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## Artificial Intelligence Integration as a Strategic Management Capability: Effects on Risk-Taking, Innovation, and Sustainable Competitive Advantage

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**Abstract:** Artificial intelligence (AI) has emerged as a strategic capability that is transforming how organizations innovate, make decisions, and sustain competitive advantage in highly dynamic business environments. The study examines the impact of AI integration on organizational risk-taking, decision innovation, innovation capacity, and competitive advantage. Multiple theories are integrated to examine how AI drives organizational adaptability and strategic performance. Data were collected through a structured survey administered to managers from AI-integrated high-tech firms operating across healthcare, technology development, fintech, manufacturing, and telecommunications sectors in the UAE. Using 150 valid responses, the proposed hypotheses were tested through confirmatory factor analysis and structural equation modeling. The findings reveal that AI integration fosters organizational risk-taking, decision innovation, innovation capacity, and competitive advantage. The results further demonstrate that AI enables firms to make more informed and innovative decisions, strengthen creative problem-solving capabilities, and improve strategic responsiveness in competitive markets. The study contributes to the growing AI and strategic management literature by presenting AI integration as a multidimensional organizational capability rather than merely a mechanism for technological adoption. Practically, the findings provide managers with actionable insights into how AI can be strategically leveraged to enhance innovation culture, operational efficiency, and long-term business sustainability in high-tech industries.

**Keywords:** AI-integration, competitive advantage, decision innovation, high-tech firms, innovation capacity, risk-taking, strategic management capability.

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## INTRODUCTION

The recent rapid development of Artificial Intelligence (AI) has significantly transformed the dynamics of contemporary business (e.g., Cristofaro and Giardino (2025)). High-tech companies are also actively incorporating AI technologies, which will enhance operational efficiency, promote innovation, and help them gain a competitive advantage (Qayyum, Khan, Majid, Ul Hassan, & Jamil, 2025). AI has turned out to be an essential facilitator of organizational change, with key dimensions of change impacting strategic decision-making and overall firm performance (Neiroukh, Emeagwali, & Aljuhmani, 2025; Rajagopal et al., 2022). Through processing large data sets and delivering actionable information, AI helps organizations navigate uncertainties, make more rapid decisions, and create an innovative culture. As AI continues to grow, it provides companies with unprecedented opportunities to strengthen their strategic positions in an ever more competitive market. The application of AI in business operations has significant implications for the decision-making of an organization (e.g., Al-Surmi, Bashiri, and Koliousis (2022)). Historically, companies were limited by the uncertainty and complexity of the organizational decision-making environment. Nonetheless, AI-based decision support systems have allowed companies to make more informed, data-driven decisions that encourage them to take more risks in areas such as products, entering new markets, and strategic alliances (Rajagopal et al., 2022). Equally, artificial intelligence offers the means by which not only the speed and accuracy of the decisions are improved, but also innovative approaches to addressing the business problems are created (Ali, Khan, Khattak, & Şener, 2024). Moreover, the contribution of AI to increased innovation capacity cannot be overstated. It enables companies to test new concepts, simplify the development of products, and maximize operations, which contributes to both incremental and radical innovations. Consequently, the integration of AI has been associated with a better competitive advantage because AI can be used to outperform the competition in other aspects (Krakowski, Luger, & Raisch, 2023; Shemshaki, 2024).

Although the number of studies on the impact of AI on business processes was conducted across different industries (e.g., Sahoo, Kumar, Donthu, and Singh (2024)), the previous studies have mostly followed a holistic approach to the analysis of how AI is impacting the business, including AI-employee collaboration and business performance; AI impact on marketing and business performance without considering the interdependencies (e.g., Abrokwah-Larbi & Awuku-Larbi, 2024; Chowdhury, Budhwar, Dey, Joel-Edgar, & Abadie, 2022). Although the literature has revealed that AI could be used to improve decision-making (Rajagopal et al., 2022), little research has examined how AI influences organizational risk-taking and decision innovation simultaneously or how the consequences of these processes impact the performance of the firm. Additionally, although the role of AI in improving the creative capacity has been explored (e.g., (Aagaard & Tucci, 2024; Pagani & Champion, 2024)), less research has focused on how the integration of AI contributes to the competitive advantage of firms in the long run, and especially in high-tech industries where AI is becoming an inseparable part of business strategy (Ali et al., 2024). By examining the holistic and interrelated impacts of AI integration on risk-taking, decision innovations, innovation capacity, and competitive advantage, our study has covered this critical gap. Furthermore, the absence of theoretically grounded testable frameworks that have the capacity to explore the synergetic effect of AI on different organizational outcomes has limited our understanding of how firms can use AI to optimize their organizational-level processes, as well as their strategic position in the market. Moreover, not only does the study contribute to theoretical knowledge on the impact of AI on organizational dynamics, but it has also provided practical insights that firms can utilize to effectively integrate AI to achieve maximum competitive advantage.

The synergistic impact of AI on risk-taking, decision-making, innovation capacity, and competitive advantage is critical for high-tech companies seeking to use AI to sustain growth and competitiveness. Addressing the research gap, our study has made significant contributions to both theoretical and managerial perspectives. The theoretical implications have enlightened us about the role of AI as a strategic resource that defines various aspects of organizational behavior, such as risk management, decision-making processes, and outcomes of innovations. At the managerial level, companies can better understand how the integration of AI can assist them in developing a more innovative and risk-prone organizational culture that can lead to increased

accuracy of decision-making and overall enhanced performance. In addition, the findings of the specified research are particularly beneficial to high-tech firms that need to address the issues related to integrating AI. Knowing the nuanced impact of AI on various aspects of an organization can provide companies with the tools that they will need to implement AI technologies more effectively. Filling these knowledge gaps in the literature, the study has provided strong support in developing an understanding for organizations to maximize their AI integration strategies to ensure that they use AI to its full potential in enhancing their innovation and operational performance.

Furthermore, the study is based on the following key research questions: (1) How does AI integration have an impact on organizational risk-taking? (2) What impact does AI have on decision innovation? (3) What is the role of AI in building the capacity of innovation in organizations? (4) What is the impact of AI integration on competitive advantage? The findings of the proposed study have provided a complete understanding of the potential impact of the integration of AI on the main organizational functions, including risk-taking, decision-making, and innovation capacity, which will help in gaining a competitive edge. Moreover, the study will assist companies in comprehending how to maximize the effect of AI on business performance. Moreover, study findings have provided actionable strategies that managers can implement to ensure the effective adoption of AI technologies and achieve long-term business success. Additionally, AI integration in our study means the firms with operational AI applications within their systems, and AI adoption is the first step towards integrating AI into the organizational systems. That is, the initial step towards AI integration is adopting AI. As the research involved gathering information about firms that had already adopted AI in the chosen fields, the variable of interest was the one of AI integration. Furthermore, we theorized that AI adoption corresponds to the organizational choice or resolution to use artificial intelligence, AI integration denotes the functional implementation of AI systems in organizational processes, and AI embeddedness reflects the stage at which AI becomes an inseparable part of how the organization thinks, decides, and acts.

In our proposed model, we include Risk-Taking (RT), Decision Innovation (DI), Innovation Capacity (IC), and Competitive Advantage (CA). The inclusion of these variables stems from their importance to AI and their relevance to organizational success. Risk-Taking (RT) is influenced by AI's ability to furnish organizations with the means of deriving insights in real time and with the support of analytics to enhance the quality of decisions. Decision Innovation (DI) describes the idea that AI could be used to automate the decision process and make it more innovative through the use of Data. Innovation Capacity (IC) of AI concerns its ability to aid in generating ideas and the subsequent design of novel products and services. Competitive Advantage (CA) is understood as the long-lasting benefits that organizations will gain from the application of AI, which serves to transform the quality of decisions and innovations that organizations will engage with. Our study aims to offer a trans-theoretical framework on the impact of AI on business through the lens of these variables. The model will assist both scholars and practitioners in their efforts to understand AI toward achieving the highest level of organizational effectiveness and a competitive advantage in perpetuity.

## LITERATURE REVIEW

Business firms have seen changes in how they operate, how strategic decisions are made, and how they perform due to the introduction of Artificial Intelligence (AI) technology. AI's ability to process data and provide insight in real time offers businesses tools to face the challenges of even more complex and rapidly changing environments (Brynjolfsson & McAfee, 2017). With AI's ability to lessen uncertainty, businesses are even more willing to take the risks that are known and calculated (Wamba-Taguimdje, Fosso Wamba, Kala Kamdjoug, & Tchatchouang Wanko, 2020). Risk-Taking Theory can be utilized to understand the influence AI has on the willingness to take risks. This theory postulates that, should an organization be better at understanding the risks, then they are more likely to participate in risky behavior (Finucane, Alhakami, Slovic, & Johnson, 2000). Information Processing Theory (IPT) stems from the idea that, if an organization has access to processed and accurate information, then its decisions can be of a higher quality (Galbraith, 1974). AI's ability

to reduce the gap in knowledge and provide actionable insights offers the potential for organizations to reduce their cognitive biases and improve decision-making.

This makes risk assessments more precise, which strengthens confidence in the decision-makers and empowers them to take bolder decisions (Ali et al., 2024). The Open Innovation Theory complements AI-enabled risk-taking by using internal and external knowledge streams and focusing on the competitive dimension (Chesbrough, 2003). With Open Innovation, AI provides the means to incorporate external data, knowledge, and partners in the decision-making process. This is also supported by the Dynamic Capabilities Theory, which stresses the need for the organization to be quick and adaptable (Teece, 2023). AI provides the means to achieve this quick adaptability through the provision of real-time data and the ability to attain a competitive advantage through improved decisions. This adaptability is crucial to maintain competitiveness and allow firms to undertake the risk of changing the business model. From the Resource-Based View (RBV), AI is a unique resource that provides firms with a sustained competitive advantage. By using AI, firms can improve their decision-making processes, and through the optimization of their operations, they can create opportunities that their competitors will be unable to recreate (Barney, 1991). AI is a resource that is both scarce and valuable, and, when properly implemented, firms can enhance their risk management and innovation capabilities.

### **Conceptualizing AI Adoption, AI Integration, and AI Embeddedness**

The implementation of Artificial Intelligence (AI) in organizations unfolds in three successive stages: adoption, integration, and embeddedness. While related, each stage signifies a distinct dimension of an organization's AI maturity. AI adoption is the first stage where an organization decides to procure and start the use of AI technologies. Organizations at this stage are interested in the potential benefits AI may provide and invest in AI tools and infrastructure. In the second stage, AI integration, the use of AI technologies is formalized in the organization. AI tools become part of the organization's processes, workflows, and structures. Integrating AI into organizations is the extent to which AI is used to facilitate day-to-day and tactical activities of the organization.

The third and highest stage is AI embeddedness and goes beyond integration. It is the stage where AI is fully embedded in the processes, structures, and culture of the organization and is significantly relied upon in the organization's strategic choice of actions, frameworks of analysis, and responses to changes in the environment. Organizations at this stage perceive AI not as a stand-alone technology, but as part of their core competencies and a means of generating value. The study is focused only on the integration of AI, as the organizations from which the data were collected had adopted AI and were using AI technologies in the operational and strategic functions of the organization. Thus, the integration of AI focuses on functional aspects of AI in relation to the organizational aspects of risk-taking, decision-making, innovation, and competitiveness.

### **AI Integration and Organizational Risk-Taking**

While risk-reduction yields multifold strategic benefits, the availability of better information holds the key. Regarding this, the Risk-Taking Theory implies that the more available the better information and decision-making tools, the higher the probability that the organization will engage in risky behavior (Finucane et al., 2000). According to this theory, decision-makers with superior tools are more likely to take calculated risks since they are able to estimate potential rewards and risks better. The ability of AI to minimize uncertainty during decision-making further contributes to risk-taking in an organization. As an example, Information Processing Theory (IPT), which emphasizes the way organizations process information to make decisions, suggests that AI is improving the process by automating the data-analysis process and providing real-time insights. This enables firms to make quick decisions with a high confidence level even in environments that are highly risky (Galbraith, 1974). Predictive model using AI tools assists organizations in anticipating potential risks and rewards and mitigating the apparent threat of risky ventures and encouraging exploration into new markets, products, or strategies (Ali et al., 2024). The research has revealed that AI Integration results in increased risk-taking in firms as it enhances the accuracy in decision-making and offers tools to manage risks

that are more strategic (Wamba-Taguimdje et al., 2020). In particular, AI can help companies to model various situations and predict the possible effects of various decisions, thus reducing the level of uncertainty related to risk (Brynjolfsson & McAfee, 2017). This is in line with the findings of Pagani and Champion (2024), who state that AI assists in the development of a culture of innovation and risk-taking due to the provision of insights that inform the establishment of new, calculated risks in product development and market expansion. AI integration encourages calculated risk-taking due to the experimental nature that is possible in less risky environments. Routine tasks are the domain of AI, leaving higher-order tasks that require thought and creativity in the domain of employees of the higher order tasks that are more creative and of more impact. AI establishes confidence in the possibility of risk lessening, giving an impetus to undertake risk-taking on innovative tasks (Broekhuizen et al., 2023). In addition, organizations are empowered to methodically analyze and adapt their approach with AI, which leads to a minimized impact of the risk taken (Candelon & Reeves, 2022). Based on this discourse, we state the following hypothesis.

*H<sub>1</sub>: Organizations that integrate AI technologies will demonstrate higher levels of risk-taking due to improved decision-making accuracy and reduced uncertainty.*

### **AI Integration and Decision Innovation**

The integration of Artificial Intelligence (AI) into business processes has impacted the way organizations make decisions and how they innovate (e.g., Lee, Suh, Roy, and Baucus (2019)). AI has the ability to interpret and analyze massive amounts of data and construct recognition and prediction frameworks. The impacts of this have changed the conventional structures of how companies develop decisions and pursue faster, more competitive approaches to the viability of their corporate decisions (Pagani & Champion, 2024; Zong & Guan, 2025). Specifically, AI is boosting decision innovation, enabling organizations to make more dynamic and creative decisions in areas such as product development, customer experience, and market strategy (Rajagopal et al., 2022). The Open Innovation Theory (Chesbrough, 2003), which underlies the assumption that firms should draw on external and internal knowledge to accelerate innovation, can be extended to learn how AI can impact decision innovation. The open innovation process through AI allows organizations to collect, process, and act on various data inputs, both internal and external, and make decisions that are not only based on data but also innovative in nature. Ali et al. (2024) note that decision innovation is one of the main consequences of using AI, as an organization is able to enhance the decision-making process by generating new ideas and ways to address challenges. AI technologies will enable firms to act on findings from external partnerships, data flows, and customer feedback, creating a more agile and adaptive decision-making environment.

AI enables businesses to test out new decision-making models, incorporating automation, predictive analytics, and real-time data, each of which contributes to more innovative decision processes (Schmitt, 2023). Moreover, the use of AI has been associated with the creation of intelligent decision support systems (IDSS), which allow organizations to make smarter decisions, not only more accurate but also more innovative (Qin, Xu, Wang, & Skare, 2024). These systems combine AI features to interpret data, consider options, and predict results, which in turn allows better strategic decision-making and cultivates a decision innovation culture. With the adoption of AI in businesses, the decision-making process becomes more cooperative, adaptable, and responsive to help firms remain at the edge of the market trends and competitor actions. However, in spite of these positive aspects, the adoption of AI in decision-making is never devoid of issues. Such ethical issues as the potential threat of algorithmic bias and the transparency of AI-driven decisions should be addressed to ensure that AI-driven decisions are fair and just (Rezaei, Pironti, & Quaglia, 2025). Based on the Open Innovation Theory and Decision Innovation Theory, we suggest the following hypothesis:

*H<sub>2</sub>: The integration of AI will positively influence decision innovation within organizations, enhancing their ability to make novel and innovative decisions.*

### **AI Integration and Innovation Capacity**

The introduction of AI has become one of the main sources of innovation capacity in organizations (Ali et al., 2024). AI helps organizations to find new opportunities, optimize the development of products, and improve their creative problem-solving (Dhand, Singh, & Le, 2025). This is in accordance with the Dynamic Capabilities Theory (Teece, 2023), which proposes that organizations should be able to sense and seize new opportunities in a dynamic environment by developing capabilities. AI expands these capabilities to offer real-time insights and enables more rapid and data-driven decision-making, which helps firms remain on top in innovation (Ali et al., 2024).

Moreover, the Open Innovation Theory (Chesbrough, 2003) identifies the need to combine external and internal knowledge to help in accelerating the process of innovation. The AI technologies facilitate this process and allow firms to work with their external partners more efficiently, based on the data provided by a broad range of sources to develop new ideas and solutions (Wei & Pardo, 2022). With this open innovation, AI assists organizations in realizing their capability to innovate and adapt to changes in the market at a high rate (Pagani & Champion, 2024). Moreover, the fact that AI is capable of supporting intelligent decision support systems (IDSS) enhances the rate at which products are developed and how ideas are brought to the market faster (Sánchez-Marrè, 2022). Nevertheless, some issues, such as the challenge of data privacy and the bias of the algorithms, should be resolved to make the most of AI in helping to innovate (Ozmen Garibay et al., 2023). All these can restrict the potential of AI to enable sustainable innovation in organizations unless such problems are addressed as such.

*H<sub>3</sub>: AI integration will positively affect innovation capacity in organizations by facilitating creative problem-solving, product development, and faster time-to-market.*

### **AI Integration and Competitive Advantage**

Attaining a sustainable and lasting competitive advantage is one of the key objectives of modern managers (Khan, Qayyum, Ali, & Jamil, 2026). The adoption of Artificial Intelligence (AI) has emerged as a pivotal force of competitive advantage to organizations in any industry (Qayyum et al., 2025). The fact that AI is able to optimize operations, improve decision-making, and spur innovation has great implications for how firms position themselves in the competitive markets (Ali et al., 2024). The Resource-Based View (RBV) theory supports this association since it postulates that firms attain a competitive advantage by obtaining distinctive, valuable, and hard-to-copy resources (Barney, 1991). Approaching the unique technological resource of AI can help firms improve operational efficiency, costs, and decision-making accuracy, which are key to achieving a competitive advantage in the market. Competitive advantage is also aided by AI as it contributes to enhancing organizational agility and responsiveness. It is believed by the Dynamic Capabilities Theory (Teece, 2023) that companies that are capable of responding rapidly to any changes in the market conditions and demands of customers tend to enjoy a sustainable competitive advantage. This flexibility is made possible by AI that can give organizations real-time information on market trends, consumer behaviors, and any potential risks that might happen, enabling organizations to adapt their strategies in real-time. As an example, AI solutions such as predictive analytics and machine learning can help organizations predict changes in customer demands or market trends and be able to respond to them (Zong & Guan, 2025).

Moreover, AI technologies can also be used to enrich the competitive advantage, as they lead to the creation of innovative ideas, which are one of the main elements of business success (Shemshaki, 2024). The ability of AI to automate operations and provide information-driven insights can make organizations speed up the process of product development, introduce new products, and refine the existing ones more effectively than their competitors (Sundu, Yasar, & Findikli, 2022). AI can enable organizations to be ahead of their competitors in an ever-changing business environment by allowing organizations to continually innovate. Nevertheless, issues like how to ethically use AI, possible biases in algorithms, and how AI systems can be integrated into the existing organizational structures should be tackled to unlock the full potential of AI in competitive advantage (Du & Xie, 2021). Still, despite these issues, the implementation of AI is a significant strategic strength for organizations, which may translate into competitive advantages in the market in the long

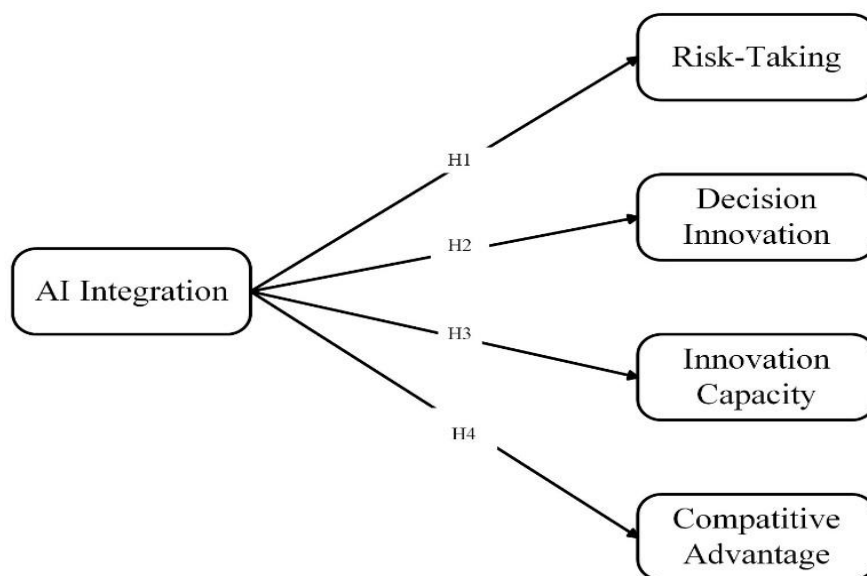
run. Using the theoretical backgrounds of the Resource-Based View and the Dynamic Capabilities Theory, we make the following hypothesis:

*H<sub>4</sub>: AI integration will result in a higher competitive advantage for organizations by improving operational efficiency, enhancing decision-making, and fostering innovation.*

The conceptual model of the study is presented in Figure 1, and Table 1 presents the operationalization of the study variables.

**Table 1: Operationalization of Study Variables**

Variable	Dimension
AI Integration (AI)	- Real-time insights: Predictive analytics for decision-making. - Data processing: AI processes large datasets. - Automation: Automates routine tasks, freeing up resources.
Risk-Taking (RT)	- Calculated risk-taking: Informed, calculated decisions with AI. - Increased risk tolerance: AI enhances confidence. - Strategic risk-taking: Simulates outcomes for better risk assessments.
Decision Innovation (DI)	- Dynamic decision-making: AI enables agile, innovative processes. - Data-driven decisions: Relies on AI to analyze data. - Creative problem-solving: Facilitates novel solutions to challenges.
Innovation Capacity (IC)	- Creative problem-solving: Enhances creative solutions. - Faster product development: Accelerates from prototype to market. - Collaboration: AI-powered tools improve team collaboration.
Competitive Advantage (CA)	- Operational efficiency: Optimizes processes and reduces costs. - Strategic adaptability: Quick strategy adjustments using AI. - Continuous innovation: Faster product/service introduction than competitors.



**Figure 1: Conceptual Model**

## METHODOLOGY

### Research Design

A quantitative, cross-sectional research design was employed in the study to map the relationships among the constructs: AI integration, risk-taking, decision-making innovation, innovation capacity, and competitive

advantage. A survey was the most suitable method for this research because it provided the means to collect an equivalent set of data from managers and decision-makers at several levels, in multiple industries that were observed to exhibit rapid technological advancement. The cross-sectional design allowed research to test relationships at a specific point in time and provided evidence on the implications of AI integration on organizations in the UAE's high-tech industries.

### **Data Collection**

A physical survey of high-tech companies in the UAE was conducted. Instead of a mail survey, a physical survey was opted for, with well-trained teams administering the survey in person. The University of Haripur (Pakistan) provided virtual assistance in the data collection and helped to ensure uniformity and accuracy of the results in the different regions. This collaboration improved the arrangement of the survey and made it possible to reach a larger number of high-technology companies in the UAE. In total, 250 questionnaires were handed over to decision-makers and managers in various high-tech companies (healthcare, technology development, financial technology, manufacturing, and telecommunications) in the UAE, with a focus on those specifically involved in the integration of AI and its strategic implications. By conducting a follow-up of the respondents, a response rate of 70% was obtained, leading to 175 responses. It is a sufficiently high response rate to give strong insights into the research questions (Baruch & Holtom, 2008; Nulty, 2008). Nevertheless, in the process of data cleaning, 20 questionnaires were eliminated because of either a lack of complete answers or incorrect entries (e.g., some did not fully understand the context of AI integration). Besides, 5 responses were omitted because the participants did not belong to the target group and were not involved in making the decision to integrate AI. Thus, the final sample to be analyzed was 150 valid questionnaires with a response rate of 60% that remained valid, which is an acceptable range (Baruch & Holtom, 2008; Nulty, 2008).

### **Study Instrument**

The study instrument was a structured questionnaire that aimed at measuring the key constructs, such as AI Integration, risk-taking, decision innovation, innovation capacity, and competitive advantage. To measure the degree to which AI influences such organizational variables, the questionnaire was provided in Likert-scale format, that is, in answers ranging between 1 = Strongly Disagree and 5 = Strongly Agree. To achieve validity and reliability, the questionnaire was created according to the previous research. Cronbach's Alpha was measured to determine the reliability of the scales, with acceptable values of above 0.70 (Nunnally, 1978). The scale of AI integration was created relying on the works of Ali et al. (2024) and Yang, Al Mamun, Reza, and Wang (2026). Sample items: "Our organization has adopted AI technologies in the decision-making processes in our organization". The scale showed good internal consistency, whereby Cronbach's Alpha stood at 0.85. The Risk-Taking scale was developed based on the works of Al-Mamary and Alshallaqi (2022) and Polas et al. (2022). Sample items such as "AI has assisted our organization to make more calculated risks" and "We are more willing to innovate due to insights provided by AI." The consistency of this scale was also good, with a Cronbach's Alpha of 0.83.

The Decision Innovation scale was created according to the works of Ali et al. (2024) and Fu, Li, and Chen (2023). Among the sample items, "AI assists our organization in making innovative decisions" and "Our decision-making processes have become more data-driven with AI support. The scale has a high Cronbach's Alpha of 0.88. The sample items of the Innovation Capacity scale were created based on the work of Schiuma and Santarsiero (2023), whereby the sample items are as follows: "AI has greatly enhanced the ability of our organization to innovate" and "AI has helped us to easily identify new business opportunities in our organization. Cronbach's Alpha value of this scale was 0.86, which reflects good internal consistency. Lastly, the Competitive Advantage scale was developed based on the research of Krakowski et al. (2023). It contains such sentences as "The integration of AI has provided our organization with a competitive advantage in the marketplace" and "AI has helped our organization to gain a competitive edge in the marketplace. The scale was found to be very reliable, with Cronbach's alpha value standing at 0.87. To make sure of the scale's clarity, consistency, and relevance of the items, a small sample was used to pre-test the scale on 25 respondents. According to the feedback provided by the pre-test, there were some minor adjustments made to refine the

wording and format of the questions, ensuring that they were easy to understand and apply to the context of AI implementation in high-tech companies. The purposive sampling technique was applied, which involved high-tech firms that have already adopted AI technologies in their business processes. The reason why the method was selected was in order to make sure that the respondents were relevant with regard to the experience and the knowledge that they have on AI, which in this case was critical towards the objectives of the study.

Confirmatory Factor Analysis (CFA) was done to determine the suitability of our model. The loading of all the items on their respective constructs was tested, and the fit of the model was tested using some fit indices. First,  $\chi^2/df = 280.45/140$ , resulting in an acceptable score of 2.00. The Incremental Fit Index (IFI) was 0.91, the Tucker-Lewis Index (TLI) was 0.89, the Comparative Fit Index (CFI) was 0.93, and the Root Mean Square Error of Approximation (RMSEA) was 0.06, which meant that the model was found to fit the data very well. The study also complied with the Helsinki ethics, where the rights and ethical behavior of the participants were taken care of. The participants were notified and given informed consent, and the anonymity and confidentiality of responses were highly respected throughout the research. The subjects were well informed of their right to withdraw at any time during the research without repercussions.

Since all study variables were collected via a self-administered survey from the same respondents, assessing the potential for Common Method Bias (CMB) was necessary. To follow Podsakoff, MacKenzie, Lee, and Podsakoff (2003) guidelines, Harman’s single-factor test was conducted, where all the items were entered into a factor analysis (without rotation). Results indicated that several factors were identified, each with eigenvalues greater than one. Additionally, the first unrotated factor explained 34.21% of the variance, which is below the 50% threshold generally expected. Therefore, no single factor explained most of the variance. The results indicate that CMB is not expected to represent a serious threat to the validity of the study results.

**Table 2: Measurement Model Assessment**

Construct	Item	Standardized Loading ( $\lambda$ )	t-value	p-value
AI Integration (AI)	AI1	0.81	12.64	<0.001
	AI2	0.85	13.27	<0.001
	AI3	0.84	13.11	<0.001
Risk-Taking (RT)	RT1	0.79	11.88	<0.001
	RT2	0.83	12.73	<0.001
	RT3	0.85	13.08	<0.001
Decision Innovation (DI)	DI1	0.84	13.34	<0.001
	DI2	0.86	13.79	<0.001
	DI3	0.85	13.46	<0.001
Innovation Capacity (IC)	IC1	0.82	12.57	<0.001
	IC2	0.84	13.02	<0.001
	IC3	0.83	12.88	<0.001
Competitive Advantage (CA)	CA1	0.86	13.84	<0.001
	CA2	0.87	14.11	<0.001
	CA3	0.84	13.25	<0.001

**Note:** Model Fit Statistics:  $\chi^2/df = 2.00$ ; IFI = 0.91; TLI = 0.89; CFI = 0.93; RMSEA = 0.06.

## RESULTS

Table 2 presents the confirmatory factor analysis results, which show that all measurement items significantly loaded on their respective constructs with standardized factor loadings of 0.79 to 0.87 ( $p < 0.001$ ). Since the recommended threshold is 0.70, these results indicate the items have excellent reliability. Additionally, the significant loadings, along with the reliability and validity statistics, confirm that the measurement model is appropriate and adequately supports the proposed structural relationships.

**Table 3: Demographic Statistics**

Demographic Variable	Categories	Frequency (n)	Percentage (%)
Industry	Healthcare	34	22.67%
	Technology Development	43	28.67%
	Financial Technology	30	20.00%
	Manufacturing	21	14.00%
	Telecommunications	22	14.67%
Respondent Role	CEO <sup>1</sup> /Board Members	43	28.67%
	CTO <sup>2</sup> /Innovation Managers	64	42.67%
	Other Senior Executives	43	28.67%
Company Size	Small (50-200 employees)	34	22.67%
	Medium (201-500 employees)	68	45.33%
	Large (500+ employees)	48	32.00%

**Note:** <sup>1</sup> CEO: Chief Executive Officer; <sup>2</sup> CTO: Chief Technology Officer.

Table 3 shows a detailed description of the demographic features of the 150 valid participants of high-tech companies in the UAE. The sample includes companies of various industries, and Technology Development companies represent the most significant category, 28.67 (43 respondents), indicating the significant role of AI in the innovation of this sector. Healthcare companies are next in line with 22.67% (34 respondents), showing the increasing relevance of AI to better healthcare services and operations. Financial Technology companies have the highest percentage of 20.00% (30 respondents) that indicated the increasing use of AI in financial services to accomplish tasks such as risk management and decision-making. The Telecommunications and Manufacturing industries have 14.67% (22 respondents) and 14% (21 respondents), respectively, which implies that AI is also taking its toll on the communications infrastructure and production processes, respectively. In terms of respondent roles, CTOs/Innovation Managers represent the highest percentage in respondents, with the largest percentage of 42.67% (64 respondents), which means that it is the senior technology leaders who are mainly driving AI integration in organizations. CEO/Board Members and Other Senior Executives all contribute 28.67% (43 respondents) each, which demonstrates the balanced role of the highest-level executives in the process of creating AI strategy and ensuring that it complies with organizational goals.

Furthermore, the medium-sized companies (201-500 employees) make up the majority (68, 45.33%). It means that medium-sized organizations are particularly active in terms of integrating AI as they are large enough to invest in advanced technologies and, at the same time, small enough to innovate quickly. Among the large companies (those with 500 employees and more) are listed (48 respondents, with 32.00% in second place), which confirms that the potential of AI for creating efficiency and competitive advantage is not something that large companies are unaware of. Finally, small companies (50-200 employees) take 22.67% (34 respondents), which implies that even smaller companies are beginning to implement AI, but they may have more significant issues with scaling such technologies.

**Table 4: Reliability Analysis**

Construct	Cronbach's Alpha ( $\alpha$ )	Composite Reliability (CR)	Average Variance Extracted (AVE)
AI Integration (AI)	0.85	0.88	0.70
Risk-Taking (RT)	0.82	0.85	0.68
Decision Innovation (DI)	0.88	0.90	0.72
Innovation Capacity (IC)	0.83	0.87	0.69
Competitive Advantage (CA)	0.86	0.89	0.74

Table 4 shows the reliability analysis of the key constructs used in this study, such as AI Integration (AI), Risk-Taking (RT), Decision Innovation (DI), Innovation Capacity (IC), and Competitive Advantage (CA). The Alpha ( $\alpha$ ) values of the constructs are between 0.82 and 0.88, which indicates good internal consistency and

suggests that the items included in each construct are reliably measuring the intended concept. In particular, Decision Innovation (DI) has the highest reliability with an alpha of 0.88, whereas Risk-Taking (RT) has the lowest but still reasonable alpha equal to 0.82. The Composite Reliability (CR) values are all above 0.80 with a range of 0.85 to 0.90, which again proves the reliability of the scales utilized in this study. These large CR values indicate that all indicators represent each construct well, and the constructs are internally consistent. The values of the Average Variance Extracted (AVE) of the constructs are also high, with a range of 0.68 to 0.74 for the constructs. All AVE values exceed the mark of 0.50, which means that each construct captures a significant amount of variance in its indicators, which supports the convergent validity of the measures. Generally, the reliability analysis shows that the constructs in this study have good internal consistency and convergent validity, meaning that the measurements used are powerful and reliable to proceed with the analysis.

**Table 5: Pearson Correlation**

Construct	Mean	SD	All	RT	DI	IC	CA
AI Integration (All)	4.02	0.82	1.000				
Risk-Taking (RT)	3.89	0.85	0.732**	1.000			
Decision Innovation (DI)	3.98	0.80	0.721**	0.672**	1.000		
Innovation Capacity (IC)	4.06	0.78	0.688**	0.755**	0.780**	1.000	
Competitive Advantage (CA)	4.10	0.80	0.750**	0.712**	0.765**	0.785**	1.000

**Note:** All correlations are significant at the 0.01 level ( $p < 0.01$ ).

Table 5 presents the Pearson correlation matrix: AI Integration (All), Risk-Taking (RT), Decision Innovation (DI), Innovation Capacity (IC), and Competitive Advantage (CA) are presented in Table 5. The correlations among these constructs present some important positive correlations, which indicate the interdependence between AI integration and organizational outcomes. All other constructs are positively correlated with AI Integration (All) ( $r = 0.750, p < 0.01$ ), with the strongest correlation being between AI Integration (All) and Competitive Advantage (CA) ( $r = 0.750, p < 0.01$ ). These findings indicate that the adoption of AI in organizations has a significant impact on the creation of competitive advantage, the stimulation of increased risk-taking, and the prompting of innovative decision-making processes. Likewise, Risk-Taking (RT) has a significant positive correlation with Decision Innovation (DI) ( $r = 0.672, p < 0.01$ ), Innovation Capacity (IC) ( $r = 0.755, p < 0.01$ ), Competitive Advantage (CA) ( $r = 0.712, p < 0.01$ ), which indicates that the more predisposed to risk-taking were organizations, the more likely they were to innovate, increase their potential to grow and improve their competitive positions in the market. Decision Innovation (DI) has both positive and significant relationships with both Innovation Capacity (IC) ( $r = 0.780, p < 0.01$ ) and Competitive Advantage (CA) ( $r = 0.765, p < 0.01$ ), which shows that decision-making processes based on innovation are more likely to develop greater innovation capacity and provide a competitive advantage to organizations. The innovation capacity correlations of Innovation Capacity (IC) and Competitive Advantage (CA) ( $r = 0.785, p < 0.01$ ) demonstrate the extreme importance of the role played by the Innovation Capacity in driving the long-term strategic benefits and market positioning. The mean scores of all constructs are above the midpoint of the scale, which means that the respondents overall reported a high level of AI integration, risk-taking, decision innovation, innovation capacity, and competitive advantage within their organizations. Competitive advantage demonstrates the largest mean, which indicates that companies see the benefits of strong performance that comes with AI-enabled practices. The values of standard deviation are not large and are moderate, with a small amount of dispersion of the data around the mean and a decent level of agreement between the respondents. In general, these findings indicate that there are no severe differences in the responses of the firms; moreover, the consistent and positive perception of these firms is observed.

**Table 6: Discriminant Validity Assessment (Fornell–Larcker Criterion)**

Construct	All	RT	DI	IC	CA
AI Integration (All)	<b>0.837</b>				
Risk-Taking (RT)	0.732	<b>0.825</b>			
Decision Innovation (DI)	0.721	0.672	<b>0.849</b>		
Innovation Capacity (IC)	0.688	0.755	0.780	<b>0.831</b>	
Competitive Advantage (CA)	0.750	0.712	0.765	0.785	<b>0.860</b>

**Note:** Diagonal values (bold) represent the square root of AVE. Off-diagonal values represent inter-construct correlations.

Table 6 shows that the Fornell-Larcker criterion demonstrates discriminant validity, as the square root of the AVE for each construct is greater than its correlations with other constructs. Thus, AI Integration, Risk-Taking, Decision Innovation, Innovation Capacity, and Competitive Advantage, while exhibiting notable positive associations, represent distinct constructs.

**Table 7: Hypothesis Testing**

Hypothesis	$\beta$	t-value	p-value	Supported?
H1: AI Integration → Risk-Taking	0.361	3.762	<0.001	Yes
H2: AI Integration → Decision Innovation	0.542	2.291	<0.05	Yes
H3: AI Integration → Innovation Capacity	0.583	3.628	<0.001	Yes
H4: AI Integration → Competitive Advantage	0.564	3.762	<0.001	Yes

Table 7 shows the results of the hypothesis testing that investigates the relationships between AI Integration (All) and key organizational outcomes, including Risk-Taking (RT), Decision Innovation (DI), Innovation Capacity (IC), and Competitive Advantage (CA). Path coefficients, t-values, and p-values are used to identify the strength and significance of these relationships. In the case of H1 (AI Integration → Risk-Taking), the path coefficient is 0.361, the t-value is 3.762, and the p-value is less than 0.001, which indicates that AI integration and risk-taking behavior in organizations have a significant positive relationship. This hypothesis is supported, and it is possible to suggest that the more organizations integrate AI technologies, the more likely it is that they will be involved in risk-taking because of the increased accuracy of decision-making. In the H2 (AI Integration into Decision Innovation), the path coefficient is 0.542, the t-value is 2.291, and the p-value is <0.05, which also indicates that there is a significant positive effect of AI integration on decision innovation. This hypothesis is substantiated, emphasizing that AI implementation encourages the innovative decision-making process in organizations. In the case of H3 (AI Integration → Innovation Capacity), the path coefficient is 0.583, the t-value is 3.628, and the p-value is less than 0.001, which once again proves that AI integration increases the capacity of organizations to innovate. The hypothesis has been confirmed, showing that with the integration of AI, firms are able to expand their capability of innovating and adapting to market forces. Lastly, a path coefficient of 0.564, a t-value of 3.762, and a p-value of <0.001 mean that AI integration has a positive impact on competitive advantage. This hypothesis is supported, which suggests that the integration of AI can enable organizations to attain a sustainable competitive advantage by enhancing efficiency, decision-making, and innovation. To sum up, all of these hypotheses are accepted, and the path coefficients indicate that there is a strong positive correlation between AI integration and organizational results, including risk-taking, decision innovation, innovation capacity, and competitive advantage.

## DISCUSSION

The study explored how different effects of AI Integration - Risk-Taking, Decision Innovation, Innovation Capacity, and Competitive Advantage - relate to UAE high-tech firms. Findings show us how AI can alter organizational behavior and long-term decision-driven competitiveness. The discussion below expresses these

findings in light of currently available theories and literature to articulate how novel the study is and to elaborate on the implications of the findings, both for practitioners and for scholars.

### **AI-Enabled Risk-Taking in High-Tech Firms**

The initial important observation of our research is that Risk-Taking in organizations has a significant positive impact on AI integration. This outcome is consistent with Risk-Taking Theory (Finucane et al., 2000), which states that organizations are more apt to take risky decisions when accessing better information and decision-making tools. The predictive analytics and real-time data processing are examples of AI technologies that are critical enablers of risk-taking behavior in this case. By offering information about the possible results and decreasing the level of uncertainty, AI enables organizations to evaluate the risks more closely, and thus risk-taking becomes less speculative and more calculated. This conclusion complements the previous studies, which revealed that AI technologies allow for decreasing the ambiguity and complexity of the decision-making process and, therefore, create a risk-tolerant environment (Brynjolfsson & McAfee, 2017). The results also reinforce Information Processing Theory, which posits that access to processed and actionable information enhances an organization's ability to make informed decisions. Consistent with the prior research (e.g., Rajagopal et al. (2022)), our findings reveal that the integration of AI results in an increasingly confident approach to risk-taking by decision-makers, who are better placed to handle and mitigate the risk in developing products, entering the market, and making strategic alliances. The peculiarities of this outcome are the recognition that AI is not merely a means of accelerating or streamlining the decision-making process (Ali et al., 2024) but a process that fundamentally changes the organizational culture to a more risk-taking attitude. AI allows companies to explore new concepts and business models, take calculated risks in those areas that were previously too uncertain. This is a departure from the traditional decision-making processes that could have been more conservative or risk-averse because of a lack of access to real-time information and predictive knowledge.

### **Decision Innovation as an Outcome of AI Integration**

Another positive aspect discovered in our study regarding AI integration is the encouragement of Decision Innovation in the workplace. The Open Innovation Theory supports this conclusion. It claims that when companies utilize both internal and external information systems, they are better positioned to improve the company's innovation processes. Artificial Intelligence has the ability to process and analyze very large sets of data and even forecast results. With this tool, companies can generate new ideas and make innovative changes in the workplace. Systems driven by AI and used for the purpose of making decisions can help organizations escape the confines of outdated, traditional models of making decisions. The systems can help the workplace become flexible and even innovative in the way that it solves operational problems. These findings build on the existing work that explains AI's disruptive nature in the process of making decisions (Chauhan et al., 2025). Organizations can refine their decision-making models using AI. It helps to process more variables and even make novel or radical decisions in unpredictable and complicated systems (Lee et al., 2019; Pagani & Champion, 2024).

AI enables decision automation a reality, and as a result, a great deal of time is saved that can be used to make decisions that are more innovative and change the trajectory of the company in a positive way. These findings strengthen the research and development that is focused on AI and decision support systems (Qin et al., 2024). If AI is integrated into the systems, it has the ability to improve the system and make better decisions. The role of AI in fostering a culture of innovation helps to validate different methods and solutions that decision-makers can explore. AI helps businesses adopt existing methodologies and embed continual innovation within the business. This becomes essential in fast-evolving, advanced technology industries because organizations must maintain an advantage over their competition through courageous and innovative actions.

### **Strengthening Innovation Capacity Through AI Integration**

Another key discovery of the given study is the impact of AI on Innovation Capacity. In our findings, AI implementation is a key factor that can increase the innovation capacity of an organization. This observation is in line with the Dynamic Capabilities Theory that supports the notion of firms' capacity to sense and grasp new opportunities in new environments. By giving firms real-time insights, speeding up decision-making, and creating a more flexible and responsive approach to innovation, AI technologies can help firms achieve this. AI enables creative problem-solving, enabling organizations to discover and respond to new opportunities faster. Having routine tasks automated means that human resources can devote more time to innovation since the routine tasks are automated. The product development cycles can also be improved using AI, as it can speed up the processes of product development, such as prototyping, testing, and analyzing the feedback on the product in the market. This result echoes the work of Shemshaki (2024), who suggests that AI's ability to streamline operations directly contributes to a firm's innovative output. The impact of this study lies in the fact that it will demonstrate how AI has the ability to enhance an organization's innovation capacity beyond process optimization to an organization that is truly innovation-driven in its organizational culture. AI is not only capable of facilitating innovation in technical fields but also allows working with different departments and teams more effectively and generating more ideas. To give an example, using AI-driven collaboration tools and platforms, employees can exchange insights and explore new solutions in previously unimaginable ways.

### **AI-Driven Sustainable Competitive Advantage**

The last important conclusion of the study is that there is a positive correlation between AI integration and Competitive Advantage. AI is also viewed as one of the strategic assets that allow companies to surpass their rivals by enhancing the efficiency of operations, the accuracy of decisions, and the ability to innovate. The findings of this paper affirm that the integration of AI results in a more competitive position since it helps companies to optimize their operations, save money, and more effectively respond to changes in the market. This observation concurs with the Resource-Based View (RBV), which postulates that firms can gain a competitive advantage by obtaining valuable, rare, and hard-to-imitate resources. Being a unique and valuable resource, AI gives organizations a sustainable competitive advantage. AI technologies are not just worthy of optimization of current operations, but also worthy of new business models and product offerings that can be difficult to replicate by a competitor (Barney, 1991). Through the provision of real-time data, predictive insights, and automation, AI will enable firms to be able to anticipate market trends and changes in consumer behavior and remain competitive in an increasingly dynamic market. The role of AI in the promotion of competitive advantage is not only confined to operational efficiency or cost reduction but also facilitates the ability to continue to innovate and adapt strategically. A key theme of Shemshaki (2024) and Teece (2023) was that one way AI has been applied is to optimize existing operations while, at the same time, enabling innovation. We find that AI is a part of the dynamic capabilities that organizations have to formulate to continue to be competitive as the fast-paced and high-technology industries evolve.

### **The Role of AI in Sustainable Innovations**

The results build on previous studies that highlight AI's positive impact on performance by suggesting that AI integration may promote sustainable innovation in high-tech companies. The positive correlation between AI integration, decision innovation, innovation capacity, and competitive advantage points toward AI's potential to help companies create more effective and resource-aware innovation mechanisms. AI's capacity to create process efficiencies and assist in resource allocation through predictive analytics, process optimization and data-based decision strategies can help address operational inefficiencies and resource wastage (Ali et al., 2024; Khan et al., 2026; Teece, 2023). From a sustainability point of view, innovation driven by AI can create economically and socially valuable products and services and redesign business practices to that end. Businesses that optimally use AI will position themselves to capture emerging sustainability-related trends, fulfill stakeholders' expectations, and craft innovations that achieve business goals with a focus on the environment and socially inclusive practices (Qayyum et al., 2025). In this context, AI can be thought of as a combination of technology, sustainable innovation and long-lasting business model resilience.

The results certainly have consequences for environmental management and corporate accountability. AI-aspect embedded analytic systems will enhance monitoring, forecasting, and evaluation systems, making resource and operational decisions easier to justify. For these reasons, AI will amplify the innovation focus of companies, while providing the means to create value that is sustainable, efficient, and adaptable. Future research can address the pathways that AI will create or enhance in environmental management systems and sustainability-dependent innovation.

### **Distinctive Insights from the Findings**

The novelty of the present study lies in the model, which is comprehensive enough in linking AI Integration with various organizational outcomes such as Risk-Taking, Decision Innovation, Innovation Capacity, and Competitive Advantage. Furthermore, in the present study, we have focused on the mature companies that have AI in their systems and in their organizational structure, while the present literature has mostly been on the first steps towards AI implementation and the potential consequences of implementing AI. Also, whereas the existing literature has investigated the individual impact of AI integration on some of these outcomes, not many studies have examined how all these outcomes are interrelated due to the integration of AI. This study provides valuable insights into the impact of AI on organizational culture, strategic decision-making, and sustained competitiveness, given the context of high-tech companies in the UAE. Moreover, the paper will also contribute to the discourse by showcasing how the use of AI can foster a culture of innovation and risk-taking within the organization. The findings highlight the multifaceted role of AI as a tool for operational efficiency and a catalyst for innovation and competitive advantage. This point of view questions the old-fashioned vision of AI as a supportive tool and puts it on the list of organizational success drivers.

## **IMPLICATIONS FOR PRACTICE**

The results of this study will have great value for managers in organizations that are, or are thinking about becoming, users of AI technologies. AI should not be seen as just an efficiency tool, but as something that can shape risk behavior, how innovative a firm is, and how efficient its operations are. AI is perceived as offering technologies to differentially reduce uncertainty and improve the quality and scope of risk taking, as well as more bold and innovative decisions in firms that are interested in developing such a culture. Furthermore, AI can be seen as a way of creating such a risk-taking culture with the understanding that some risks are necessary for innovation. Integrating AI technologies should be strategically thought out, since AI can provide information and real-time data that are ready to be acted upon. This is an important resource for managers, enabling them to take timely actions that align with market demands and trends, and is a key resource for innovators. AI can be used to automate the more mundane and routine tasks, thus liberating the workforce to engage in activities that are more creative and strategic in nature. The reshaping of routine operational tasks and innovation-driven activities will result in greater competitiveness for an organization, making it more responsive to market changes.

As decision-making and development processes are areas that can be greatly improved by AI, it is important that firms strengthen their innovation capabilities in these areas.

AI can speed up the innovation process by improving the time frame for prototypes, providing instant feedback, and making more rapid assessments for market predictions. Managers must consider AI technology that nurtures innovation and problem resolution collaboration within the teams and improves the phases of product development by introducing efficiency and creativity. AI makes it possible for organizations to guide the innovation process, resulting in an improved time to market, satisfying client needs, and surpassing competitors in an increasingly adaptable business environment. In addition, organizations should be selective in how they add AI into the overall framework of the business to be the market leader. AI can improve business performance, reduce costs, and improve the quality of strategic decisions, resulting in an improved market position. Managers should see AI as a long-term investment. If this technology is implemented in a thoughtful

way, it can provide sustainable competitive advantages of improved business performance, innovation, and flexibility. This paper has shown that organizations should focus on including AI in the strategic framework of the organization. This inclusion of AI should support the relentless focus of an organization on improvement and on being the market leader. As for the remainder of the practices expressed in the paper, companies must understand AI as an extremely beneficial resource for improving all processes, not just operational efficiency. By strategically using AI to improve the processes of innovation, decision-making, and risk management, managers can provide the organization with a long-term market competitive advantage.

The results have a few crucial takeaways for executives looking to utilize AI as a Tactical Organizational Capability. Most importantly, AI has to be viewed as a Strategic Asset. AI enhances the quality of decisions and the ability to innovate the firm and the firm's strategic position vis-a-vis competitors. AI helps managers make the right decisions and navigate market changes by providing ways to address previously unaddressed challenges and by helping managers anticipate future challenges. There is a need for the firm to incorporate AI into the different phases of the innovation process in order to speed up the development of new products, improve the ability to solve issues thanks to AI, and make data-based decisions. AI helps improve the speed of decisions and helps firms deal with new competitors that seem to have appeared out of nowhere. AI has to be synchronized with the goals that a firm wishes to accomplish. Most notably, the goals and aspirations of the firm in the long term. AI has to be incorporated into the firm in a manner that will improve the infrastructure of the firm technologically and in a manner that will improve the skills of the workers and enhance the processes of the firm in a manner that helps the firm innovate and develop new ideas. From a long-term perspective in a sustainable and socially responsible manner.

### **Limitations**

Although the study offers beneficial insights, several limitations must be acknowledged while interpreting the findings. First, the total sample consisted of 150 respondents from high-tech companies in the UAE. Although this sample size is adequate for structural equation modeling, producing satisfactory model fit and statistically significant results, a larger sample would capture more phenomena, increase power, and enhance the generalizability of the findings. Moreover, the study adopted a cross-sectional study design, which inhibits establishing cause-and-effect relationships; thus, the data for this study were collected from only high-tech firms in the UAE, which inhibits the external validity of the study. Furthermore, the study relied solely on self-reported data collected from representatives of the sampled firms. This may introduce bias among the respondents. The study focused only on the organizational and strategic outcomes of AI integration and did not consider (or measure) any of the related direct outcomes of (or on) sustainability (including social and environmental sustainability and/or sustainability accounting). Therefore, it is recommended that future studies collect data from larger samples, in different countries and from different industries, to further validate the relationships proposed in this study and to enhance the external validity of the results.

## **CONCLUSION AND FUTURE RECOMMENDATIONS**

The study findings suggest the impressive potential of AI to enhance risk appetite, innovative decision-making, and organizational competitive advantage. There is no dispute that the advent of AI is one of the things that may assist organizations to be more aware, more adaptive, and more competitive as the global business environment changes. The results tell us that we should consider AI to be a value-adding, strategic enterprise that optimizes business processes and leverages a more risk-driven and innovatively inclined enterprise culture. While the challenges of embedding AI in business processes are manifold, we hope that the results of this research will assist managers in their efforts to generate more profitable outcomes from the use of AI. Even though this research has a considerable number of findings about the effects of AI in business contexts, we are confident that more research is required in the identification of additional strategies to enhance AI integration in business. We strongly recommend the investigation of the interplay of business culture and AI adoption, AI integration, and business processes in future research, as AI is a catalyst for innovation.

AI adoption demands more flexible and adaptive workplace structures. For the most part, the most beneficial workplace structures for the adoption of AI are more organic and less hierarchical (Ali et al., 2024). Staff are enabled to be creative and work as a cross-functional team, both of which help to capture more of the benefits of advanced forms of AI. The model intended to be used in future research can be found in Appendix A. Future research should be focused on the study of the impact various workplace structures may have on the adoption and integration of AI, as well as the impact AI may have on the workplace in terms of enhanced creativity and innovation. Autonomy and flexibility in the workplace and the support structures may help employees utilize AI effectively and creatively. Furthermore, how workplace structures may evolve in response to the integration of AI across various industries and the interplay of workplace structure and AI integration will vary in different industry sectors, is of great importance. These explorations will enable workplaces to structure themselves in a manner that integrates AI in a manner that is both meaningful and optimally utilized.

Although this study is likely to be one of the first to address the direct impact of AI integration on organizational performance, we anticipate that future research examining the role of organizational structure in AI integration will become instrumental in grasping how the integration of AI within different contexts can produce organizational innovation and competitive advantage. Integrating AI with organizational flexibility and job autonomy will drive firms to innovate with AI and achieve long-term organizational sustainability.

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**TRANSPARENCY:** The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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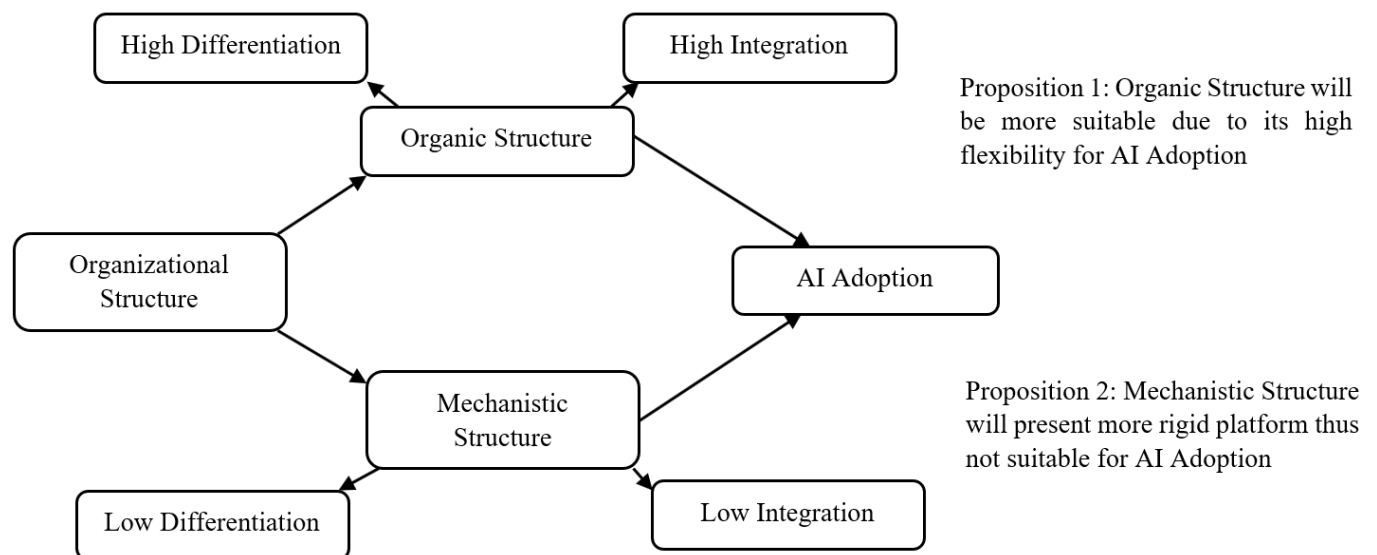
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Appendix A: Future research agenda on AI adoption for workplace structures