

The Effect of AI Infrastructure Capability on Employee Performance: The Mediating Role of Employee Empowerment in the UAE Construction Industry

Aldehaim Nassib Suhail Yatba Alameri (Corresponding author)

Faculty of Technology Management and Business

Universiti Tun Hussein Onn Malaysia,

86400 Parit Raja, Johor, Malaysia

E-mail: hp200100@student.uthm.edu.my

Hamidun Bin Mohd Noh

Construction Management Department

Faculty of Technology and Business Management

Universiti Tun Hussein Onn Malaysia,

86400 Parit Raja, Johor, Malaysia

E-mail: hamidun@uthm.edu.my

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Abstract

Artificial Intelligence (AI) is increasingly recognized as a transformative force in enhancing employee performance and organizational effectiveness. However, its impact remains contingent on the integration of complementary organizational capabilities rather than standalone technological adoption. Therefore, this study examines the relationship between AI infrastructure capability and employee performance in the UAE construction industry, while investigating the mediating role of employee empowerment. A quantitative survey design was employed, with 350 valid responses collected from project managers, construction managers, site engineers, and architects across construction companies in Abu

Dhabi, Dubai, and Sharjah. Data was analyzed using the Statistical Package for the Social Sciences (SPSS) and Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings indicate a significant relationship between AI infrastructure capability and employee performance, while employee empowerment has a significant positive relationship with employee performance. Furthermore, employee empowerment significantly mediates the relationship between AI infrastructure capability and employee performance. The study extends the Resource-Based View and Social Exchange Theory by demonstrating the importance of employee empowerment in translating AI capability into improved employee performance. Practically, the findings suggest that construction organizations should complement AI investments with employee empowerment initiatives, including participation in decision-making, communication, trust, and motivation, to maximize the benefits of AI adoption and improve employee performance.

Keywords: AI infrastructure, employee empowerment, employee performance, construction industry, UAE

1. Introduction

The rapid advancement of Artificial Intelligence (AI) has significantly transformed organizational operations across various industries, positioning it as a key driver of innovation, efficiency, and competitive advantage (Chen, 2023). AI technologies enable organizations to automate processes, enhance decision-making, and improve overall performance by facilitating faster and more informed decisions (Wijayati & Rahman, 2021; Hassan & Abdulla, 2021). In recent years, organizations have increasingly adopted AI to optimize business processes, increase productivity, and support strategic decision-making (Luhana, 2023; Khan et al., 2024). Moreover, AI has been recognized for its potential to strengthen organizational capabilities and foster innovation when effectively integrated with employees and organizational practices (Olan et al., 2024; Bibi et al., 2025). In addition, AI contributes to improved operational efficiency by automating routine tasks and supporting employees in managing complex work activities more effectively (Georgieff & Hyee, 2022; Luhana et al., 2023). As a result, AI adoption has been associated with increased innovation, enhanced productivity, and improved organizational competitiveness across various sectors (Filippucci et al., 2024; Shen & Zhang, 2024).

AI capability refers to an organization's ability to effectively deploy, manage, and utilize AI technologies to support both organizational outcomes and employee performance (Mikalef et al., 2023). Thus, technological advancement has become a critical factor shaping employee work processes and performance (Leela, 2023). When effectively integrated with organizational resources, technology can improve efficiency, streamline operations, and enhance productivity (Cheng & Khan, 2021). Nevertheless, the successful adoption of advanced technologies requires continuous employee learning, adaptability, and skill development (Setyawan, 2021; Ghanem, 2023). More specifically, AI represents a more advanced form of technological capability that enables organizations to analyze large volumes of data, automate decision-making processes, and improve operational efficiency (Havidz, 2022). Despite its potential, the effective implementation of AI depends not only on technological infrastructure but also on human capabilities, including employees' skills, knowledge, and adaptability. In addition, challenges such as lack of trust, resistance to change, and concerns about job displacement may limit the effective utilization of AI in organizational settings (Ghillani, 2022).

Moreover, employee empowerment has emerged as a critical organizational mechanism that enhances employees' ability to perform effectively in dynamic and technology-driven environments (Meyerson & Dewettinck, 2012). It refers to the process of granting employees greater autonomy, access to relevant information, and participation in decision-making processes that affect their work (Ahmad, 2017). Empowerment enables employees to take initiative, exercise judgment, and develop a sense of ownership over their tasks, which contributes to improved motivation and performance outcomes. In technology-driven contexts, empowered employees are more likely to utilize advanced tools, adapt to innovation, and contribute creative solutions to organizational challenges (Al-ardhi et al., 2025). Furthermore, empowerment fosters collaboration, accountability, and responsiveness, which are essential for achieving high performance in complex work environments (Riak & Wanyama, 2025). Within

the construction industry, where projects require coordination, problem-solving, and timely decision-making, employee empowerment plays a vital role in enhancing efficiency and professional performance (Karakhan et al., 2024).

Furthermore, recent studies emphasize that employee empowerment not only improves individual performance but also enhances organizational adaptability in rapidly changing and technology-driven environments (Farida, 2017; Martinez, et al., 2025). Empowered employees tend to demonstrate higher levels of engagement, commitment, and job satisfaction, which positively influence their overall work performance (Afram et al., 2022; Modise, 2023). In addition, empowerment contributes to the development of employees' problem-solving abilities and decision-making skills, enabling them to respond more effectively to complex and uncertain work conditions (Alshemmari, 2023). This is particularly important in environments where technological innovation, such as AI, requires employees to continuously learn and adapt. Moreover, organizations that promote empowerment create a culture of trust and participation, which encourages employees to actively contribute ideas and support organizational goals (Al-sabi et al., 2023). Empirical evidence also indicates that empowered employees are more capable of leveraging technological tools and innovations to enhance productivity and performance outcomes (Tretiakov et al., 2023; Ndokuba et al., 2025). Therefore, employee empowerment is expected to play an important role in enhancing employee performance. Accordingly, this study examines the relationship between AI Infrastructure, employee empowerment and employee performance in the context of the UAE construction industry.

2. Problem Statement

The government of the UAE has made substantial investments in AI and actively promotes the adoption of advanced technologies across both public and private sector organizations through the UAE National Strategy for Artificial Intelligence 2031 (Alshamsi et al., 2024). This national initiative aims to position the UAE as a global leader in AI by integrating intelligent systems across key sectors, including government services, healthcare, transportation, energy, infrastructure, and construction (Gharama et al., 2020; Ghanem, 2023; Akhoirshieda et al., 2024). Therefore, AI has increasingly been utilized to enhance service delivery, improve operational efficiency, support smart city development, and strengthen organizational decision-making processes (Altaffaq, 2021; Singh & Shaurya, 2021).

Despite these significant investments, many organizations continue to experience difficulties in translating AI adoption into improved organizational performance due to inadequate organizational readiness and limited AI capabilities (Habbal et al., 2024). Moreover, although managers increasingly rely on AI to support decision-making, their ability to effectively adopt and utilize AI technologies remains inconsistent (Alasmri & Basahel, 2022). Similarly, Almutawa and Dilawer, (2023) reported that workforce readiness, lack of trust in AI systems, and insufficient organizational support continue to hinder the effective utilization of AI, thereby limiting its contribution to organizational performance (Zumrah et al., 2024).

Within the construction sector, digital transformation has become a strategic priority in the UAE, as reflected by initiatives such as the Dubai Building Information Modeling (BIM)

Mandate, the Dubai Building Code (2021), and the AI Safat Green Building System (2023). Nevertheless, the widespread implementation of advanced digital technologies, including AI and other Industry 4.0 technologies, remains limited across the construction industry (Alkhafaji, 2025). Although AI has considerable potential to improve project planning, risk prediction, defect detection, and operational efficiency, its implementation continues to face organizational and capability-related challenges (Alnuaimi, 2022). These challenges are reflected in the relatively unsatisfactory level of employee performance within the UAE construction industry, where the anticipated improvements in productivity and operational efficiency have not been fully realized (Muath & Alex, 2025). In addition, limited employee involvement in decision-making processes reduces employees' confidence, initiative, and willingness to adopt AI technologies effectively (Mawed et al., 2026). Although previous studies have identified AI capability as important determinants of employee performance (Aly, 2020; Wijayati et al., 2022; Leela, 2023; Chen & Kim, 2023; Bibi et al., 2025); empirical evidence within the UAE construction industry remains limited. Therefore, there is a need to further investigate how AI capability influences employee performance and the roles of employee empowerment in facilitating this relationship within the UAE construction context.

3. Empirical Evidence

3.1 The Relationship Between AI Infrastructure Capability and Employee Performance

Artificial Intelligence (AI) infrastructure capability has become a strategic organizational resource that enhances employee performance by improving operational efficiency, decision-making, and task execution (Shen & Zhang, 2024). AI-enabled systems automate repetitive tasks, reduce human error, and allow employees to focus on more complex and value-adding activities (Thamik & Wu, 2022). For example, Tong (2021) demonstrated that AI-based performance feedback improves the accuracy, consistency, and relevance of employee evaluations, leading to higher productivity. Similarly, Yuqing (2022) found that AI applications enhance individual task performance while promoting collaboration and innovation within work teams.

Moreover, AI infrastructure contributes to improved task clarity, decision quality, and employee effectiveness (Mofleh et al., 2024; Olan et al., 2024). Evidence from Indonesia, India, Pakistan, and Ethiopia consistently demonstrates that AI technologies enhance productivity, work quality, task accuracy, and employee engagement (Wijayati et al., 2022; Fitri et al., 2023; Gayathri et al., 2025; Gayathri et al., 2025; Kassa, 2025). Within the UAE context, empirical evidence remains relatively limited. Nevertheless, Zumrah et al. (2024) reported a significant positive relationship between AI and employee performance, suggesting that AI infrastructure capability contributes to improved employee outcomes in UAE organizations. Although these findings provide important support for the role of AI infrastructure, most previous studies have examined AI adoption or AI utilization rather than AI infrastructure capability as a distinct organizational capability. Accordingly, the following hypothesis is proposed:

H1: There is a significant relationship between AI Infrastructure Capability and Employee Performance.

3.2 The Relationship Between Employee Empowerment and Employee Performance

Prior research indicates that when Human Resource Management practices are effectively aligned with organizational strategies, they contribute to the development of employee capabilities and overall organizational effectiveness (Choi et al., 2016; Yin et al., 2019; Rizi et al., 2024). Further empirical evidence consistently supports the positive relationship between employee empowerment and employee performance across different organizational and national contexts. For example, Pradanna (2022) found that employee empowerment, together with information technology and organizational culture, significantly enhances employee performance in Indonesia. Similarly, Alshemmari (2023) demonstrated that empowerment dimensions, including delegation, trust, communication, and motivation, significantly improve employee performance efficiency within Kuwaiti organizations.

More recent studies further reinforce these findings. Al Zeer and Ajouz (2023) reported that employee empowerment and employee engagement are significant predictors of employee performance in Palestine, while Riak and Wanyama (2025) confirmed that empowerment initiatives, such as employee participation in decision-making and access to organizational resources, substantially improve employee performance in South Sudan. Although Darwish and Shafqat (2023) in Sweden examined employee motivation, their findings provide indirect support for empowerment theory by demonstrating that intrinsic, extrinsic, and developmental factors commonly associated with empowerment practices contribute significantly to employee performance. Accordingly, the following hypothesis is proposed:

H2: There is a significant relationship between Employee Empowerment and Employee Performance.

3.3 Mediating Role of Employee Empowerment on the Relationship Between AI Infrastructure Capability and Employee Performance

An effective human resources system creates a distinctive level and sustained competitive position because of its vital role in empowering employees to achieve predetermined organizational objectives and enhancing overall organizational performance (Rubel & Kee, 2013; Sattar et al., 2015). Employee performance is determined by the level of employee commitment toward the organization; an empowered worker is aware of the business environment and works with others to improve overall performance for the benefit of the organization (Afram et al., 2022). Employee empowerment is an effective managerial tool that brings organizational benefits and can be empowered and promoted by the top management to derive the desired benefits of engaged employees (Murray & Holmes, 2021).

Empirical evidence supports the mediating role of employee empowerment in strengthening organizational outcomes. For example, Al Zeer et al. (2023) confirmed that employee empowerment, together with employee engagement, mediates the relationship between organizational factors and employee performance, highlighting empowerment as an important mechanism for improving employee productivity. Similarly, Mahmoud Ali Salahat (2021) demonstrated that employee empowerment mediates the relationship between transformational and transactional leadership styles and customer responsiveness agility,

indicating that empowerment facilitates the translation of organizational resources into improved performance outcomes. In contrast, Ridwan (2023) found that employee empowerment did not mediate the relationship between transformational leadership and employee performance, suggesting that the effectiveness of empowerment may vary across organizational contexts and may depend on other motivational mechanisms. Despite these mixed findings, the majority of empirical evidence suggests that employee empowerment serves as an important mediating mechanism through which organizational resources and managerial practices influence employee outcomes. Accordingly, the following hypothesis is proposed:

H3: Employee Empowerment mediates the relationship between AI Infrastructure Capability and Employee Performance.

4. Research Framework

The proposed research framework integrates the theoretical foundations and empirical evidence presented in the literature to examine the direct and indirect relationships among the study variables. Specifically, the framework proposes that AI infrastructure capability influences employee performance both directly and indirectly through the mediating roles of employee empowerment within the UAE construction industry. Figure 1 illustrates the proposed research framework of the study.

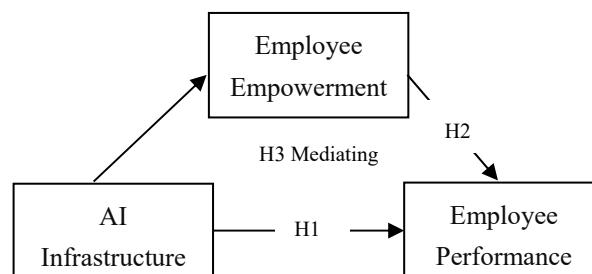


Figure 1. Research framework

This study is underpinned by two complementary theories, namely the Resource-Based View (RBV) and Social Exchange Theory (SET), which collectively explain the relationships between AI capability, employee empowerment, and employee performance in the UAE construction industry. RBV provides the theoretical foundation by conceptualizing AI infrastructure capability as a valuable organizational resource that enhances employee performance (Barney, 1991). According to RBV, organizations that effectively utilize valuable internal resources and capabilities are more likely to achieve superior performance and sustain a competitive advantage. Meanwhile, SET explains how organizational investments in AI capability are translated into improved employee performance through reciprocal relationships, whereby employee empowerment encourages employees to respond with greater commitment, engagement, and performance (Wen et al., 2019). Thus, these

theories provide a comprehensive theoretical foundation for explaining both the direct effect of AI capability on employee performance and the indirect effect through employee empowerment.

5. Research Methodology

This study employed a quantitative, cross-sectional survey design to examine the effects of AI infrastructure on employee performance and the mediating roles of employee empowerment in the UAE construction industry. Data was collected from employees of construction companies in the UAE using a structured questionnaire. AI infrastructure capability comprises AI technology infrastructure and system integration capability, reflecting the availability and integration of AI systems within organizational processes (Davenport & Ronanki, 2018; Mikalef & Gupta, 2021). Measurement items for all constructs were adapted from validated scales reported in prior studies. For AI infrastructure 14 items were adapted from Tong (2021), Mikalef and Gupta (2021), and Bagram et al. (2022).

Moreover, employee empowerment reflects employees' level of involvement, confidence, and capacity to contribute effectively to organizational outcomes, particularly in AI-enabled work environments. Employee empowerment is operationalized through four key dimensions, which are engagement, trust, communication, and motivation, which reflect employees' involvement in work activities, confidence in organizational support, access to relevant information, and willingness to contribute to organizational goals (Alshemmari, 2023). A total of measurement items were adapted from previously validated scales of Alshemmari (2023); Ndokuba et al. (2025). While 12 measurement items were adapted from previously validated scales Pradhan (2018); Pazetto et al. (2022); Alshemmari (2023).

The proposed research model was analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM), which is appropriate for simultaneously assessing the measurement model and examining complex direct and mediating relationships among latent constructs (Hair et al., 2022). PLS-SEM was selected because of its suitability for prediction-oriented research and its ability to estimate models involving multiple latent constructs and structural relationships. The initial sample size target was determined using the formula for an unknown population proposed by Charan (2013), with an additional 10% allowance for potential non-response. Based on this calculation, a target sample size of 423 respondents was established for the data collection process. However, after data collection and screening, 350 valid and usable responses were obtained. Although the achieved sample was lower than the initial target, it was considered adequate for the PLS-SEM analysis. Based on the 10-times rule, the minimum sample size is determined by ten times the maximum number of structural paths directed at any endogenous construct in the model (Hair et al., 2022). In the present study, the maximum number of structural paths directed towards a single endogenous construct is two, resulting in a minimum requirement of 20 respondents. The 350 valid responses therefore substantially exceed this minimum threshold and provide an adequate sample for estimating the proposed structural model (Hair et al., 2022).

6. Measurement Model Results

Convergent validity and internal consistency reliability were assessed using Cronbach's alpha, composite reliability (CR), and Average Variance Extracted (AVE), following the recommendations of Hair et al. (2021). Cronbach's alpha and composite reliability values greater than 0.70 indicate satisfactory reliability, while AVE values of at least 0.50 demonstrate adequate convergent validity. The results of the reliability and validity assessment are presented in Table 1.

Table 1. Constructs reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AI Infrastructure Capability	0.958	0.960	0.963	0.649
System Integration Capability	0.946	0.947	0.956	0.757
Technology Infrastructure	0.915	0.914	0.932	0.663
Employee Empowerment	0.905	0.920	0.917	0.529
Communication	0.878	0.930	0.898	0.598
Engagement	0.748	0.764	0.828	0.550
Motivation	0.933	0.945	0.947	0.748
Trust	0.912	0.916	0.934	0.705
Employee Performance	0.906	0.911	0.920	0.594

Table 1 indicates that all constructs demonstrate satisfactory reliability and convergent validity. Cronbach's alpha values range from 0.748 to 0.958, exceeding the recommended threshold of 0.70, thereby confirming good internal consistency. Similarly, composite reliability values range from 0.828 to 0.963, indicating that the measurement items reliably represent their respective constructs (Hair et al., 2019).

Regarding convergent validity, all constructs achieved AVE values above the recommended threshold of 0.50, ranging from 0.529 to 0.757. These findings indicate that each construct explains more than half of the variance in its measurement indicators (Lutfi, 2023). Thus, the results confirm that the measurement model demonstrates satisfactory internal consistency reliability and convergent validity, supporting its suitability for subsequent structural model analysis (Hair et al., 2022). Figure 2 presents the final measurement model after the removal of indicators with low factor loadings.

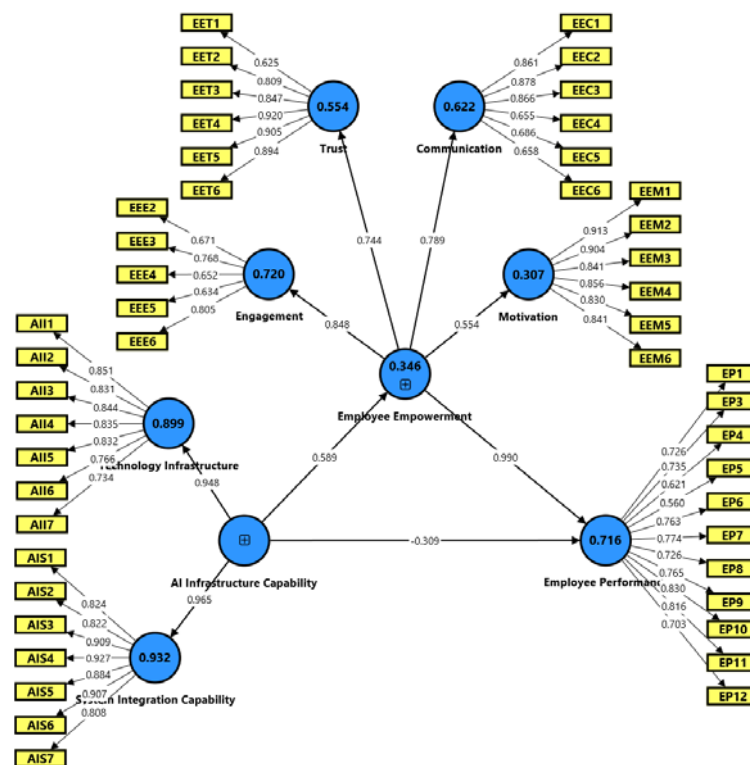


Figure 2. Measurement model

During the measurement model assessment, two indicators (EEE1 and EP2) were removed due to low factor loadings. Their removal improved the reliability and convergent validity of the constructs. The final measurement model satisfied the recommended validity and reliability criteria (Azamela et al., 2022).

6.1 Discriminant Validity

Discriminant validity was assessed using the Heterotrait–Monotrait (HTMT) ratio, which is widely recommended as a robust criterion for evaluating discriminant validity in PLS-SEM (Hair et al., 2019). HTMT values below 0.85 indicate that the constructs are empirically distinct and adequately measure different concepts (Benitez et al., 2020). As presented in Table 2, all HTMT values were below the recommended threshold of 0.85, demonstrating satisfactory discriminant validity. These findings confirm that the study constructs are sufficiently distinct and suitable for subsequent structural model analysis.

Table 2. Heterotrait-Monotrait Ratio (HTMT)

	EEC	EP	EEE	EEM	AIS	ATI	AIT	EET
Communication								
Employee Performance	0.483	0.895						
Engagement	0.575	0.572	0.835					
Motivation	0.208	0.682	0.796	0.676				
System Integration Capability	0.462	0.641	0.337	0.731	0.081			
Technology Infrastructure	0.357	0.525	0.253	0.601	0.069	0.892		
Trust	0.530	0.786	0.499	0.696	0.066	0.719	0.605	

Note. EEC = Communication; EP = Employee Performance; EEE = Engagement; EEM = Motivation; AIS = System Integration Capability; ATI = Technology Infrastructure; AIT = Technology Infrastructure; EET = Trust.

Table 2 shows that all HTMT values are below the recommended threshold of 0.85, ranging from 0.066 to 0.835. These results indicate that each construct is empirically distinct from the others, thereby confirming satisfactory discriminant validity (Hair et al., 2022). Therefore, the measurement model satisfies the recommended discriminant validity criterion, supporting the use of the constructs in the subsequent structural model assessment.

7. Structural Model Assessment

Following the validation of the measurement model, the structural model was assessed to examine the proposed direct and mediating relationships among the study constructs using the bootstrapping procedure in PLS-SEM (Hair et al., 2022). The significance of the hypothesized relationships was evaluated based on the standardized path coefficients (β), *t*-statistics, and *p*-values. Standardized path coefficients (β) indicate the strength and direction of the relationships, with values closer to ± 1 representing stronger effects. Following Hair et al. (2022), hypotheses are considered statistically significant when the *t*-value exceeds 1.96 and the *p*-value is less than 0.05. The results of the direct effects are presented in Table 3.

Table 3. Significance test for the structural model path coefficient, *t*-statistics, and *p*-values

Direct hypothesis	Std β	Std Error	<i>t</i> -statistic	<i>P</i> values	Results
AI Infrastructure Capability -> Employee Performance	-0.318	0.050	6.410	0.000	Significant
Employee Empowerment -> Employee Performance	0.985	0.031	31.788	0.000	Significant

Table 3 presents the results of direct hypothesis testing. The findings indicate that AI Infrastructure capability has a statistically significant relationship with employee performance ($\beta = -0.318$, $t = 6.410$, $p < 0.001$). Since the *p*-value is below the 0.05 significance level, the relationship is statistically significant, and therefore H1 is supported.

Similarly, employee empowerment has a statistically significant relationship with employee performance ($\beta = 0.985$, $t = 31.788$, $p < 0.001$). The p -value is below the 0.05 significance level, indicating a statistically significant relationship. Therefore, H2 is supported.

To further examine the indirect relationship, the mediating effect of employee empowerment between AI Infrastructure Capability and Employee Performance was assessed using the bootstrapping procedure. The mediation analysis results are presented in Table 4.

Table 4. Mediating results

Mediating hypothesis	Std β	Std Error	<i>t</i> -statistic	P values	Results
AI Infrastructure Capability -> Employee Empowerment -> Employee Performance	0.578	0.065	8.829	0.000	Mediated

Table 4 shows that Employee Empowerment significantly mediates the relationship between AI Infrastructure Capability and Employee Performance ($\beta = 0.578$, $t = 8.829$, $p < 0.001$), supporting H3. This finding suggests that although AI infrastructure capability has a negative direct effect on employee performance, its indirect effect becomes positive when employees are empowered. Therefore, employee empowerment serves as an important mechanism that enables organizations to translate AI infrastructure capability into improved employee performance.

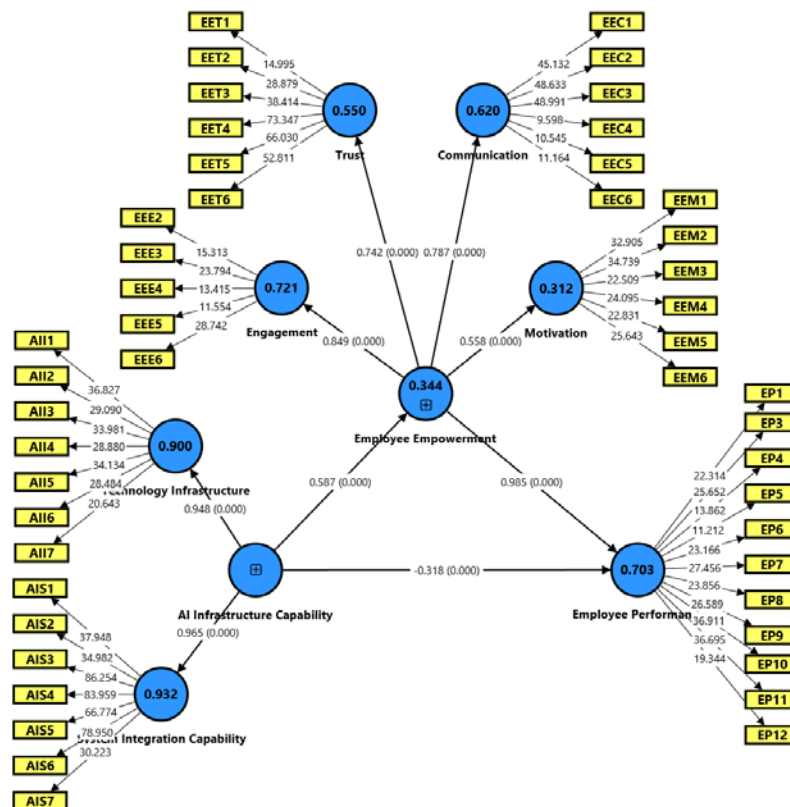


Figure 3. Structural model

Figure 3 illustrates the final structural model. The standardized path coefficients (β) show the direction and strength of the hypothesized relationships, whereas the R^2 values indicate the model's explanatory power. These results provide empirical support for testing the proposed hypotheses and evaluating the predictive capability of the research model.

8. Implications of the Study

This study provides both theoretical and practical implications for understanding the relationship between AI infrastructure capability, employee empowerment, and employee performance in the UAE construction industry. From a theoretical perspective, the findings provide context-specific empirical evidence that can be interpreted through the Resource-Based View (RBV) and Social Exchange Theory (SET). Rather than claiming to extend these established theories, the study demonstrates their relevance in an underexplored construction context by showing that technological capability and employee-related factors are important considerations in understanding employee performance. In particular, the findings highlight the role of employee empowerment as a mechanism through which AI infrastructure capability is associated with employee performance. This provides additional empirical evidence from the UAE construction industry, where the integration of AI capabilities with employee-related organizational practices remains relatively underexplored.

From a practical perspective, the findings suggest that construction organizations should not

rely solely on investment in AI infrastructure to improve employee performance. Instead, AI investments should be accompanied by employee empowerment initiatives that enable employees to effectively engage with and utilize AI technologies. Organizations should therefore strengthen AI infrastructure while simultaneously providing appropriate training, access to resources, participation in decision-making, communication, trust, and motivation. These practices can help employees develop the confidence and readiness required to work with AI-enabled systems. For managers and policymakers in the UAE construction industry, the findings highlight the importance of adopting a balanced approach that considers both technological capability and human factors when implementing AI. By integrating AI infrastructure with appropriate employee empowerment practices, organizations may be better positioned to support employee performance and achieve sustainable organizational outcomes.

9. Conclusion

This study examined the direct effect of AI infrastructure capability on employee performance and the mediating role of employee empowerment in the UAE construction industry. The findings indicate that AI infrastructure capability has a significant direct effect on employee performance and that employee empowerment serves as an important mechanism through which AI capability enhances employee performance. These results suggest that technological resources alone are insufficient to achieve improved performance unless employees are empowered to effectively utilize AI technologies. The study extends the Resource-Based View and Social Exchange Theory by demonstrating that organizational resources generate greater value when supported by employee empowerment. From a practical perspective, the findings highlight the importance of combining AI investments with empowerment practices, such as employee involvement, trust, communication, and motivation, to maximize the benefits of AI adoption. Despite its limitations, including the cross-sectional design and focus on the UAE construction industry, this study provides a useful foundation for future research on AI capability and employee performance in technology-driven organizations.

References

- Afram, J., Manresa, A., & Mas-Machuca, M. (2022). The impact of employee empowerment on organisational performance: The mediating role of employee engagement and organisational citizenship behaviour. *Intangible Capital*, 18(1), 96–119. <https://doi.org/10.3926/ic.1781>
- Ahmad, I. (2017). Effect of Teamwork , Employee Empowerment and Training on Employee Performance. *International Journal of Academic Research in Business and Social Sciences*, 7(11), 380–394. <https://doi.org/10.6007/IJARBS/v7-i11/3472>
- Akkoirshieda, M. S., Naim Ku Khalif, K. M., & Awang, S. (2024). Artificial intelligence in the United Arab Emirates public sector: a systematic literature review. *IAES International Journal of Artificial Intelligence*, 13(3), 2472–2481. <https://doi.org/10.11591/ijai.v13.i3.pp2472-2481>
- Al-ardhi, A. H., Adnan, F., & Al, A. (2025). *The Effect of Employee Empowerment in*

Enhancing Employees Passion for Work (pp. 1240–1248).

Al-sabi, S. M., Al-ababneh, M. M., Masadeh, M. A., & Elshaer, I. A. (2023). Enhancing Innovation Performance in the Hotel Industry: The Role of Employee Empowerment and Quality Management Practices. *Administrative Sciences*, 13(3), 66. <https://doi.org/10.3390/admsci13030066>

Al Zeer, I., & Ajouz, M. S. M. (2023). Conceptual model of predicting employee performance through the mediating role of employee engagement and empowerment. *International Journal of Educational Management*, 37(5) 986–1004. <https://doi.org/10.1108/IJEM-03-2023-0095>.

Alasmri, N., & Basahel, S. (2022). Linking Artificial Intelligence Use to Improved Decision-Making, Individual and Organizational Outcomes. *International Business Research*, 15(10), 1. <https://doi.org/10.5539/ibr.v15n10p1>

Alkhafaji, M. S., E. M. (2025). *Advancing Digital Transformation in UAE Construction: A Policy and Performance Review of Industry 4.0 Technologies* (pp. 1–10). Advances in Science and Engineering Technology International Conferences (ASET), Dubai, United Arab Emirates. <https://doi.org/10.1109/ASET66891.2025.11427921>

Almutawa, E. A., & Dilawer, T. (2023). *The impact of AI technology on organisational efficiency: Analysing the pros and cons of digitalisation in the context of UAE*.

Alnuaimi, R. S. (2022). *Artificial Intelligence in the Construction*.

Alshamsi, S. A. S. A., Hussain, T. P. R. S., & Ali, S. S. S. (2024). The Role of Artificial Intelligence on the Public Energy Sector Performance in the United Arab Emirates: The Mediation Role of Organizational Agility. *Journal of Law and Sustainable Development*, 12(1). <https://doi.org/10.55908/sdgs.v12i1.2808>

Alshemmari, J. M. H. J. (2023). An Empirical Study on Employee Empowerment Role in Increasing Efficiency of Employee Performance. 10(1), 52–71.

Altaffaq, H. A. H. (2021). Human Resource Management and Technology Development In Artificial Intelligence Adoption In The UAE Energy Sector. *Journal of Applied Engineering Sciences*, 11(2), 69–76. <https://doi.org/10.2478/jaes-2021-0010>

Aly, H. (2020). *Digital transformation , development and productivity in developing countries: Is artificial intelligence a curse or a blessing?* March. <https://doi.org/10.1108/REPS-11-2019-0145>

Azamela, J. C., Tang, Z., & Ackah, O. (2022). *Assessing the Antecedents of E-Government Adoption: A Case of the Ghanaian Public Sector*. <https://doi.org/10.1177/21582440221101040>

Bagram, M. M. M., Ali, H., & Qureshi, R. M. (2022). The moderating role of artificial intelligence on relationship between leadership, culture, psychological capital and knowledge management Effectiveness. *Technical Journal, UET Taxila*, 27(1), 58–67.

- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>.
- Benitez, J., Henseler, J., Castillo, A., & Schuberth, F. (2020). How to perform and report an impactful analysis using partial least squares: Guidelines for confirmatory and explanatory IS research. *Information and Management*, 57(2), 0–1. <https://doi.org/10.1016/j.im.2019.05.003>
- Bibi, M., Tan, T. G., & Yao, H. (2025). *Exploring the Impact of AI Capabilities on Employee Well-Being: A Mediated Moderation Analysis*. September, 1–19. <https://doi.org/10.1177/21582440251361981>
- Charan, J., & Biswas, T. (2013). How to Calculate Sample Size for Different Study Designs in Medical Research? *Indian Journal of Psychological Medicine*, 35(2), 121–126. <https://doi.org/10.4103/0253-7176.116232>
- Chen, C. (2023). Influence of Employees' Intention to Adopt AI Applications and Big Data Analytical Capability on Operational Performance in the High - Tech Firms. *Journal of the Knowledge Economy*, 151. <https://doi.org/10.1007/s13132-023-01293-x>
- Chen, P., & Kim, S. K. (2023). The impact of digital transformation on innovation performance - The mediating role of innovation factors. *Heliyon*, 9(3), e13916. <https://doi.org/10.1016/j.heliyon.2023.e13916>
- Cheng Khan, F., & Khan, K. U. X. (2021). Investigating the Impact of Information Technology, Absorptive Capacity, and Dynamic Capabilities on Firm Performance: An Empirical Study. *SAGE Open*, 11(4). <https://doi.org/10.1177/21582440211061388>
- Choi, S. L., Goh, C. F., Adam, M. B. H., & Tan, O. K. (2016). Transformational leadership, empowerment, and job satisfaction: the mediating role of employee empowerment. *Human Resources for Health*, 14(1), 73. <https://doi.org/10.1186/s12960-016-0171-2>.
- Darwish, N. A., & Shafqat, H. (2023). *The Influence of Motivation Factors on Employee's Performance*.
- Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard Business Review*, 96(1), 108–116.
- Farida. (2017). Employee Empowering through Information Technology and Creativity in Organizations. 11(3), 2017.
- Filippucci, F., Gal, P., Jona-lasinio, C., Leandro, A., & Nicoletti, G. (2024). *The impact of Artificial Intelligence on productivity, distribution and growth: Key mechanisms, initial evidence and policy challenges*.
- Fitri, D., Ratnasari, S. L., & Sultan, Z. (2023). Enhancing Employee Productivity Through Technology System AI-Based Approaches. *Proceeding of The 8th International Seminar on Business, Economics, Social Science, and Technology*, 3, 77–82. <https://doi.org/10.33830/isbest.v3i1.1236>
- Gayathri, G., Rohini, V., Rameshkumaar, V. P., Prakash, K., & Krishnan, S. A. (2025). AI And

Employee Performance : Unravelling The Influence of AI Literacy , Innovation Capability , And Collaboration. *International Journal of Environmental Sciences*, 11(6), 1696–1705. <https://doi.org/10.64252/f7bj2361>

Georgieff, A., & Hyee, R. (2022). Artificial Intelligence and Employment: New Cross-Country Evidence. *Frontiers in Artificial Intelligence*, 5(May), 1–29. <https://doi.org/10.3389/frai.2022.832736>

Ghanem, S. K. R. (2023). Toe Factors and SME's Performance: The Mediating and Moderating Roles of Social Media Benefits and Organizational Culture. *Sustainability (Switzerland)*, 11(1), 1–14.

Gharama, A. N. A., Khalifa, G. S. A., & Al-Shibami, A. H. (2020). UAE Police Administrative Employee Innovative Behavior: The Integration of Knowledge Sharing and Leadership. *International Journal of Psychosocial Rehabilitation*, 24(03), 1930–1948. <https://doi.org/10.37200/ijpr/v24i3/pr200941>

Ghillani. (2022). *Deep learning and artificial intelligence framework to improve the cyber security*. Authorea Preprints. <https://doi.org/10.22541/au.166379475.54266021/v1>

Habbal, F. M., Belhouli, H. E. D., Falasi, A., & Alnaiser, T. M. (2024). The role of Artificial Intelligence to Empower Public Services for Talent Attraction : A Comparative Analysis for the UAE. *Emirati Journal of Business, Economics and Social Studies*, 3(2), 16–25. <https://doi.org/10.54878/excm0n12>

Hair, J. F., Ringle, C. M., Hult, G. T. M., & Sarstedt, M. (2022). Assessing PLS-SEM Results Part II. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 2, 1–22. https://doi.org/10.1007/978-3-030-80519-7_1

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to Use and How to Report the Results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>

Hair, J. F., Sarstedt, M., & Ringle, C. M. (2019). Rethinking some of the rethinking of partial least squares. *European Journal of Marketing*, 53(4), 566–584. <https://doi.org/10.1108/EJM-10-2018-0665>

Hassan, A., & Abdulla, M. (2021). Moderating Interact of Artificial Intelligence Use In The Influences of Recruitment, Selection, And Staffing on The Organizational Performance In The UAE Manufacturing Industry. 27(2), 1–14.

Havidz, H. B. H. M. (2022). Artificial intelligence: work creativity, productivity and job satisfaction in the era of the industrial revolution 4.0. *Dinasti Int. J. Digital Bus. Manag.*, 3, 468–477.

Karakhan, A. A., Ph, D., Nnaji, C. A., Alsaffar, P. D. O., & Jin, Z. (2024). *Strategies for Employee Empowerment in Construction: US Industry Outlook* (pp. 1–12). <https://doi.org/10.1061/PPSCFX.SCENG-1438>

- Kassa, B. Y. (2025). *The impact of artificial intelligence on organizational performance: The mediating role of employee productivity*. <https://doi.org/10.1016/j.joitmc.2025.100474>
- Khan, A. N., Soomro, M. A., & Pitafi, A. H. (2024). AI in the Workplace: Driving Employee Performance Through Enhanced Knowledge Sharing and Work Engagement. *International Journal of Human-Computer Interaction*, 41(17), 1–14. <https://doi.org/10.1080/10447318.2024.2436611>
- Leela, L. (2023). A Study on Impact of Artificial Intelligence on Organisational Effectiveness. *SSRN Electronic Journal*, 13(4), 1248–1255.
- Luhana, K. K. (2023). The Rise of Artificial Intelligence and Its Influence on Employee Performance and Work. 8(2), 463–479. [https://doi.org/10.31703/gssr.2023\(VIII-I\).43](https://doi.org/10.31703/gssr.2023(VIII-I).43)
- Luhana, K. K., Memon, A. B., & Khan, I. (2023). The Rise of Artificial Intelligence and Its Influence on Employee Performance and Work. *Global Social Sciences Review*, 8(2), 463–479. [https://doi.org/10.31703/gssr.2023\(VIII-II\).43](https://doi.org/10.31703/gssr.2023(VIII-II).43)
- Lutfi, A. (2023). Factors affecting the success of accounting information system from the lens of DeLone and McLean IS model. *International Journal of Information Management Data Insights*, 3(2), 100202. <https://doi.org/10.1016/j.jjime.2023.100202>
- Mahmoud, A. S. (2021). *Improving Customer Responsiveness Agility Through Leadership Styles*. Mediating Role of Employee Empowerment.
- Martinez, R., Bharwaney, S., Simko, B., Dalto, J., Bangs, T., & Lovett, N. (2025). *Empowering Organizational Learning: Technology-Driven Performance Support for Real-Time Skill Building and Workflow Efficiency*. <https://doi.org/10.1007/s11528-025-01101-0>
- Mawed, M., Hamani, K., Kashwani, G., & Skafi, M. (2026). Assessment of the implementation of design out construction waste strategies in the UAE: Exploring challenges, solutions, opportunities, and emerging AI trends. *Journal of Open Innovation: Technology, Market, and Complexity*, 12(1), 100730. <https://doi.org/10.1016/j.joitmc.2026.100730>
- Meyerson, G., & Dewettinck, B. (2012). Effect of Empowerment on Employees Performance. 2(July), 40–46.
- Mikalef, P., & Gupta, M. (2021). Artificial intelligence capability: Conceptualization, measurement calibration, and empirical study on its impact on organizational creativity and firm performance. *Information and Management*, 58(3), 103434. <https://doi.org/10.1016/j.im.2021.103434>
- Mikalef, P., Islam, N., Parida, V., Singh, H., & Altwaijry, N. (2023). Artificial intelligence (AI) competencies for organizational performance: A B2B marketing capabilities perspective. *Journal of Business Research*, 164(April), 113998. <https://doi.org/10.1016/j.jbusres.2023.113998>
- Modise, J. M. (2023). *The Impacts of Employee Workplace Empowerment, Effective*

Commitment and Performance: An Organizational Systematic Review. December.

Mofleh, A., Mofleh, A., Graibeh, A., Khan, S., Al-majeed, S., & Zhang, P. S. (2024). Capability Assessment Framework for Artificial Intelligence and Blockchain Adoption in Public Sector of United Arab Emirates (UAE). *International Journal of Advanced Computer Science and Applications* (IJACSA), 15(6), 2676. <https://doi.org/10.14569/IJACSA.2024.0150607>

Muath, A., & Alex, O. (2025). *Artificial Intelligence Ethics in Municipal and Construction Sectors: A Literature Review.* <https://doi.org/10.5130/AJCEB.v25i3/4.9847>

Murray, W. C., & Holmes, M. R. (2021). Impacts of employee empowerment and organizational commitment on workforce sustainability. *Sustainability*, 13(6), 3163. <https://doi.org/10.3390/su13063163>

Ndukuba, S. N., Simpeh, E. K., & Kumar, P. (2025). Revolutionizing Worker Productivity Through Empowerment-Driven Motivation in South Africa's Construction Industry. 2(2), 47–65. <https://doi.org/10.56065/1kt61n35>

Olan, F., Nyuur, R. B., & Arakpogun, E. O. (2024). AI: A knowledge sharing tool for improving employees' performance. *Journal of Decision Systems*, 33(4), 700–720. <https://doi.org/10.1080/12460125.2023.2263687>

Pazetto, C. F., Luiz, T. T., & Beuren, I. M. (2022). *Empowering leadership for contextual performance: serial mediation of organizational support and commitment.* <https://doi.org/10.1108/IJPPM-04-2022-0195>

Pradanna, P. T., Septa, D., & Nabella, D. P. S. (2022). The Influence of Information Technology Users, Employee Empowerment, and Work Culture on Employee Performance at the Ministry of Law and Human Rights Regional Office of Riau Islands. *Enrichment: Journal of Management*, 12(2), 1620–1628.

Pradhan, S. (2018). *Transformational leadership and contextual performance: Role of integrity among Indian IT professionals.* The Current Issue and Full Text Archive of This Journal Is Available on Emerald Insight at: www.emeraldinsight.com/1741-0401.htm

Riak, C. N. G., & Wanyama, K. W. (2025). Examining the Effect of Employee Empowerment Programs on Employee Performance in Public Universities in South Sudan. 2462(2), 15–28. <https://doi.org/10.36344/ccijemms.2025.v07i02.002>

Ridwan, M. (2023). Does Employee Empowerment as a Mediating Variable the Linking of Transformational Leadership on Employee Performance? *Jurnal Manajemen Indonesia*, 23(1) (Apr. 2023), 61–72. <https://doi.org/10.25124/JMI.V23I1.4560>.

Rizi, M. S., Andargoli, A. E., Malik, M., & Shahzad, A. (2024). How does organisational culture affect agile projects? A competing values framework perspective. *VINE Journal of Information and Knowledge Management Systems*. <https://doi.org/10.1108/VJIKMS-10-2023-0250>

- Rubel, M. R. B., & Kee, D. M. H. (2013). Perceived support and employee performance: The mediating role of employee engagement. *Life Science Journal*, 10(4), 2557–2567.
- Sattar, T., Ahmad, K., & Hassan, S. M. (2015). Role of Human Resource Practices in Employee Performance and Job Satisfaction With Mediating Effect of Employee Engagement. *Pakistan Economic and Social Review*, 53(1), 81–96.
- Setyawan, A. (2021). the Effect of Knowledge Management and Talent Management on Organizational Performance With Organizational Culture As a Mediating Variable. *Manajemen Bisnis*, 11(1), 1–11. <https://doi.org/10.22219/mb.v11i1.16300>
- Shen, Y., & Zhang, X. (2024). *The impact of artificial intelligence on employment: the role of virtual agglomeration* (pp. 1–14). <https://doi.org/10.1057/s41599-024-02647-9>
- Singh, A., & Shaurya, A. (2021). Impact of Artificial Intelligence on HR practices in the UAE. *Humanities and Social Sciences Communications*, 8(1), 1–10. <https://doi.org/10.1057/s41599-021-00995-4>
- Thamik, H., & Wu, J. (2022). The impact of artificial intelligence on sustainable development in electronic markets. *Sustainability*, 14(6), 3568. <https://doi.org/10.3390/su14063568>
- Tong, S. (2021). *The Janus face of artificial intelligence feedback: Deployment versus disclosure effects on employee performance*. July 2020, 1600–1631. <https://doi.org/10.1002/smj.3322>
- Tretiakov, A., Jurado, T., Bensemman, J., Jurado, T., & Bensemman, J. (2023). Employee Empowerment and HR Flexibility in Information Technology SMEs. *Journal of Computer Information Systems*, 00(00), 1–14. <https://doi.org/10.1080/08874417.2022.2158962>
- Wen, T. B., Theresa, C. F. H., Kelana, B. W. Y., Othman, R., & Syed, O. R. (2019). Leadership Styles in Influencing Employees' Job Performances. *International Journal of Academic Research in Business and Social Sciences*, 9(9). <https://doi.org/10.6007/ijarbss/v9-i9/6269>.
- Wijayati, D. T., Rahman, Z., Fahrullah, A., Rahman, M. F. W., Arifah, I. D. C., & Kautsar, A. (2022). A Study of Artificial Intelligence on Employee Performance and Work Engagement: The Moderating Role of Change Leadership. *International Journal of Manpower*, 43(2), 486–512. <https://doi.org/10.1108/IJM-07-2021-0423>.
- Yin, Y., Wang, Y., & Lu, Y. (2019). Antecedents and outcomes of employee empowerment practices: A theoretical extension with empirical evidence. *Human Resource Management Journal*, 29(4), 564–584. <https://doi.org/10.1111/1748-8583.12243>
- Yuqing. (2022). How Will Artificial Intelligence Affect the Performance of Employees. *Analyticsinsight Net*, 0, 27–35.
- Zumrah, A. R., Muthaliff, M. M. A., Alhantoobi, R., & Alghizzawi, M. (2024). The Relationship Between Artificial Intelligence and Job Performance in UAE. In N. Mansour & L. M. Bujosa Vadell (Eds.), *Green Finance and Energy Transition*. Contributions to Finance

and Accounting. Springer, Cham. https://doi.org/10.1007/978-3-031-75960-4_47

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