employee performance in UAE construction firms.

2.2 Occupational Safety Climate and Employee Engagement

Employee engagement is commonly defined as a positive and active psychological state characterized by vigour, dedication, and absorption (Schaufeli et al., 2006). Vigour refers to high energy and persistence at work. Dedication reflects enthusiasm, significance, and pride. Absorption refers to being fully concentrated and immersed in work. These dimensions are particularly important in construction because workers often face demanding conditions that require sustained attention, effort, and resilience.

Occupational safety climate may positively influence employee engagement. When employees believe that safety is genuinely prioritized, they may feel more valued, protected, and supported. These perceptions can strengthen their psychological connection to work and increase their willingness to invest energy and attention. Conversely, when safety procedures are inconsistent or management commitment to safety appears weak, workers may experience insecurity, stress, and lower motivation. Such conditions can reduce engagement and weaken work performance.

JD-R theory provides a strong explanation for this relationship. Job resources stimulate motivational processes, and engagement is one of the central motivational outcomes in the JD-R framework (Bakker et al., 2023; Demerouti et al., 2025). Safety climate can be interpreted as a job resource because it helps reduce uncertainty, protects workers from unnecessary risk, and communicates organizational care. Recent safety research in construction also supports the idea that safety climate can influence worker behaviour through engagement-related mechanisms (Meng et al., 2024).

Therefore, the following hypothesis is proposed:

H2: Occupational safety climate has a significant positive effect on employee engagement in UAE construction firms.

2.3 Employee Engagement and Employee Performance

Employee engagement has been widely associated with positive work outcomes. Engaged employees tend to show higher effort, stronger persistence, better concentration, and greater willingness to contribute to organizational goals. Under JD-R theory, engagement is a motivational state through which job resources are transformed into performance outcomes (Bakker et al., 2023; Bakker & Demerouti, 2024).

In construction, employee engagement is especially relevant because work is physically demanding, safety-sensitive, and often carried out under challenging environmental conditions. Heat exposure can reduce productivity among construction workers, while

physical fatigue can impair situational awareness and safety-related performance (Han et al., 2024; Ibrahim et al., 2023). In such contexts, engaged workers may be better able to maintain focus, adapt to changing demands, cooperate with others, and sustain quality performance.

Prior research also supports the link between engagement and multidimensional job performance. Reig Botella et al. (2024) showed that work engagement dimensions are related to different dimensions of job performance. This supports the argument that engagement is not simply a positive attitude but a performance-relevant psychological state. Based on this reasoning, the following hypothesis is proposed:

H3: Employee engagement has a significant positive effect on employee performance in UAE construction firms.

2.4 The Mediating Role of Employee Engagement

The relationship between occupational safety climate and employee performance may operate both directly and indirectly. A positive safety climate may directly improve performance by creating clearer procedures, stronger safety discipline, better coordination, and more predictable site practices. However, safety climate may also improve performance indirectly by strengthening employee engagement.

This mediation logic is consistent with JD-R theory. The theory proposes that job resources enhance engagement, and engagement then contributes to better work outcomes (Bakker et al., 2023; Bakker & Demerouti, 2024). Occupational safety climate can therefore be viewed as a contextual resource that increases employees' willingness and ability to invest themselves in their work. When workers feel that their organization prioritizes safety, they may become more energetic, dedicated, and absorbed. This engagement can then improve employee performance.

Recent construction safety research also supports this logic. Meng et al. (2024) found that personnel engagement mediates the influence of safety climate strength on safety behaviour among construction personnel. Although safety behaviour and employee performance are not identical, this finding supports the broader argument that engagement can transmit the effect of safety-related organizational perceptions into worker outcomes.

Therefore, the following hypothesis is proposed:

H4: Employee engagement mediates the relationship between occupational safety climate and employee performance in UAE construction firms.

3. The Conceptual Framework

The conceptual framework of this study is grounded in Job Demands–Resources (JD-R) theory, which explains how characteristics of the work environment influence employees' motivation, engagement, well-being, and performance. According to JD-R theory, job resources are aspects of the work environment that help employees achieve work-related goals, reduce the impact of job demands, and stimulate motivation and personal development (Bakker et al., 2023; Demerouti et al., 2025). Within this theoretical perspective, occupational

safety climate is conceptualised as an important organisational job resource because it reflects employees' perceptions of the extent to which safety is prioritised, supported, communicated, and reinforced within the workplace.

A positive occupational safety climate may contribute to employee performance in two ways. First, it may have a direct effect on employee performance by creating a work environment characterised by clear safety expectations, managerial support, effective communication, appropriate safety procedures, and confidence in organisational practices. Such an environment may enable employees to perform their duties more effectively and consistently.

Second, occupational safety climate may influence employee performance indirectly through employee engagement. From the JD-R perspective, supportive organisational resources can stimulate employees' motivational processes and encourage greater physical, cognitive, and emotional investment in their work. When employees perceive that their organisation genuinely prioritises their safety and well-being, they may be more likely to experience higher levels of engagement, commitment, energy, and involvement in their work. Greater employee engagement, in turn, is expected to contribute positively to employee performance.

Accordingly, employee engagement is positioned as the mediating mechanism through which occupational safety climate may be translated into enhanced employee performance. The framework therefore proposes that occupational safety climate influences employee performance both directly and indirectly through its effect on employee engagement.

Specifically, the conceptual model proposes three direct relationships and one indirect relationship. Occupational safety climate is expected to positively influence employee performance and employee engagement, while employee engagement is expected to positively influence employee performance. In addition, employee engagement is expected to mediate the relationship between occupational safety climate and employee performance.

In the proposed framework, occupational safety climate represents the independent variable, employee engagement represents the mediating variable, and employee performance represents the dependent variable. These relationships are illustrated in Figure 1.

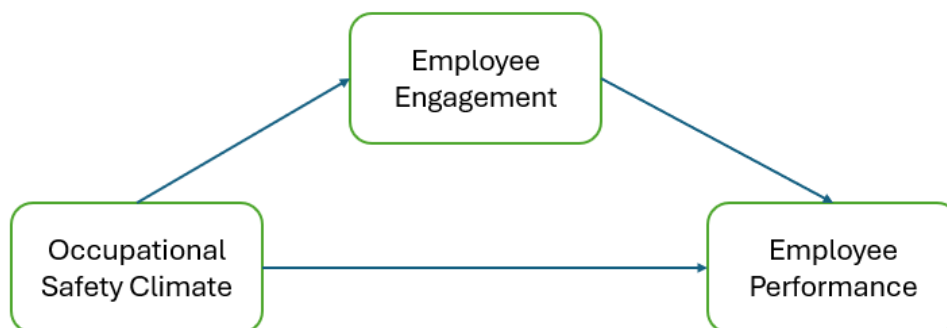


Figure 1. Conceptual Framework of the Study

4. Methodology

4.1 Research Design

This study adopted a quantitative cross-sectional research design. A quantitative design was suitable because the study aimed to test hypothesized relationships among latent constructs using statistical analysis (Creswell & Creswell, 2018; Saunders et al., 2019). A cross-sectional survey was appropriate because the study collected data at one point in time to examine relationships among occupational safety climate, employee engagement, and employee performance.

4.2 Population and Sample

The study focused on construction workers in registered construction firms in the UAE. The construction sector was selected because it is labour-intensive, safety-sensitive, and highly relevant to the UAE's development context. The sample included respondents who had direct experience of construction work conditions, safety climate, engagement, and performance.

After data screening and removal of outliers, 435 valid responses were retained for analysis. This sample size was adequate for PLS-SEM and consistent with recommendations for survey research and structural equation modelling (Hair et al., 2022; Memon et al., 2020). Sampling adequacy is important because PLS-SEM requires sufficient observations to estimate path relationships and assess the measurement and structural models reliably.

4.3 Measurement of Constructs

The study included three main constructs: occupational safety climate, employee engagement, and employee performance.

Occupational safety climate was measured as workers' perceptions of the extent to which safety is prioritized through organizational policies, communication, supervision, enforcement, and daily site practices. This conceptualization is consistent with safety climate research in construction, which emphasizes safety-related perceptions as a key organizational influence on worker behaviour (Xia et al., 2024; Castro et al., 2025).

Employee engagement was measured as a positive work-related psychological state characterized by vigour, dedication, and absorption. This approach follows the engagement measurement tradition developed by Schaufeli et al. (2006).

Employee performance was measured as work-related behaviour that contributes to task completion, work quality, adaptability, and broader organizational functioning. This follows the behavioural and multidimensional view of performance developed in prior work performance research (Campbell & Wiernik, 2015; Koopmans et al., 2011, 2013, 2014).

All constructs were measured using a structured questionnaire and Likert-scale responses. The use of structured survey measures was appropriate because the study examined perceptions and behavioural assessments across a relatively large sample.

4.4 Data Analysis

Data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). PLS-SEM was selected because it is appropriate for analysing complex models involving latent constructs, direct effects, and mediation effects (Hair et al., 2022). It is also widely used in construction management and organizational research where prediction and theory testing are important.

The analysis followed two main stages. First, the measurement model was assessed to establish reliability and validity. Second, the structural model was assessed to test the hypothesized relationships. The structural model assessment included path coefficients, t-values, p-values, coefficient of determination values, and mediation analysis. Bootstrapping was used to test the significance of the direct and indirect paths, following PLS-SEM recommendations (Hair et al., 2022). Discriminant validity was assessed using established criteria such as the HTMT approach where applicable (Henseler et al., 2015).

Because the study used survey data, common method bias was also considered. Common method bias can occur when data for all constructs are collected from the same respondents using the same method. Procedural and statistical attention to common method bias is recommended in behavioural research (Podsakoff et al., 2003; Kock et al., 2021).

5. Results

5.1 Measurement Model Assessment

Before examining the structural relationships, the measurement model was assessed to establish the reliability and validity of the three main constructs: occupational safety climate, employee engagement, and employee performance. The assessment included internal consistency reliability, convergent validity, and discriminant validity. Internal consistency reliability was evaluated using Cronbach's alpha and composite reliability, while convergent validity was assessed using average variance extracted. Discriminant validity was examined using both the Fornell-Larcker criterion and the Heterotrait-Monotrait ratio.

Table 1. Reliability and convergent validity

Construct	Cronbach's Alpha	Composite Reliability	AVE
Occupational Safety Climate	0.923	0.935	0.594
Employee Engagement	0.814	0.890	0.729
Employee Performance	0.860	0.914	0.781

Note. AVE = Average Variance Extracted.

As shown in Table 1, all constructs demonstrated satisfactory internal consistency reliability. Cronbach's alpha values ranged from 0.814 to 0.923, while composite reliability values ranged from 0.890 to 0.935. These values exceeded the recommended minimum threshold of 0.70, indicating that the items consistently measured their respective constructs. Convergent

validity was also established because all AVE values exceeded the recommended threshold of 0.50. The AVE values ranged from 0.594 to 0.781, showing that each construct explained an acceptable proportion of variance in its indicators.

Discriminant validity was first assessed using the Fornell-Larcker criterion. Under this criterion, the square root of the AVE for each construct should be greater than its correlations with other constructs.

Table 2. Fornell-Larcker criterion

Construct	OSC	EE	EP
OSC	0.771		
EE	0.725	0.854	
EP	0.732	0.743	0.884

Note. OSC = Occupational Safety Climate; EE = Employee Engagement; EP = Employee Performance. Diagonal values represent the square root of AVE, while off-diagonal values represent inter-construct correlations.

The results in Table 2 indicate that the square root of AVE for each construct was higher than its correlations with other constructs. The square root of AVE for occupational safety climate was 0.771, which was greater than its correlations with employee engagement and employee performance. Similarly, the square root of AVE for employee engagement was 0.854, and the square root of AVE for employee performance was 0.884. Therefore, the Fornell-Larcker results support discriminant validity among the three constructs.

The HTMT ratio was also used as an additional and more stringent assessment of discriminant validity.

Table 3. HTMT ratio

Construct	OSC	EE	EP
OSC	—		
EE	0.761	—	
EP	0.711	0.732	—

Note. OSC = Occupational Safety Climate; EE = Employee Engagement; EP = Employee Performance. HTMT = Heterotrait-Monotrait Ratio.

As shown in Table 3, the HTMT values ranged from 0.711 to 0.761. All values were below the conservative threshold of 0.85 and also below the more liberal threshold of 0.90. The highest HTMT value was 0.761 for the relationship between occupational safety climate and employee engagement. These results confirm that the three constructs were empirically distinct. Overall, the measurement model demonstrated satisfactory reliability, convergent validity, and discriminant validity, supporting its suitability for structural model assessment.

5.2 Structural Model Assessment

After confirming the reliability and validity of the measurement model, the structural model was assessed to test the hypothesized relationships among occupational safety climate, employee engagement, and employee performance. The assessment included collinearity analysis, path coefficient estimation, significance testing, and evaluation of the model's explanatory power. Bootstrapping was used to assess the statistical significance of the direct and indirect effects. Figure 2 presents the final structural model of the study.

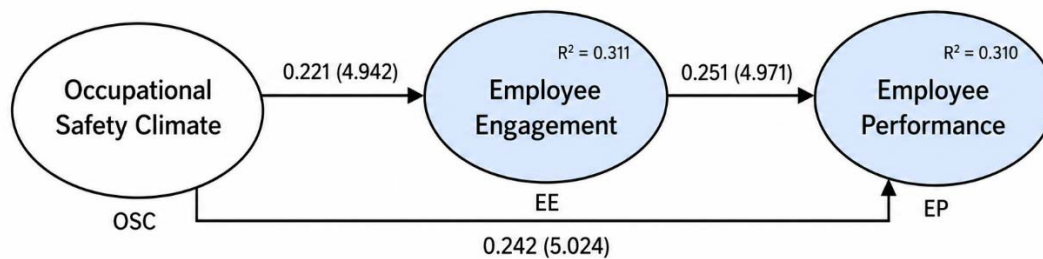


Figure 2. Final structural model

Before interpreting the path coefficients, collinearity among the predictor constructs was assessed using the variance inflation factor. The results are presented in Table 4.

Table 4. VIF results

Endogenous Construct	Predictor Construct	VIF
Employee Engagement	Occupational Safety Climate	1.208
Employee Performance	Occupational Safety Climate	1.279
Employee Performance	Employee Engagement	1.452

Note. VIF = Variance Inflation Factor.

As shown in Table 4, the VIF values ranged from 1.208 to 1.452. These values are below the recommended threshold of 3.3, indicating that collinearity was not a concern in the structural model. Therefore, the estimated path coefficients can be interpreted without serious multicollinearity concerns.

The structural model tested three direct relationships: occupational safety climate to employee performance, occupational safety climate to employee engagement, and employee engagement to employee performance. The results are presented in Table 5.

Table 5. Direct path coefficients

Hypothesis	Relationship	β	t-value	p-value	Result
H1	Occupational Safety Climate $\rightarrow$ Employee Performance	0.242	5.024	< 0.001	Supported
H2	Occupational Safety Climate $\rightarrow$ Employee Engagement	0.221	4.942	< 0.001	Supported
H3	Employee Engagement $\rightarrow$ Employee Performance	0.251	4.971	< 0.001	Supported

The results indicate that occupational safety climate had a significant positive effect on employee performance ($\beta = 0.242$, $t = 5.024$, $p < 0.001$). Therefore, H1 was supported. This finding suggests that stronger perceptions of safety climate are associated with higher employee performance.

Occupational safety climate also had a significant positive effect on employee engagement ($\beta = 0.221$, $t = 4.942$, $p < 0.001$). Therefore, H2 was supported. This result indicates that when employees perceive safety as being genuinely prioritized by the organization, they are more likely to demonstrate higher levels of engagement.

Employee engagement had a significant positive effect on employee performance ($\beta = 0.251$, $t = 4.971$, $p < 0.001$). Therefore, H3 was supported. This finding confirms that engaged employees are more likely to perform effectively in the construction work context.

The explanatory power of the model was assessed using the coefficient of determination. The R^2 value for employee engagement was 0.311, indicating that occupational safety climate explained 31.1% of the variance in employee engagement. The R^2 value for employee performance was 0.310, indicating that occupational safety climate and employee engagement jointly explained 31.0% of the variance in employee performance.

Table 6. Coefficient of determination

Endogenous Construct	R^2	Interpretation
Employee Engagement	0.311	Meaningful explanatory power
Employee Performance	0.310	Meaningful explanatory power

The R^2 values indicate that the model explains a meaningful proportion of variance in both employee engagement and employee performance. Although these values are not high, they are acceptable in behavioural and organizational research, where employee attitudes and performance are usually influenced by multiple individual, organizational, and contextual factors beyond a single model.

5.3 Mediation Analysis

The mediation analysis examined whether employee engagement mediates the relationship between occupational safety climate and employee performance. The indirect effect was assessed using bootstrapping. The result is presented in Table 7.

Table 7. Specific indirect effect

Hypothesis	Relationship	β	t-value	p-value	95% Confidence Interval	Result
H4	Occupational Safety Climate → Employee Engagement → Employee Performance	0.055	3.356	< 0.001	0.027 to 0.090	Supported

The indirect effect of occupational safety climate on employee performance through employee engagement was positive and statistically significant ($\beta = 0.055$, $t = 3.356$, $p < 0.001$). The 95% confidence interval ranged from 0.027 to 0.090 and did not include zero. Therefore, H4 was supported.

To determine the type of mediation, the direct, indirect, and total effects were examined. The results are shown in Table 8.

Table 8. Mediation status

Relationship	Direct Effect	Indirect Effect	Total Effect	Mediation Type
Occupational Safety Climate → Employee Performance	0.242	0.055	0.298	Partial mediation

The mediation results indicate that employee engagement partially mediates the relationship between occupational safety climate and employee performance. The direct effect of occupational safety climate on employee performance remained significant, while the indirect effect through employee engagement was also significant. Since both the direct and indirect effects were positive, the mediation can be interpreted as complementary partial mediation.

These findings show that occupational safety climate improves employee performance in two ways. First, it has a direct positive effect on employee performance. Second, it indirectly improves employee performance by strengthening employee engagement. This confirms that employee engagement is an important psychological mechanism through which occupational safety climate contributes to better performance in the UAE construction sector.

6. Discussion

This study examined the relationships among occupational safety climate, employee engagement, and employee performance in the UAE construction sector. The measurement model results first confirmed that the three constructs demonstrated acceptable reliability, convergent validity, and discriminant validity. The Fornell-Larcker and HTMT results showed that occupational safety climate, employee engagement, and employee performance

were empirically distinct constructs, while the VIF values indicated that collinearity was not a concern. Therefore, the structural model results can be interpreted with confidence.

The findings supported all proposed hypotheses. First, occupational safety climate had a significant positive effect on employee performance ($\beta = 0.242$, $t = 5.024$, $p < 0.001$). This result indicates that safety climate is not only relevant to accident prevention, safety compliance, or injury reduction, but also contributes to broader employee performance. In construction work, performance depends on discipline, concentration, cooperation, adaptability, and the ability to complete tasks under physically and organizationally demanding conditions. A positive safety climate can support these behaviours by creating clearer safety expectations, strengthening trust in management, reducing uncertainty, and encouraging more responsible work practices. This finding is consistent with previous safety climate research showing that safety-related perceptions influence employee behaviour and organizational outcomes (Abegaz et al., 2025; Xia et al., 2024).

Second, occupational safety climate had a significant positive effect on employee engagement ($\beta = 0.221$, $t = 4.942$, $p < 0.001$). This finding suggests that when employees perceive safety as genuinely prioritized by the organization, they are more likely to feel valued, protected, and psychologically connected to their work. A strong safety climate may therefore act as an organizational resource that encourages employees to invest more energy, dedication, and attention in their job roles. This result supports Job Demands–Resources theory, which argues that job resources enhance motivation and engagement by helping employees manage job demands and achieve work goals (Bakker et al., 2023; Bakker & Demerouti, 2024).

Third, employee engagement had a significant positive effect on employee performance ($\beta = 0.251$, $t = 4.971$, $p < 0.001$). This result confirms that engagement is an important motivational factor in construction-related work. Employees who are more engaged are more likely to remain focused, show persistence, respond effectively to work demands, and contribute positively to task execution and organizational functioning. This finding is consistent with previous studies showing that work engagement is linked to different dimensions of job performance, including task-related and contextual performance (Reig Botella et al., 2024).

Fourth, employee engagement significantly mediated the relationship between occupational safety climate and employee performance. The indirect effect was positive and significant ($\beta = 0.055$, $t = 3.356$, $p < 0.001$), and the confidence interval did not include zero. This finding shows that occupational safety climate improves employee performance partly by strengthening employee engagement. In other words, a positive safety climate does not only influence performance through operational or procedural mechanisms; it also works through a psychological pathway. When employees perceive that safety is taken seriously, they are more likely to become engaged, and this engagement then contributes to better performance.

The mediation result is particularly important because it confirms employee engagement as an explanatory mechanism linking safety climate to performance. However, the mediation was partial rather than full. The direct effect of occupational safety climate on employee

performance remained significant even after employee engagement was included in the model. This means that engagement explains part of the relationship, but other mechanisms may also be involved. For example, safety climate may also improve performance through clearer procedures, stronger supervisor-worker trust, reduced anxiety, better coordination, stronger safety discipline, or improved communication. This pattern is consistent with JD-R theory, which allows job resources to influence performance both directly and indirectly through motivational states such as engagement (Bakker et al., 2023; Demerouti et al., 2025).

The explanatory power of the model also deserves attention. Occupational safety climate explained 31.1% of the variance in employee engagement, while occupational safety climate and employee engagement jointly explained 31.0% of the variance in employee performance. These R^2 values indicate meaningful explanatory power, especially in behavioural and organizational research where employee attitudes and performance are shaped by many individual, organizational, and contextual factors. The results therefore suggest that occupational safety climate is an important but not exclusive predictor of engagement and performance in the construction sector.

Overall, the findings broaden the understanding of occupational safety climate in construction management research. They show that occupational safety climate should not be treated only as a safety management or compliance issue. Instead, it should be understood as a performance-related organizational condition that can improve employee performance directly and indirectly through employee engagement. This distinction is important for the present paper because it separates occupational safety climate from broader working conditions and shows that safety climate itself has a meaningful role in shaping engagement and performance in the UAE construction context.

7. Theoretical Contributions

This study makes several theoretical contributions to construction management, safety climate, employee engagement, and performance literature. First, the study extends Job Demands–Resources theory to the UAE construction sector by showing that occupational safety climate can function as a contextual job resource. The findings indicate that when safety is perceived as genuinely prioritized through management commitment, communication, supervision, and consistent site practices, it can strengthen employee engagement and improve employee performance. This supports the motivational logic of JD-R theory, which explains that job resources enhance engagement and contribute to positive work outcomes.

Second, the study contributes to occupational safety climate literature by extending the role of safety climate beyond traditional safety outcomes. Much previous research has examined safety climate mainly in relation to safety behaviour, safety participation, accident prevention, and injury reduction. This study adds that occupational safety climate is also relevant to broader employee performance. Therefore, safety climate should not be understood only as a safety compliance construct, but also as a performance-related organizational condition.

Third, the study contributes to employee engagement literature by confirming engagement as

a mediating mechanism between occupational safety climate and employee performance. The mediation results showed that employee engagement partially mediated the relationship between safety climate and performance. This indicates that engagement is not only an outcome of a supportive safety environment, but also a psychological pathway through which safety climate contributes to better performance.

Fourth, the study contributes to employee performance literature by applying a behavioural and multidimensional understanding of performance in the construction context. The findings suggest that employee performance in construction is shaped not only by technical skills or output requirements, but also by organizational perceptions and motivational states. This is important because construction performance depends on focus, discipline, cooperation, adaptability, and sustained effort under demanding site conditions.

Finally, the study adds evidence from the UAE construction sector, a context characterized by labour intensity, safety sensitivity, migrant labour, and complex site-based working conditions. By testing the safety climate–engagement–performance relationship in this context, the study provides context-specific evidence for the relevance of JD-R theory in high-risk construction environments.

8. Practical Implications

8.1 Implications for Construction Firms

The findings suggest that construction firms in the UAE should treat occupational safety climate as a strategic performance resource. Safety should not be managed only to meet regulatory requirements or reduce accidents. It should also be managed as part of the broader organizational system that shapes employee engagement and performance.

Construction firms can strengthen safety climate by ensuring visible management commitment to safety, improving safety communication, applying safety procedures consistently, and ensuring that supervisors demonstrate genuine concern for worker protection. When employees perceive that safety is taken seriously, they are more likely to feel supported, valued, and engaged. This can contribute to better task performance, cooperation, adaptability, and overall work effectiveness.

8.2 Implications for Safety Management

The results show that safety management and performance management should not be treated as separate issues. A positive safety climate may improve performance by creating clearer procedures, reducing uncertainty, strengthening safety discipline, and supporting more focused work behaviour. Therefore, safety practices should be credible, consistent, and integrated into daily site operations rather than treated as symbolic compliance activities.

Safety managers should regularly monitor employees' perceptions of safety climate through surveys, toolbox meetings, safety discussions, and supervisor feedback. This can help identify whether safety policies are actually experienced by workers as genuine and consistent at site level.

8.3 Implications for HR and Leadership

The mediation result shows that employee engagement is an important mechanism through which occupational safety climate improves employee performance. Therefore, HR managers, project managers, and site leaders should develop practices that strengthen engagement alongside safety management.

These practices may include supportive supervision, fair communication, recognition of safe and effective work, opportunities for employee voice, and timely feedback. Frontline supervisors are especially important because they translate organizational safety policies into daily work practices. When supervisors communicate clearly, enforce rules fairly, and show concern for workers, they can strengthen both safety climate and engagement.

8.4 Implications for Policy Makers

For policy makers and regulators, the findings suggest that construction safety policy should be evaluated not only by the existence of regulations but also by how safety is experienced at site level. Regulations are important, but their effectiveness depends on whether firms translate them into consistent daily practices.

In the UAE construction sector, where workers may face heat exposure, physical demands, multilingual work environments, and operational pressure, monitoring safety climate can provide useful information about the quality of safety implementation. Encouraging firms to assess and improve safety climate may help enhance both worker protection and workforce performance.

9. Limitations and Future Research

This study has several limitations that should be considered when interpreting the findings.

First, the study used a cross-sectional research design. Data were collected at one point in time, which limits the ability to make strong causal claims. Although the hypothesized relationships were supported statistically, future research should use longitudinal designs to examine how changes in occupational safety climate influence employee engagement and employee performance over time.

Second, the study relied on survey-based perceptual data. This approach was appropriate because occupational safety climate and employee engagement are perception-based constructs. However, collecting data from the same respondents using the same questionnaire may raise common method bias concerns. Future studies could reduce this limitation by using multiple data sources, such as worker surveys, supervisor ratings, safety records, absenteeism data, productivity indicators, or project performance records.

Third, the study focused on the UAE construction sector. The UAE construction context has specific characteristics, including migrant labour, multilingual teams, heat exposure, site-based work pressure, and strong regulatory attention to worker protection. Therefore, the findings should not be generalized automatically to other countries, sectors, or high-risk industries. Future studies could compare similar models across Gulf countries, other

construction markets, or different safety-sensitive sectors.

Fourth, the model explained a meaningful but moderate proportion of variance in employee engagement and employee performance. This indicates that occupational safety climate and employee engagement are important predictors, but they are not the only factors influencing performance. Future research could include additional variables such as workload, fatigue, leadership style, supervisor support, organizational justice, psychological safety, safety training, reward systems, and team coordination.

Fifth, the study examined employee engagement as the mediating mechanism between occupational safety climate and employee performance. Although the mediation result was significant, the partial mediation finding suggests that other mechanisms may also explain this relationship. Future studies could examine trust in management, psychological safety, burnout, social exchange, perceived organizational support, or safety motivation as additional mediators.

Finally, future research may also examine possible moderators. For example, the effect of occupational safety climate on engagement and performance may vary depending on work experience, migrant status, project type, safety training, leadership quality, or supervisor-worker relationships. Testing these moderators would provide a more detailed understanding of when and for whom safety climate has the strongest effect.

10. Conclusion

This study examined the relationship between occupational safety climate, employee engagement, and employee performance in the UAE construction sector. Drawing on Job Demands–Resources theory, the study positioned occupational safety climate as an organizational resource that can influence employee performance both directly and indirectly through employee engagement. The findings supported all proposed hypotheses and confirmed that occupational safety climate has a significant positive effect on both employee engagement and employee performance. Employee engagement also had a significant positive effect on employee performance, and the mediation analysis confirmed that engagement partially mediates the relationship between occupational safety climate and performance.

The results show that safety climate should not be viewed only as a compliance requirement or accident-prevention mechanism. Instead, it should be understood as a performance-related organizational condition. When employees perceive that safety is genuinely prioritized through management commitment, communication, supervision, enforcement, and daily site practices, they are more likely to feel supported and engaged. This engagement then contributes to better performance. Therefore, occupational safety climate improves employee performance through both operational and psychological pathways.

The study contributes to construction management and organizational behaviour literature by extending the role of occupational safety climate beyond traditional safety outcomes. Previous studies have often focused on safety behaviour, injuries, and compliance, whereas this study demonstrates that safety climate is also relevant to broader employee performance.

The study also contributes to Job Demands–Resources theory by showing that safety climate can operate as a contextual job resource that strengthens engagement and performance in a high-risk construction environment.

From a practical perspective, the findings suggest that construction firms in the UAE should treat safety climate as part of their performance management strategy. Managers should strengthen visible safety commitment, improve safety communication, enforce procedures consistently, and create a work environment where employees feel protected and valued. These practices may not only reduce safety risks but also improve engagement and performance.

Although the study provides useful evidence, its findings should be interpreted in light of its cross-sectional design and reliance on survey-based data. Future research could use longitudinal designs, multiple data sources, or comparative studies across different construction contexts to further examine how safety climate influences engagement and performance over time. Overall, the study confirms that a strong occupational safety climate is an important organizational resource for enhancing employee engagement and employee performance in the UAE construction sector.

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