

## Social and technical enablers of AI integration: Implications for innovative workplace behavior in the UAE

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### ABSTRACT

This study investigates the social and technical factors influencing the adoption of Artificial Intelligence (AI) technologies within organizations and examines how these factors impact innovative workplace behaviour. Drawing on a combination of organizational culture, leader humility, work relationships, and AI-related technical skills, the study presents a comprehensive framework for understanding the integration of AI. Data were collected through an online survey from employees in the government, semi-government, banking, healthcare, and private sectors in the United Arab Emirates (UAE). 441 professional respondents from multiple sectors. The study's findings reveal that social factors, such as organizational culture and leader humility, and technical factors, including managerial and employee AI skills, significantly contribute to the successful adoption and integration of AI. This study contributes to the literature by integrating both social and technical dimensions into a unified model. In addition, the study highlighted that AI adoption succeeds when technological readiness is matched with strong workplace relationships, supportive culture, and leader humility creating the conditions for sustained innovation. Finally, the findings provide practical implications for managers aiming to promote a supportive environment for AI adoption and innovation.

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## 1. Introduction

Artificial Intelligence (AI) is reshaping workplaces across various industries, affecting both the social and technical aspects of the workplace (Aldossary et al., 2024). As noted by Chawdhry et al. (2022), AI is one of the most disruptive technologies of this century, driving profound and rapid changes that are transforming business organizations and societies in ways that were previously unimaginable just a few years ago. AI aims to enhance and maintain intelligent products, services, and interactions by enabling information sharing, promoting collaboration, and optimizing long-term benefits. It can take various forms, adapting to diverse applications and industries (Gretzel et al., 2015; Brynjolfsson & McAfee, 2017). AI applications are increasingly taking over tasks traditionally performed by workers (Nam, 2019; Palumbo, 2021). As AI technologies become more integrated into daily business operations, their impact extends beyond automation and efficiency, shaping workplace interactions, decision-making processes, and overall innovation dynamics. According to Bruno (2024), AI applications improve overall operational efficiency, enhance automation efficiency, leverage predictive analytics, transform Customer Relationship Management (CRM), and optimize Supply Chain Management. Understanding how social and technical factors affect AI usage is essential to assess its intermediate influence on innovative behavior in the workplace. According to Nirupama et al. (2024), the benefits of AI are undeniable, including improved efficiency, reduced errors, enhanced decision-making, and the automation of routine tasks. However, Various studies have attempted to determine the factors influencing AI adoption among companies, such as the technical factors influence the adoption of AI in the organization, including the organization's technical AI tools, employees' AI skills, Alsheibani, et al. (2018) explored the

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limited understanding of the skills and specific factors that influence employees' perceptions and opinions regarding the use and adoption of AI technology within organizations. Furthermore, the AI skills of managers and employees influence AI usage. Ransbotham et al. (2017) acknowledge top management support, a lack of AI skills, and employees' fear of transition as key factors influencing the adoption rates of AI.

However, Ghani et al. (2022) indicate that IT capability does not significantly impact AI adoption in publicly listed manufacturing companies. Instead, the findings highlight the influence of top management and government support as key factors driving the adoption of AI in these organizations. Consequently, AI can enhance innovative behaviors in the workplace. According to Ambati et al. (2020), technical factors play a crucial role in the adoption of AI within organizations, as employees rely on AI techniques and technologies to effectively fulfill their job responsibilities. Fortuna and Gorbaniuk (2022) found that AI conceptualizations differ between professionals and laypeople, creating inconsistencies that challenge the study of AI adoption and usage. As Savela et al. (2021) highlight, cognitive evaluations significantly shape attitudes and intentions toward AI. According to Qian et al. (2024), AI is expected to continue having a significant impact on society. AI will eliminate many jobs, resulting in a "useless class" that will necessitate new social structures, educational reforms, and economic models, according to Harari (2017). Due to these issues, research on AI and society is urgent. All these changing aspects make it challenging to tell how AI will aid or hurt workplace innovation. Despite extensive study, knowledge and technique gaps remain, especially in developing countries. These exclusions make it more challenging to predict how AI will affect creative and socio-technical firms. This study examines the creative behaviors of UAE governmental, semi-public, and private firms, as well as their employees, in relation to technical and societal factors that influence AI adoption. The study's empirical findings help us understand how social and technical factors affected AI acceptability and usage, which in turn affected innovation.

## 2. Purpose of the study

This study examines the influence of social and technical factors on AI adoption and their resulting impact on innovative behavior in the workplace. It also evaluates how integrating AI promotes innovative behaviors within organizations. The research questions are outlined as follows:

### a. Social Factors and AI Usage

RQa1: How does the development of organizational culture impact AI adoption in the workplace?

RQa2: What role does leader humility play in facilitating AI adoption within organizations?

RQa3: How do workplace relationships influence employees' acceptance and utilization of AI technologies?

### b. Technical Factors and AI Usage

RQb1: How do organizational AI technical skills affect the successful adoption of AI in the workplace?

RQb2: To what extent do managerial AI skills contribute to the effective implementation and integration of AI technologies?

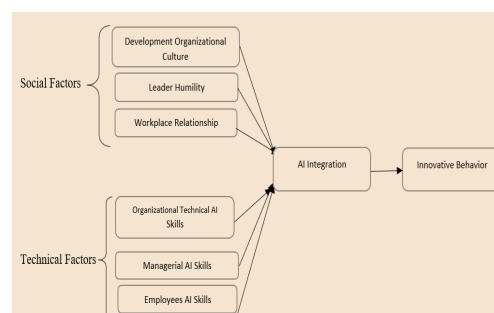
RQb3: How do employees' AI skills influence their willingness and ability to adopt AI-driven processes?

### c. AI Usage and Innovative Workplace Behaviour

RQc1: How does AI usage impact innovative workplace behaviour?

## 3. Research Model and Hypothesis Development

The proposed research model aims to develop and test a conceptual framework that examines how social and technical factors influence the adoption of AI-related innovations in organizations. Existing literature lacks comprehensive models that address both the benefits and concerns of IT adoption simultaneously (Breward et al., 2017). The variables in this model are clearly defined and specifically tailored to match the study's objectives (Fig. 1).



**Fig. 1.** Conceptual Framework

The implications of AI integration on workers and workplace relations have sparked passionate debate. A growing amount of research examines why firms use AI. The company's technical readiness (Damerji & Salimi, 2021; Damerji, 2020), as well as employees' views on AI usage and deployment, are examples. According to Koo et al. (2021), workers expressed mixed opinions regarding AI. However, Qian et al. (2024) discussed how AI is transforming the workplace and the daily lives of workers. For human-AI collaboration in business decision-making to succeed, Edwards et al. (2000) say human decision-makers must be comfortable with AI technology. Looking at the larger picture, Ismail and Muhammad (2022) examine how social factors affect the success of AI technology in organizations. Parry et al. (2016) and Bankin et al. (2023) advise organizational researchers to consider both the advantages and disadvantages of AI taking over critical leadership roles. Leaders must strengthen their leadership skills and reskill their staff to effectively leverage AI, keeping pace with the increasing presence of AI in the workplace. AI also affects workplace relationships and outcomes. Tongkachok et al. (2022) note that AI may increase engagement, but it also raises problems about retention, job satisfaction, meaningfulness, and control. However, AI tools have inflamed already heated arguments regarding AI's social and technical ramifications, emphasizing the need to study the technology's impact in numerous professional situations.

### *3.1 Social Factors Influencing Artificial Intelligence Adoption*

Social factors, including leadership and culture, influence how firms respond to the adoption of AI. A robust and flexible organizational culture has helped integrate AI. Bley et al. (2022) found a strong positive association between AI skills, business culture, and success. Following this, Morshed et al. (2024) emphasized the importance of a well-aligned culture in fostering collaboration, innovation, and adaptability, which are crucial to AI readiness. Dey et al. (2024b) suggest that firms may gain more from AI if they strike a balance between operational efficiency, innovation, and adaptability. They can minimize interruptions and maintain continuity, even in uncertain situations, with this approach. Tehrani et al. (2024) employ institutional theory to argue that a robust cultural foundation enables a business to effectively deploy AI technology and achieve its strategic objectives, particularly in the face of external shocks.

Martínez-Plumed et al. (2021) and Morshed et al. (2024) emphasize the importance of aligning internal cultural values with external environmental factors for successful technology adoption. Social variables, including culture and leadership, influence the adoption of AI. Strong leadership helps organizations adapt to AI integration by combining traditional methods with new technology (Chen & Decary, 2020). Similar to Owens et al. (2013), job happiness, engagement, and team learning orientation have a moderating effect on the relationship between a modest leader and staff retention. According to Robert (2019), AI is forcing leaders to change their team-building, development, and support strategies. Randriamiary (2024) recognizes AI's rising role in strategic decision-making and operational optimization. He cautions that human knowledge must be balanced with integration to succeed, especially in assessment and critical thinking. To avoid AI from mimicking humans, leaders must be agile, ethical, and collaborative (Leutner & Chamorro-Premuzic et al., 2018; Randriamiary, 2024). Mallén et al. (2019) found that humble leaders are more inventive, and benevolence mediates the relationship. Despite these results, Randriamiary (2024) emphasizes that academic research on AI-driven leadership is limited, underscoring the need for further study. Workplace relationships and social dynamics also influence AI adoption, alongside leadership and culture. In "AI agents' critical role in bolstering organization-public relationships and shaping supportive behavioral intentions during organizational transformation," Oh and Ki (2024) emphasize their importance. Kassa and Worku (2025) say artificial intelligence is transforming industries and business relationships. Russell and Norvig (2015) and Kassa and Worku (2025) found that AI may raise productivity by improving job satisfaction, motivation, participation, and purpose. However, this adjustment has drawbacks. Multiple studies show that algorithmic prejudice, job displacement, and privacy concerns may cause emotional anguish, workforce instability, and greater social issues. Therefore, the following hypotheses were developed:

**Hypothesis Ha1:** *Organizational culture has a significant positive influence on the integration of AI within organizations.*

**Hypothesis Ha2:** *Leader Humility has a significant positive influence on the integration of AI within organizations.*

**Hypothesis Ha3:** *Work relation has a significant positive influence on the integration of AI within organizations.*

### *3.2 Technical Factors Influencing the Adoption of Artificial Intelligence*

Technical factors strongly impact corporate AI implementation. Research indicates that several variables influence the acceptance and acceptability of AI in various areas. Data quality, infrastructure preparedness, system integration, model performance, security, scalability, and workforce skills are examples (Ahmed et al., 2023; Heimberger, 2024). Using AI in daily tasks demands high-quality data. Data that is noisy, skewed, or missing might lead to inaccurate AI outputs. Ahmed et al. (2023) report that companies struggle to collect clean and representative datasets, which may limit the development and reliability of AI. Technology is also important when leveraging AI-driven innovation to improve organizational performance. Stakeholder types, technical characteristics, and discrepancies within and across these groups all impact organizational effectiveness (Olesen, 2014). The use of different sources and formats hinders data integration. Before using AI, Heimberger et al. (2024) stated that organizations must invest in data management and large-scale data storage solutions. This ensures reliable AI deployment data. The success of AI implementation depends on data purification, integration, and governance,

according to Maestro and Rana (2024). Furthermore, Ahmed et al. (2023) state that computational infrastructure, represented by processing power, hardware accelerators (such as GPUs/TPUs), cloud services, and IT architecture, is another key factor facilitating the integration of AI into organizations' daily operations. Several AI projects were unsuccessful due to insufficient infrastructure; for example, in the healthcare sector, several research studies have identified hardware and IT infrastructure limitations that impede the deployment of effective AI solutions (Ahmed et al., 2023). From this perspective, organizations must ensure that their overall IT systems, including data centers, cloud platforms, and networks, can handle the intensive computations and large-scale data processing required by AI solutions. In their systematic review of AI in manufacturing, Heimberger et al. (2024) concluded that existing IT systems must be upgraded and enhanced to enable AI adoption on a technical level. It is worth noting that AI solutions rarely operate in isolation; they must interact with databases, enterprise applications, and business processes, or be embedded within operational processes. For this reason, system integration is crucial, as it influences how well AI can be integrated into an organization's software systems, workflows, and business processes (Maestro & Rana, 2024). Ensuring that new AI algorithms work seamlessly with existing systems can be technically demanding and resource-intensive. In their work, Banjanović-Mehmedović & Jahić (2022) describe integration complexity as a major barrier, requiring significant effort to achieve interoperability between AI modules and legacy IT environments (Ahmed et al., 2023). Other examples were reported from the healthcare sector, where interoperability and workflow integration issues occurred when AI was introduced into clinical practice (Maestro & Rana, 2024), and from the public sector, where it was noted that early planning is important to pre-empt integration and scalability issues when implementing AI innovations (Selten & Klievink, 2024). User trust and perceived value have a significant influence on the acceptance of corporate AI integration. AI systems should be easy to use, accurate on real-world data, and fast to integrate (Heimberger et al., 2024). Medical AI models trained on small datasets generally fail to generalize, resulting in reduced accuracy in new populations and decreased physician confidence (Ahmed et al., 2023). Openness of AI models is another technical concern for organizations using AI. Many AI algorithms provides confusing outcomes. This opacity may hinder adoption since organizations and end-users distrust unfamiliar technology. Recent research suggests that explainable AI solutions are needed to address this trust gap (Heimberger et al., 2024). If they can understand AI output, people are more likely to trust it. Healthcare and finance, which are highly regulated and high-stakes, need transparency for decision responsibility and compliance.

However, many companies recognize that explainability is essential for developing trust in AI systems (Afroogh et al., 2024; Agostinho et al., 2023) and that its absence threatens corporate AI installations. The deployment of AI is affected by privacy and security issues. Businesses should be aware that adopting AI will not violate cybersecurity or data privacy laws, as these systems manage sensitive data and perform vital functions. Business surveys and academic studies have demonstrated that concerns over data security influence AI adoption (Heimberger et al., 2024). Because AI utilizes sensitive data, privacy is a key concern. The massive volumes of data AI systems require to obtain and evaluate create data privacy issues, according to Maestro and Rana (2024). Any AI system, regardless of business, must secure users' data, according to researchers. Building security and privacy rules beforehand makes AI implementation easier for enterprises. However, those who ignore these factors may face challenges and lawsuits. Therefore, the following hypotheses were developed:

**Hypothesis Hb1:** *Organizational Technical AI Skills positively influence the integration of AI within organizations.*

**Hypothesis Hb2:** *Managerial AI Skills positively influence the integration of AI within organizations.*

**Hypothesis Hb3:** *Employees' AI Skills positively influence the integration of AI within organizations.*

### 3.3 AI Integrating the Innovative Behavior

Artificial intelligence (AI) has revolutionized organizational efficiency by handling complex tasks that previously required human intelligence (Bailey & Barley, 2020). Nam (2019) and Palumbo (2021) say AI is replacing human labor in various jobs. Khetarpal et al. (2024), Batra et al. (2018), and Wamba-Taguimdje et al. (2020) found that AI improves departmental productivity, cuts costs, and improves decision-making and organizational performance. AI is essential for novel learning methods, according to Baral et al. (2022). AI can automate mundane tasks, freeing up bright individuals to focus on impactful initiatives. Chirgwin (2021) recommends balancing human and machine knowledge to maximize AI-powered systems like autonomous mining technology. Aljohani et al. (2022) report a growing demand for professionals in web development, data visualization, statistics, machine learning, and IT management. Even with AI's benefits, a lack of career progression, a lack of faith in organizational rules, a non-supportive work environment, and unchallenging job responsibilities may lead to employee disengagement (Rastogi et al., 2018). Filippi et al. (2023) noted that job expenses, regulatory constraints, and societal preferences for human employment hinder the adoption of automation. Because lower-skilled workers reject automation, a skills gap may arise. He et al. (2023) stress the role of AI knowledge in shaping people's views of AI, job insecurity, and behavior. Soni et al. (2020) report ethical challenges related to AI, bias, trust, and other issues. Based on these insights, the study proposes the following hypothesis:

**Hypothesis Hc:** *Integrating AI in the organization positively impacts innovative behavior.*

## 4. Methodology

### 4.1 Research Design and Sample

The study aims to investigate the social and technical factors that influence the adoption of AI technologies in the workplace and examine how AI integration contributes to innovative behaviours within organizational settings. A quantitative research methodology was adopted through the use of a structured survey to collect data from employees in various sectors (including government, semi-government, banking, healthcare, and private organizations) across the United Arab Emirates. Moreover, we focused on employees who were directly or indirectly linked to the utilization of AI technologies within their organizations. This approach enables the development of a comprehensive understanding of AI adaptation and integration across various organizations and departments. A stratified random sampling technique was adopted, with stratification developed based on key aspects of each sector (i.e., government, semi-government, banking, healthcare, and private organizations). Each sector was adequately represented in the sample, and participants were randomly selected from each stratum to minimize bias. Additionally, the sampling frame consisted of experienced employees with access to AI technologies in the workplace. We conducted a power analysis using the G\*Power (3.1) to determine the ideal sample size for the study. Based on a desired power of 0.80, a significance level of 0.05, and an expected medium effect size ( $f^2 = 0.15$ ) for Structural Equation Modeling (SEM), the analysis yielded a required sample size of 678 respondents. The power analysis formula used is as follows:

$$n = \frac{Z_{\beta}^2(1-\rho^2)}{f^2}$$

where  $Z_{\beta}$  is the Z-value corresponding to the desired power (0.80), " $\rho$ " represents the anticipated correlation between variables,  $f^2$  is the effect size (0.15).

### 4.2 Measurement Instruments and Data Analysis

Thus yielded 441 sample sizes. The data were gathered using a structured survey featuring a validated five-point Likert scale, ranging from one ("strongly disagree") to five ("strongly agree"). The survey constructs were derived from well-established literature (Kassa & Worku, 2025; Tang et al., 2022; Jong & Hartog, 2010; Mikalef & Gupta, 2021; Cameron & Quinn, 2011; Biggs et al., 2016; Owens et al., 2013; Li et al., 2021; Liang et al., 2022) and were further refined through a pilot study to ensure their validity and reliability. This method was chosen for its effectiveness in analyzing multiple variables and uncovering complex relationships. Moreover, surveys are commonly employed in explanatory research to test and validate hypotheses (Gefen et al., 2004; Straub et al., 2004). The final questionnaire was distributed online via Google Forms to employees across various sectors in the UAE, including government, semi-government, banking, healthcare, and private organizations. Ethical consideration was considered throughout the study. Before participating, each participant was told of the study's aims and obtained informed consent. We ensured all participants that their responses were kept confidential and utilize only for current study.

## 5. Results

Table 1 depicts the demographics characteristics of the 441 study respondents, the survey data reveals that 62.8% of respondents are male, while 37.2% are female. The majority work in private entities (40.4%), followed by semi-government entities (20.2%) and technology-integrated sectors (12%). In terms of education, 57.2% hold a Bachelor's degree, 20.9% have a Master's degree, and 10% possess a High Technical College Degree. Most respondents (44.2%) are employees, with smaller percentages in management roles. Regarding tenure, 40.4% have worked in their position for 6-10 years, and 24.7% for 11-15 years. More than half (52.3%) have used AI effectively for 1-2 years, while 30.7% are unsure. Finally, 45.7% report that AI has impacted their work to some extent, with 39.4% stating it has had a positive impact.

**Table 1**  
Demographics Characteristics

Attribute	Category	Frequency	Percentage
Gender	Female	164	37.20%
	Male	277	62.80%
Working Entity	Banking	50	11.30%
	Government Entity	45	10.20%
	Hospital	26	5.90%
	Technology-integrated sectors	53	12.00%
	Private Entity	178	40.40%
	Semi-Government Entity	89	20.20%
Certificate	Bachelor's Degree	252	57.20%
	High Technical College Degree	44	10.00%
	Master's Degree	92	20.90%
	PhD	34	7.70%
	School Diploma	19	4.30%

**Table 1**  
Demographics Characteristics (Continued)

Attribute	Category	Frequency	Percentage
Position in Institution	Deputy Manager	71	16.10%
	Director	76	17.20%
	Employee	195	44.20%
	Group Manager	34	7.70%
	Other	79	17.91%
	Secretary	14	3.20%
	Senior Manager	32	7.30%
Years Working in Position	11-15 years	109	24.70%
	2-5 years	89	20.20%
	6-10 years	178	40.40%
	Less than 1 year	27	6.10%
	More than 15 years	38	8.60%
Years Using AI Effectively	1-2 years ago,	230	52.30%
	No idea/Not sure	135	30.70%
	Recently	76	17.00%
AI Impact on Work	No	67	15.20%
	To some extent	201	45.70%
	Yes	173	39.40%
<b>Total</b>		<b>441</b>	<b>100%</b>

Table 2 presents descriptive statistics for the study variables, all of which have means above 3.7, indicating moderate to high levels of these constructs in the sample. The standard deviations (SDs) range from 0.61 to 0.82, suggesting moderate variability in responses. The minimum values for each variable are relatively low (ranging from 2.0 to 2.6), while the maximum values are consistently high (ranging from 5.0), reflecting a spread of responses across the full scale. Skewness values are negative for all variables, indicating a slight tendency for responses to cluster toward the higher end of the scale. Similarly, the kurtosis values are also negative, suggesting that the distributions are slightly platykurtic, or less peaked than a normal distribution, with more responses toward the central and higher end of the scale and fewer extreme values.

**Table 2**  
Descriptive Statistics

Variable	Mean	SD	Min	Max	Skewness	Kurtosis
Organizational Culture	3.82	0.74	2.1	5.0	-0.32	-0.45
Leader Humility	3.95	0.68	2.4	5.0	-0.28	-0.71
Work Relationship	3.76	0.82	2.0	5.0	-0.40	-0.62
Organizational AI Skills	3.88	0.71	2.2	5.0	-0.35	-0.56
Managerial AI Skills	3.93	0.66	2.6	5.0	-0.31	-0.41
Employee AI Skills	3.81	0.79	2.1	5.0	-0.37	-0.59
AI Integration	3.98	0.63	2.7	5.0	-0.29	-0.68
Innovative Workplace Behavior	4.02	0.61	2.9	5.0	-0.25	-0.52

Table 3 depicts the reliability and validity analysis for the constructs, indicating strong psychometric properties. Cronbach's alpha values range from 0.83 to 0.90, demonstrating good internal consistency across all constructs, with values exceeding the commonly accepted threshold of 0.70. Composite Reliability (CR) values also fall between 0.86 and 0.92, further confirming the reliability of the constructs. The Average Variance Extracted (AVE) values range from 0.61 to 0.71, indicating satisfactory convergent validity, as they exceed the recommended threshold of 0.50. McDonald's  $\omega$  values are consistently above 0.80, reinforcing the robustness of the constructs. Additionally, the factor loadings for each construct are high, ranging from 0.70 to 0.92, indicating that the indicators strongly measure their respective constructs. Overall, these results support the reliability and validity of the measurement model.

**Table 3**  
Reliability and Validity Analysis

Construct	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)	McDonald's $\omega$	Factor Loading Range
Organizational Culture	0.87	0.89	0.66	0.88	0.72 – 0.88
Leader Humility	0.85	0.88	0.64	0.86	0.70 – 0.86
Work Relationship	0.83	0.86	0.61	0.84	0.71 – 0.84
Organizational AI Skills	0.88	0.90	0.68	0.89	0.73 – 0.90
Managerial AI Skills	0.86	0.89	0.67	0.87	0.72 – 0.89
Employee AI Skills	0.84	0.87	0.62	0.85	0.69 – 0.85
AI Integration	0.89	0.91	0.70	0.90	0.76 – 0.91
Innovative Workplace Behavior	0.90	0.92	0.71	0.91	0.78 – 0.92

Table 4 presents the correlation matrix, which highlights significant positive relationships between all variables, with correlation coefficients ranging from moderate to strong. Organizational Culture shows the highest correlation with AI Integration ( $r = 0.64$ ), followed by Innovative Work Behavior ( $r = 0.60$ ). Leader Humility is strongly correlated with Managerial AI Skills ( $r = 0.59$ ) and AI Integration ( $r = 0.57$ ). Work Relationship has notable correlations with Leader Humility ( $r = 0.55$ ) and AI Integration ( $r = 0.53$ ). Organizational AI Skills demonstrate strong relationships with Managerial AI Skills ( $r = 0.67$ ) and AI Integration ( $r = 0.69$ ). Employee AI Skills show moderate to strong correlations with most other variables, particularly with AI Integration ( $r = 0.63$ ). AI Integration is strongly correlated with all other variables, with the strongest association observed with Innovative Work Behavior ( $r = 0.72$ ). All correlations are statistically significant at the  $p < .01$  level, indicating robust relationships between the variables.

**Table 4**

Correlation Matrix

Variable	1	2	3	4	5	6	7	8
1. Org. Culture	1							
2. Leader Humility	.58**	1						
3. Work Relationship	.49**	.55**	1					
4. Org. AI Skills	.62**	.51**	.48**	1				
5. Managerial AI Skills	.54**	.59**	.50**	.67**	1			
6. Employee AI Skills	.51**	.46**	.47**	.61**	.60**	1		
7. AI Integration	.64**	.57**	.53**	.69**	.66**	.63**	1	
8. Innovative Work Behavior	.60**	.56**	.52**	.65**	.62**	.61**	.72**	1

Note:  $p < .01$ , two-tailed.

Table 4 presents the results from the hypothesis testing using Structural Equation Modeling (SEM), which reveal strong support for all the proposed relationships. Each hypothesis has a significant path coefficient ( $\beta$ ), with t-values exceeding the critical threshold of 1.96 and p-values below 0.001, indicating statistical significance.

a. Social Factors and AI Usage

Organizational Culture ( $\beta = 0.28$ ), Leader Humility ( $\beta = 0.21$ ), and Work Relationship ( $\beta = 0.19$ ) all have positive and significant effects on AI Integration, supporting Hypotheses Ha1, Ha2, and Ha3.

b. Technical Factors and AI Usage

Organizational AI Skills ( $\beta = 0.30$ ), Managerial AI Skills ( $\beta = 0.27$ ), and Employee AI Skills ( $\beta = 0.25$ ) significantly contribute to AI Integration, supporting Hypotheses Hb1, Hb2, and Hb3.

c. AI Usage and Innovative Workplace Behaviour

AI Integration has a significant positive effect on Innovative Behavior ( $\beta = 0.42$ ), supporting Hypothesis Hc.

The model fit indices further reinforce the robustness of the model, with an SRMR of 0.06, NFI of 0.91, and  $R^2$  values of 0.71 for AI Integration and 0.62 for Innovative Behavior, indicating a good model fit.

**Table 5**

Hypothesis Testing (Structural Equation Modeling Results)

Hypothesis	Path	$\beta$	t-value	p-value	Decision
Ha1	Org. Culture $\rightarrow$ AI Integration	0.28	5.12	<.001	Supported
Ha2	Leader Humility $\rightarrow$ AI Integration	0.21	4.20	<.001	Supported
Ha3	Work Relation $\rightarrow$ AI Integration	0.19	3.87	<.001	Supported
Hb1	Org. AI Skills $\rightarrow$ AI Integration	0.30	5.84	<.001	Supported
Hb2	Managerial AI Skills $\rightarrow$ AI Integration	0.27	5.02	<.001	Supported
Hb3	Employee AI Skills $\rightarrow$ AI Integration	0.25	4.76	<.001	Supported
Hc	AI Integration $\rightarrow$ Innovative Behavior	0.42	6.91	<.001	Supported

Model Fit Indices (PLS-SEM): SRMR = 0.06, NFI = 0.91,  $R^2$  (AI Integration) = 0.71,  $R^2$  (Innovative Behavior) = 0.62

## 6. Discussion

This study aimed to investigate the social and technical factors that influence the adoption of Artificial Intelligence (AI) technologies in organizations and how these factors impact innovative workplace behavior. The study's results have provided meaningful insights into the role of these factors in AI integration and innovation in the workplace, filling gaps in the existing literature and contributing to both theoretical understanding and practical applications. The study findings revealed several key insights, as shown in the following sections:

**a. Social Factors and AI Usage**

The study found that organizational culture, leader humility, and work relationships have a positive influence on AI integration within organizations. After corporate culture, leader humility, and work relationships were the second most essential. Morshed et al. (2024) and Bley et al. (2022) concluded that the implementation of AI requires strong leadership and an adaptable organizational culture.

**b. Technical Factors and AI Usage**

Technical skill among enterprises, managers, and workers also influenced AI adoption. AI skills of management, personnel, and organizations favorably and dramatically influenced AI integration. Our findings align with earlier studies, which suggest that technical knowledge and accompanying infrastructure facilitate the mainstream deployment of AI.

**c. AI Usage and Innovative Workplace Behaviour**

AI integration has been shown to boost workplace innovation, according to studies. As AI is extensively used in the workplace, employees are more likely to engage in creative problem-solving, idea generation, and process improvement.

*6.1. Contributions of the Study*

This study contributes to the literature on workplace AI adoption. This research examines the influence of modest leaders on AI adoption, thereby addressing a gap in the existing literature. Leaders who were humble enough to admit mistakes, seek support, and delegate helped with AI integration. Owens et al. (2013) and Mallén et al. (2019) found that humble leaders encourage cooperation and innovation. Companies considering AI will benefit from this study, as it demonstrates how a modest CEO can effectively integrate AI. Examining the numerous social and technical factors that influence the adoption of AI is also crucial. This study integrates the social and technological components of AI adoption into a single model to illustrate their interaction, unlike prior studies (Ghani et al., 2022). This research offers a more comprehensive understanding of AI adoption by examining several key parameters. Additionally, it proposes investigating social-technological interactions. The study also illuminates how organizational culture affects AI adoption. Previous research has demonstrated the influence of culture on technology adoption (Bley et al., 2022); however, this study quantifies the impact of a strong business culture on the integration of AI. These findings show that an AI-friendly, adaptive organizational culture fosters technology innovation and adoption.

*6.2. Comparison with Previous Studies*

**a. Social Factors and AI Usage**

These findings are partially inconsistent with Murire (2024), who, while acknowledging AI's benefits, such as enhanced efficiency, productivity, and innovation, also emphasized challenges including cultural misalignment, employee resistance, ethical concerns, and poor leadership communication. Similarly, the results contrast with Dwivedi et al. (2021), who noted that AI adoption poses significant challenges to organizational culture. Despite these concerns, the present study identified organizational culture as the most influential social factor, followed by leader humility and work relationships. These results align with Morshed et al. (2024) and Bley et al. (2022), who emphasized that strong leadership and an adaptable organizational culture are essential for effective AI implementation. Furthermore, corporate culture influences AI integration, as previously established (Morshed et al., 2024; Chen & Decary, 2020). This study adds that leader humility is crucial to AI adoption to the literature. Leader humility has been linked to creativity and leadership (Owens et al., 2013); however, no study has specifically examined its relationship with AI in the workplace.

**• b. Technical Factors and AI Usage**

The alignment of technical skills across enterprises, including management, personnel, and institutional levels, plays a critical role in facilitating AI adoption. The presence of AI-related competencies throughout an organization significantly enhances the successful integration of AI technologies. These results align with prior studies that underscore the importance of investing in technological infrastructure, such as AI-equipped laboratories, high-speed internet, and educator training programs, to foster innovation, enable personalized learning, and build the technical foundation required for broad AI deployment (Ahmed et al., 2023; Cramarenco et al., 2023). In line with Ahmed et al. (2023) and Maestro and Rana (2024), this research highlights that organizational, managerial, and employee-level AI skills are key drivers of adoption. Notably, the study reveals that managerial experience with AI plays a more pivotal role than previously recognized, contrasting with findings by Ghani et al. (2022), who reported no significant effect of IT capability on industrial AI adoption. This divergence may stem from differences in the industrial contexts examined.

### • **c. AI Usage and Innovative Workplace Behaviour**

The positive association between AI integration and innovative workplace behavior supports the assertion by Kheterpal et al. (2024) and Baral et al. (2022) that AI may stimulate creativity by freeing up workers' time for strategic tasks. According to Zhang et al. (2025) Using AI creating an innovative environment and the employees who exhibit innovative behaviour are particularly skilled at recognizing opportunities to improve processes, whether by enhancing workflows, introducing new methods of service delivery, or creating more personalized customer experiences. This finding contrasts with Raisch and Krakowski (2021), who argue that AI-driven augmentation and automation can generate tensions and contradictions among employees, potentially leading to hesitation and resistance in engaging with AI technologies.

## **7. Conclusions and Implications**

This study conclude that AI adoption succeeds when technological readiness is matched with strong workplace relationships, supportive culture, and leader humility creating the conditions for sustained innovation. Furthermore, combining technological capability with sociocultural strengths, including leadership humility and a supportive workplace culture, organizations in the UAE can drive AI adoption and unlock greater innovation.

### *7.1 Theoretical Implications*

This study focusing on the interplay between social and technical factors, this research offers a more comprehensive theoretical model for understanding how these elements collectively influence AI adoption and innovative behaviour in organizations. Furthermore, contributions to the understanding of AI innovation and workplace adoption by integrating both social and technical factors into a unified framework. While prior research, such as Ghani et al. (2022) and Alsheibani (2018), examined these dimensions separately, A key contribution is leader humility role as an essential yet underexplored driver of AI adoption and managing the AI integration in the organization to support the innovative environment. The findings highlight the leaders managing collaboration, encourage openness to change, and create an environment where AI can be embraced as part of organizational innovation. The study also reinforces the central role of organizational culture in enabling AI adoption. An open, adaptive culture, supported by strong workplace relationships, emerges as a primary facilitator of successful AI integration.

### *7.2 Managerial Implications*

The findings of this study offer valuable guidance for organizations implementing AI. First, highlight the organizational culture role in driving successful AI adoption. Managers should promote a culture of flexibility, collaboration, and openness to technological change, as such an environment increases the likelihood of AI project success. Second, the results emphasize the importance of leader humility in guiding AI integration. Leaders who acknowledge their own limitations, seek diverse perspectives, and promote collective problem-solving can create a supportive environment for AI adoption. Third, managerial and employee AI competencies are essential for effective implementation. Organizations should invest in targeted technical training to equip employees with the skills needed to maximize the potential of AI tools. Finally, the study indicates that AI can enhance employee creativity and analytical thinking. Managers can leverage this by encouraging staff to use AI-powered tools not only for operational efficiency but also as a catalyst for innovation and improved organizational performance.

## **8. Limitations and Future Research**

This study is limited to a sample from UAE organizations, which may affect the generalizability of the findings, even though the UAE serves as a major hub for investment, business, and diverse industries. The use of self-reported data may also introduce bias, and differences in AI project types, implementation quality, and industry context were not fully examined. Future research should adopt a longitudinal approach to assess the long-term effects of AI adoption, compare outcomes across industries and regions, and investigate the impact of paid versus unpaid AI-related training. Broadening the scope to include varied demographic and cultural contexts will provide deeper insights into how social and technical factors jointly influence AI integration and innovation.

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