
| RESEARCH ARTICLE

The Use of Artificial Intelligence in Supporting Managerial Decision-Making: Perspectives of Management Information Systems Faculty Members in Saudi Universities

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| ABSTRACT

This study examines Management Information Systems faculty perceptions of the effectiveness and adoption of artificial intelligence (AI) in supporting managerial decision-making in Saudi universities. Using a survey with a five-point Likert scale, the study explored two main areas: faculty views on AI effectiveness in enhancing decision-making and factors influencing AI adoption, including perceived benefits, implementation challenges, and demographic influences. Results show strong faculty support for AI integration, particularly when aligned with ethical standards, data security, and accountability mechanisms. Security and risk mitigation were top priorities, followed by monitoring, evaluation, and transparency measures. Faculty also recognized operational benefits, such as improved decision accuracy, efficiency, and strategic planning, while noting barriers including system compatibility, technical integration, and time requirements. Demographic factors, such as age, experience, and departmental affiliation, shaped perceptions of AI adoption. The findings highlight the need for clear policies, targeted training, technical support, and ongoing monitoring to ensure responsible and effective AI implementation. Limitations include the focus on a single faculty group and reliance on self-reported data, suggesting future research should expand the sample, employ qualitative methods, and explore longitudinal changes in perceptions.

| KEYWORDS

Artificial intelligence, managerial decision-making, faculty perceptions, higher education, AI adoption, Saudi universities

| ARTICLE INFORMATION

ACCEPTED: 02 March 2024

PUBLISHED: 27 March 2024

DOI: 10.32996/jbms.2024.6.2.20

1. Introduction

Artificial Intelligence (AI) has become one of the most prominent modern technologies driving digital transformation across various sectors in the Kingdom of Saudi Arabia, aligning with the objectives of Vision 2030, which aims to enhance innovation, digital transformation, and institutional efficiency in education and administration (Saudi Vision 2030, 2016). In higher education, universities are increasingly adopting data-driven decision-making approaches, where accurate information and advanced analytics play a pivotal role in improving academic planning, allocating financial and human resources, enhancing academic performance, and increasing the overall effectiveness and efficiency of educational institutions. AI systems offer tremendous potential to improve decision-making processes, whether through predictive analytics that forecast future trends and help prepare for upcoming challenges, through Decision Support Systems (DSS) that provide comprehensive real-time information enabling administrators to make well-informed decisions more quickly, or through expert systems that rely on institutional knowledge to deliver precise recommendations across various areas of academic administration (Davenport & Ronanki, 2018).

Faculty members in Management Information Systems (MIS) departments are particularly important in this context due to their direct role in designing and implementing information systems, their deep understanding of data analysis, and their ability to develop tools that support institutional decision-making (Laudon & Laudon, 2020). Consequently, their awareness and perception of AI, as well as their understanding of its benefits and challenges, are crucial for guiding universities toward innovative, effective, and sustainable solutions that uphold ethical standards and ensure proper governance.

Despite the growing interest in AI in Saudi universities, empirical studies examining MIS faculty members' perspectives on the role of AI in supporting administrative decision-making remain limited, indicating a clear knowledge gap that requires investigation. This study is expected to provide valuable insights into the extent to which faculty members are aware of and familiar with AI technologies, their readiness to implement them in their work environment, and the challenges that may hinder AI adoption, such as data quality issues, infrastructure limitations, ethical concerns, and insufficient technical skills, as well as the role of institutional policies and procedures in facilitating or complicating adoption (Davenport & Ronanki, 2018). Therefore, this research aims to provide a solid scientific foundation for strategic decisions regarding the integration of AI into university decision-support systems, contribute to improving administrative and operational performance, and enhance the competitiveness of Saudi educational institutions in the era of digital revolution. Furthermore, the study offers an opportunity to understand the relationship between faculty members' technical knowledge and their readiness to adopt AI, and whether demographic or institutional factors influence these perceptions, thereby enabling the formulation of practical recommendations applicable to strategic planning, academic training, and institutional capacity building (Laudon & Laudon, 2020).

1.1 Problem of the Study

Despite the growing interest in Artificial Intelligence (AI) within Saudi universities and ongoing efforts to achieve digital transformation in higher education institutions, empirical studies examining the perspectives of faculty members in Management Information Systems (MIS) departments on the role of AI in supporting administrative decision-making remain limited. It remains unclear to what extent these faculty members are aware of AI applications, comprehend their potential benefits, recognize the challenges associated with their implementation, and identify the necessary requirements for successful adoption in the university environment. While the literature indicates that integrating AI into administrative decision-support systems can enhance the accuracy, efficiency, and speed of decision-making, educational institutions continue to face multiple challenges, including data quality issues, insufficient technical infrastructure, ethical concerns, limited technical skills, and the absence of clear regulatory policies (Davenport & Ronanki, 2018; Turban et al., 2018). Accordingly, there is a pressing need to investigate the perceptions and readiness of MIS faculty members toward the use of AI in supporting administrative decisions, with the goal of bridging the existing knowledge gap and providing practical recommendations that inform strategic planning and strengthen institutional capacity.

1.2 Objectives of the Study

1. To analyze the perceptions of Management Information Systems faculty members regarding the effectiveness of using artificial intelligence in supporting managerial decision-making processes in Saudi universities.
2. To explore the factors influencing the adoption of artificial intelligence to support managerial decision-making, including the anticipated benefits, potential challenges, and the role of faculty demographic variables in shaping these perceptions.

1.3 Questions of the Study

This study aims to address the following research questions:

Q1: What are the perceptions of Management Information Systems faculty members regarding the effectiveness of using artificial intelligence in supporting managerial decision-making processes in Saudi universities?

Q2: What factors influence the adoption of artificial intelligence to support managerial decision-making in Saudi universities, including expected benefits, potential challenges, and the role of faculty demographic variables in shaping these perceptions?

1.4 Significance of the Study

The study is significant as it provides empirical insights into MIS faculty members' perceptions, awareness, and readiness to adopt AI in administrative decision-making, addressing a notable gap in higher education research in Saudi Arabia. It contributes

theoretically by exploring the relationship between faculty technical knowledge, demographic factors, and AI adoption, enhancing the understanding of digital transformation in universities. Practically, the findings can guide administrators in implementing AI tools effectively, identifying potential barriers such as infrastructure limitations, skill gaps, and ethical concerns. The study also informs policy development, offering recommendations for regulatory frameworks and institutional support to ensure responsible and efficient AI integration. Furthermore, it supports strategic planning, academic training, and capacity-building initiatives aligned with Saudi Vision 2030. Ultimately, the research promotes innovation, data-driven decision-making, and sustainable technological adoption in higher education institutions.

2. Related Literature

2.1 Artificial Intelligence in Supporting Managerial Decision-Making in Higher Education

2.1.1 AI Technologies for Managerial Decision-Making

Artificial Intelligence (AI) refers to a broad set of technologies and computational techniques designed to simulate human decision-making and reasoning, including algorithms, neural networks, machine learning, and data mining. Emerging from the convergence of behavioral sciences, neural sciences, and computer science, AI systems can adapt, generalize, and predict outcomes, making them highly valuable for complex administrative and managerial tasks (Davenport & Ronanki, 2018). In higher education, AI is increasingly applied to support managerial decision-making, where accurate and timely decisions are critical for enhancing institutional efficiency and effectiveness. AI tools, such as predictive analytics, decision support systems, and expert systems, enable administrators to analyze large volumes of data, identify trends, forecast challenges, and provide actionable insights (Crompton & Burke, 2023). These technologies facilitate evidence-based decision-making in areas such as resource allocation, academic planning, staff management, and operational optimization. The adoption of AI also supports strategic planning by providing data-driven recommendations and reducing human bias in decision processes. MIS faculty play a pivotal role in designing, implementing, and evaluating AI-driven solutions, influencing how effectively these tools are integrated into university administration (Laudon & Laudon, 2020). Furthermore, AI adoption in higher education requires ethical considerations, including fairness, transparency, and data privacy, to ensure responsible and sustainable use. As Saudi universities embrace digital transformation aligned with Vision 2030, AI technologies are becoming central to enhancing administrative performance, innovation, and competitiveness (Saudi Vision 2030, 2016). Understanding faculty perceptions, readiness, and potential barriers is therefore essential for successful AI integration in managerial decision-making processes.

2.2 AI in Administrative Decision-Making: Benefits and Challenges

Artificial intelligence (AI) is an effective tool for enhancing administrative decision-making in educational and organizational institutions by enabling more accurate allocation of financial, human, and material resources. It supports academic planning through curriculum design, course scheduling, and predicting student enrollment patterns, facilitating data-driven future forecasting. AI also streamlines routine operational tasks such as record management, performance monitoring, and workflow automation, allowing staff to focus on strategic priorities. The technology improves decision accuracy by analyzing large datasets and detecting trends, increases efficiency by automating repetitive tasks, and promotes evidence-based planning rather than reliance on intuition. Despite its benefits, AI implementation faces challenges, including technical issues like infrastructure and system integration, the need to train staff in intelligent tool usage, and ethical concerns related to transparency, bias, and accountability. Additionally, regulatory and policy constraints may limit full adoption. Therefore, maximizing AI's potential in institutional management requires clear strategies, continuous staff development, and updated policies to ensure ethical, efficient, and effective use of technology (Tang, & Hodges, 2024).

2.3 Faculty Perceptions and Readiness for AI Adoption

MIS faculty play a crucial role in AI implementation because they act as intermediaries between technology and pedagogy, shaping curricula, guiding students, and influencing institutional AI policies. Their readiness to adopt AI is determined by multiple factors, including knowledge, skills, attitudes, and demographics (Alnasib, 2024; Mah & Groß, 2024; Uygun, 2024). Knowledge encompasses understanding AI concepts, trends, and applications, while skills refer to the practical ability to operate AI tools effectively. Attitudes involve openness to innovation, confidence in AI integration, and perception of AI as either an opportunity or a threat. Demographic factors, such as age, teaching experience, academic rank, and prior exposure to technology, also shape perceptions and willingness to adopt AI. Research indicates that faculty with higher self-efficacy, relevant

training, and institutional support show more positive perceptions and greater readiness for AI adoption (Mah & Groß, 2024; Razi et al., 2024). Conversely, concerns about ethical issues, reliability, workload, and usability may reduce enthusiasm. Younger faculty or those with less teaching experience often display greater openness, while formal professional development strengthens confidence across all demographics (Alnasib, 2024). Addressing perceptual and skill-based barriers is essential, including providing hands-on training, access to AI resources, and institutional policies that foster experimentation. Faculty perceptions not only influence adoption success but also impact how students engage with AI in their learning journey. Therefore, a strategic approach combining education, support, and incentives is necessary to cultivate readiness. Ultimately, MIS faculty are central agents of change, translating AI potential into practical, ethical, and pedagogically sound applications.

2.4 Institutional and Policy Context

Saudi universities have significantly strengthened governance and institutional support for digital transformation by establishing Boards of Trustees and dedicated digital transformation units, enhancing accountability, strategic oversight, and alignment with national objectives (Alenezi & Akour, 2023). Strategic plans, such as Prince Sultan University's 2024–2030 roadmap, emphasize innovation, responsible governance, digital maturity, and integration with Saudi Vision 2030 priorities (Prince Sultan University, 2024). The Saudi Electronic University's digital transformation strategy similarly aligns with national priorities by promoting e-services, data integration, and adoption of emerging technologies to accelerate learning, improve operational efficiency, and expand access (Saudi Electronic University, 2024, Prince Sultan University. (2024). National regulatory initiatives, including the 2023 National Framework for AI in Digital Learning, highlight the government's commitment to embedding digitalization in higher education through clear policies, standards, and performance indicators (Oxford Business Group, 2024). These governance and policy frameworks create an integrated institutional ecosystem that fosters innovation, strengthens cybersecurity, builds digital competencies, and supports sustainable digital transformation. Faculty development and capacity-building programs ensure effective utilization of digital tools while addressing resistance to change and bridging skills gaps. Digital transformation offices coordinate cross-functional implementation, monitor KPIs, and ensure alignment with strategic objectives and national benchmarks. Partnerships with private and international organizations further enhance scalability, knowledge exchange, and adoption of best practices. The integration of AI, e-learning platforms, and data-driven administrative systems reflects a commitment to a knowledge-based economy and enhanced research capacity. Through these efforts, universities are improving administrative efficiency, enabling scalable digital learning platforms, and supporting evidence-based decision-making. Institutional leadership plays a critical role in championing change, monitoring progress, and ensuring the sustainability of digital initiatives. Collectively, these measures demonstrate that Saudi higher education is building a coherent, strategic, and policy-aligned framework to achieve the digital transformation goals.

2.5 Previous Studies

Several studies have explored the role of artificial intelligence (AI) in enhancing managerial decision-making, highlighting both its potential benefits and associated challenges. Alsalman (2024) found that AI facilitates more informed and agile decisions in administrative, academic, and research contexts, though concerns regarding data privacy, limited technical expertise, and algorithmic bias remain significant. These considerations are particularly relevant in university settings, where decisions often involve multiple stakeholders and sensitive information.

In the context of leadership, Abositta et al. (2024) demonstrated that AI improves decision-making in engineering management and highlighted the moderating role of transformational leadership. Their findings suggest that effective leadership not only directly enhances decision-making but also amplifies AI's impact, indicating that leadership quality may similarly influence AI adoption in universities.

Empirical evidence from Saudi organizations further supports the benefits of AI. Aljohani and Albliwi (2022) reported that AI applications significantly enhance decision quality in terms of speed, accuracy, and acceptance. Successful adoption, however, depends on adequate training, system relevance, and organizational preparation—factors that are equally critical in higher education contexts. Similarly, Lasmri and Basahel (2022) linked AI adoption to improvements in organizational performance, individual productivity, and institutional culture, suggesting that AI's impact extends beyond individual decision-making to shape collaborative and efficient academic environments.

From a systemic perspective, Guo and Wang (2021) identified five key factors—environment, data, participants, organization, and technology—that influence AI's effectiveness in decision-making. Their work underscores the importance of robust data infrastructure and organizational readiness as prerequisites for successful AI integration.

Collectively, these studies indicate that AI has substantial potential to enhance managerial decision-making in academic contexts. However, its effectiveness depends not only on technological capabilities but also on organizational readiness, leadership quality, and proper training. Despite this growing body of evidence, there remain gaps regarding the perspectives of academic faculty—particularly in Saudi universities—highlighting the need for further research to understand how AI adoption can best support informed managerial decisions in higher education.

3. Research Methodology

3.1 Research Design

The researcher utilized the descriptive survey method, a systematic approach for collecting and analyzing data on a specific issue or topic within a defined timeframe. This method enables the collection of detailed information that reflects current trends or conditions related to the subject under study. Its primary aim is to produce accurate and reliable conclusions through careful analysis of the data, followed by objective interpretation to explain the findings in the context of the research problem.

3.2 Research Population

The research population for this study consisted of faculty members from King Khalid University, Najran University, and Bisha University in the Kingdom of Saudi Arabia. During the academic year 1445 AH, the total number of faculty members across these institutions was approximately 560. This population included individuals from various colleges and departments, representing a diverse range of academic disciplines and areas of expertise. Selecting this population allowed the study to obtain a comprehensive understanding of the research topic as it relates to academic staff. Focusing on this group ensures that the findings are relevant and applicable to the educational environment of these prominent universities.

3.3 Research Sample

A sample of 110 lecturers from King Khalid University, Najran University, and Bisha University in the Kingdom of Saudi Arabia was selected using the simple random sampling method for data collection.

3.3.1 Demographic Characteristics of the Research Sample

Frequencies and percentages were calculated for the research sample based on the selected demographic variables. The primary variables examined included the following

1. years of experience

(Data related to this variable should follow here in a table or descriptive format.)

Table (1): Frequency and Percentage Distribution of the Variable “Years of Experience”

Categories	Frequency	Percentage (%)
Less than 5 years	11	11%
From 5 years to <15 years	22	22%
15 years or more	77	77%
Total	110	110%

The table presents the distribution of years of experience among 110 individuals. The majority, 70% (77 individuals), have 15 years or more of experience, indicating a highly experienced population. Those with 5 to less than 15 years of experience constitute 20% (22 individuals), representing a moderately experienced group. Only 10% (11 individuals) have less than 5 years of experience, showing that newcomers are relatively few. This distribution highlights a workforce dominated by long-tenured members, suggesting strong expertise and organizational knowledge. The small proportion of less experienced individuals may imply limited influx of new talent or slower workforce renewal. Overall, the data reflects a skewed distribution toward highly experienced individual. Such insights are valuable for workforce planning, training, and succession strategies.

2. Academic qualification

Table (2): Frequency and Percentage Distribution of the Variable “Academic Qualification”

Academic Qualification	Frequency	Percentage (%)
Bachelor’s Degree	35	35%
Master’s Degree	48	48%
Doctorate (PhD)	27	27%
Total	110	110%

The table presents the academic qualifications of 110 individuals. The largest proportion, 44% (48 individuals), hold a Master’s degree, indicating that most respondents have advanced education. Those with a Bachelor’s degree account for 32% (35 individuals), while 25% (27 individuals) hold a Doctorate (PhD). This distribution shows that the majority of the population is highly educated, with nearly three-quarters holding at least a Master’s degree. The smaller share of PhD holders reflects the specialized nature of doctoral-level qualifications. Overall, the data highlights a well-qualified population, suggesting strong academic expertise, research potential, and professional competency.

3.3 Research Instrumentation

The study employed a questionnaire as the primary data collection tool to gather information relevant to the research topic. The questionnaire was carefully designed to ensure it captured the necessary data to address the research questions and objectives. Using a structured format enabled the researcher to collect standardized responses from participants, allowing for consistent and comparable data analysis.

3.3.1 Validity of the research instrument

A panel of experts reviewed the questionnaire to assess its clarity, relevance, and completeness, ensuring the validity of the instrument. Their feedback was incorporated to enhance content validity and to guarantee that the questionnaire accurately measures the intended constructs.

3.3.2 Internal consistency reliability

Internal consistency was assessed by calculating the correlation coefficients between each item and the total score of its respective dimension. The results indicate that all items reliably measure their intended constructs.

Table 3: Pearson Correlations Between Each Item and Overall Perspectives of MIS Faculty Members in Saudi Universities

Item Number	Statement	Correlation Coefficient
1	AI applications in managerial decision-making must comply with security standards and should not pose risks to organizational data .or personnel	0.547**
2	The data used by AI systems for managerial decisions must be .transparent, accurate, and comply with ethical standards	0.695**
3	AI systems must support fair decision-making and should not introduce bias or discrimination in managerial processes.	0.744**
4	Confidential organizational and employee information must be protected, and AI systems must not disclose sensitive data .unlawfully	0.669**

5	AI applications for management must rely on reliable, verified, and up-to-date data to ensure informed decision-making.	0.700**
6	Managers and staff must have the ability to opt-in or choose the extent of AI system usage in decision-making processes.	0.658**
7	Mechanisms for accountability, monitoring, and periodic evaluation of AI systems in managerial decision-making must be established, ensuring compliance with ethical and legal standards.	0.702**
8	AI systems used in management must be designed to minimize bias and ensure equitable treatment of individuals and organizational units.	0.768**

Note: Correlation coefficients () indicate statistical significance at $p < 0.01$.

Table 3 shows the Pearson correlation coefficients between each item and the overall construct representing the perspectives of MIS faculty members regarding AI in managerial decision-making. All items are significantly correlated at $p < 0.01$, confirming their relevance and reliability. Items related to fairness and bias prevention (Items 3 and 8) exhibit the highest correlations (0.744 and 0.768), indicating that faculty consider these aspects most critical. Data reliability and transparency (Items 2 and 5), accountability mechanisms (Item 7), and manager autonomy (Item 6) also demonstrate strong correlations, highlighting their importance. Security standards (Item 1) show the lowest but still significant correlation (0.547), suggesting it is comparatively less emphasized. Overall, the results indicate that the items reliably measure key ethical and operational considerations for AI-supported managerial decision-making.

Table 4. Pearson Correlations Between Factors Influencing the Adoption of Artificial Intelligence for Managerial Decision-Making and Faculty Perceptions

Item Number	Statement	Factor	Correlation with "Adoption of AI for Managerial Decision-Making"
1	AI can improve the accuracy of managerial decisions	Anticipated Benefit	0.752**
2	AI enhances decision-making efficiency and speed	Anticipated Benefit	0.789**
3	AI supports better strategic planning and forecasting	Anticipated Benefit	0.731**
4	Limited institutional support hinders AI adoption	Potential Challenge	0.641**
5	Lack of training limits my ability to use AI effectively	Potential Challenge	0.803**
6	Time required to learn and implement AI is a barrier	Potential Challenge	0.774**
7	AI tools are not always compatible with organizational processes	Potential Challenge	0.712**
8	Ethical concerns or uncertainty about AI decision-making	Potential Challenge	0.682**
9	Technical problems and system integration issues	Potential Challenge	0.768*
10	Faculty/manager age, experience, or department influences perceptions of AI adoption	Demographic Factor	0.655**

Table 4 presents the Pearson correlations between factors influencing AI adoption for managerial decision-making and faculty perceptions. Anticipated benefits, including improved decision accuracy, efficiency, and strategic planning, show strong positive correlations (0.731–0.789), indicating that faculty who recognize these advantages are more likely to support AI adoption. Potential challenges, such as lack of training, time constraints, technical issues, and ethical concerns, also exhibit moderate to strong positive correlations (0.641–0.803), suggesting that awareness of barriers does not necessarily deter adoption but highlights areas needing support. Notably, lack of training (0.803**) and time required to learn AI (0.774**) are the strongest correlates among challenges. Demographic factors, including age, experience, and department, show a moderate correlation (0.655**), reflecting the influence of individual characteristics on perceptions. Overall, both benefits and challenges are significantly associated with faculty perceptions, emphasizing that adoption attitudes are shaped by a balanced consideration of opportunities and obstacles. These findings underscore the importance of institutional support, targeted training, and clear implementation strategies to facilitate AI integration in managerial decision-making.

3.3.3 Reliability of the research instrument

In the assessment of the reliability of the questionnaire, Cronbach's α coefficients were calculated for the items associated with each primary axis. As a widely accepted measure of internal consistency, Cronbach's α evaluates the extent to which items within a given scale are interrelated and collectively capture the intended latent construct. The resulting coefficients indicated satisfactory levels of internal consistency across all axes, which affirms the reliability and coherence of the instrument in measuring the targeted dimensions.

Table 5. Cronbach's Alpha Reliability Coefficients for the Research Instrument

Axis No	Axis Title	Number of Items	Cronbach's Alpha Value (α)
Axis 1	Overall Perspectives of MIS Faculty Members in .Saudi Universities	8	0.82
Axis 2	Factors Influencing the Adoption of Artificial Intelligence for Managerial Decision-Making and Faculty Perceptions	10	0.80
Overall Instrument		18	0.82

Table 5 presents the Cronbach's Alpha reliability coefficients for the research instrument and its two main axes. The results indicate that the instrument demonstrates high internal reliability, with alpha values ranging from 0.80 to 0.82. Specifically, Axis 1 ("Overall Perspectives of MIS Faculty Members in Saudi Universities") achieved an alpha of 0.82, reflecting strong consistency among its eight items. Axis 2 ("Factors Influencing the Adoption of Artificial Intelligence for Managerial Decision-Making and Faculty Perceptions") also showed strong reliability with an alpha of 0.80, suggesting that its ten items are cohesively measuring the intended construct. The overall reliability of the instrument ($\alpha = 0.82$) further confirms that the questionnaire items collectively provide a dependable measure of the study variables. These coefficients exceed the commonly accepted threshold of 0.70, indicating that the instrument is suitable for use in academic research and capable of producing consistent and dependable results.

4. Results

4.1 Results for Research Question 1

Research Question: What are the perceptions of Management Information Systems faculty members regarding the effectiveness of using artificial intelligence in supporting managerial decision-making processes in Saudi universities?

To address this question, the means and standard deviations were calculated for the items included in the first section of the survey. These items were designed to measure the perceptions of Management Information Systems faculty members regarding the effectiveness of artificial intelligence in enhancing managerial decision-making processes within Saudi universities. The survey statements focused on faculty views of the potential benefits, contributions, and overall value of integrating AI into decision-making in higher education.

Responses were collected using a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The calculated means and standard deviations provide insight into the overall faculty perceptions and the degree of consensus regarding the effectiveness of AI in supporting managerial decision-making.

Table 7 presents the means and standard deviations for all items related to this construct and provides a summary of Management Information Systems faculty members' perceptions regarding the effectiveness of using artificial intelligence to support managerial decision-making processes in Saudi universities.

Item Number	Axis Statements	Mean	Standard Deviation	Rank	Degree of Agreement
1	AI applications in managerial decision-making must comply with security standards and should not pose risks to organizational data or personnel	4.70	0.55	1	Strongly Agree
2	The data used by AI systems for managerial decisions must be transparent, accurate, and comply with ethical standards	4.49	0.61	5	Agree/Strongly Agree
3	AI systems must support fair decision-making and should not introduce bias or discrimination in managerial processes.	4.50	0.71	7	Strongly Agree
4	Confidential organizational and employee information must be protected, and AI systems must not disclose sensitive data unlawfully	4.53	0.66	3	Strongly Agree
5	AI applications for management must rely on reliable, verified, and up-to-date data to ensure informed decision-making	4.51	0.70	6	Strongly Agree
6	Managers and staff must have the ability to opt-in or choose the extent of AI system usage in decision-making processes	4.52	0.67	4	Strongly Agree
7	Mechanisms for accountability, monitoring, and periodic evaluation of AI systems in managerial decision-making must be established, ensuring compliance with ethical and legal standards	4.56	0.73	2	Strongly Agree
8	AI systems used in management must be designed to minimize bias and ensure equitable treatment of individuals and organizational units	4.43	0.72	8	Agree

The table reveals a strong consensus on the importance of ethical, secure, and responsible AI in managerial decision-making, with all mean scores above 4.4. Security and risk mitigation emerge as the highest priority, as reflected by Item 1 (Mean = 4.70), highlighting the critical need to protect organizational data and personnel. Accountability, monitoring, and periodic evaluation of AI systems (Item 7, Mean = 4.56) are also highly valued, emphasizing compliance with ethical and legal standards. Data reliability and transparency (Items 2 and 5) are important to ensure informed decision-making, while opt-in provisions for

managers and staff (Item 6) indicate the preference for human oversight. Items addressing fairness and bias minimization (Items 3 and 8) received slightly lower agreement, suggesting that while equity is important, it is secondary to security and accountability. Standard deviations ranging from 0.55 to 0.73 indicate moderate to high consensus across respondents. Overall, the findings reflect a strong organizational commitment to implementing AI systems that are secure, accountable, reliable, and ethically sound. The slight variations in ranking highlight nuanced priorities, with protection of sensitive information and system oversight as dominant concerns. This underscores the importance of establishing clear policies, regular monitoring, and ethical guidelines for AI integration in management. Even the lower-ranked items, however, demonstrate agreement on fairness and responsible use, showing that bias mitigation remains a relevant consideration. In sum, respondents advocate for AI that balances operational efficiency with ethical responsibility, safeguarding both data and individuals. These insights provide a roadmap for organizations to prioritize security, accountability, and ethical practices in AI-driven decision-making.

4.2 Results for research question 2

Research Question: What factors influence the adoption of artificial intelligence to support managerial decision-making in Saudi universities, including expected benefits, potential challenges, and the role of faculty demographic variables in shaping these perceptions?

To explore this question, means and standard deviations were calculated for survey items assessing faculty perceptions of AI adoption. The items addressed three key dimensions: the expected benefits of AI in managerial decision-making, potential challenges or barriers to its implementation, and the influence of faculty demographic characteristics on these perceptions. Participants rated each item using a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The analysis provides insights into how faculty view the advantages and limitations of AI adoption. Additionally, it highlights how factors such as age, experience, and academic rank may shape these perceptions. The results offer a comprehensive understanding of the facilitators and obstacles to AI integration in Saudi universities. This information can guide policy development, training programs, and strategic planning for AI adoption in higher education.

Table 8 presents the descriptive statistics (means and standard deviations) for these items. Higher mean scores indicate stronger agreement or more positive perceptions regarding AI adoption, whereas lower scores indicate disagreement or perceived barriers.

Item Number	Axis Statements	Mean	Standard Deviation	Rank	Degree of Agreement
1	AI can improve the accuracy of managerial decisions	4.70	0.51	6	Strongly Agree
2	AI enhances decision-making efficiency and speed	4.69	0.50	8	Strongly Agree
3	AI supports better strategic planning and forecasting	4.68	0.53	9	Strongly Agree
4	Limited institutional support hinders AI adoption	4.67	0.54	10	Strongly Agree
5	Lack of training limits my ability to use AI effectively	4.71	0.53	5	Strongly Agree
6	Time required to learn and implement AI is a barrier	4.72	0.51	3	Strongly Agree
7	AI tools are not always compatible with organizational processes	4.73	0.51	1	Strongly Agree
8	Ethical concerns or uncertainty about AI decision-making	4.70	0.52	6	Strongly Agree
9	Technical problems and system integration issues	4.72	0.52	3	Strongly Agree
10	Faculty/manager age, experience, or department influences perceptions of AI adoption	4.73	0.51	1	Strongly Agree

Table 8 shows that Management Information Systems faculty in Saudi universities hold very positive perceptions regarding the adoption of artificial intelligence (AI) to support managerial decision-making. All items received mean scores above 4.6, placing

them in the “Strongly Agree” category, which indicates strong consensus among respondents. The highest-ranked items (Rank 1: compatibility of AI tools with organizational processes and influence of faculty/manager demographics; Rank 3: time required for implementation and technical issues) highlight practical and contextual factors that could influence AI adoption. Items related to the benefits of AI, such as improving decision accuracy, enhancing efficiency, and supporting strategic planning, also received high agreement (Ranks 5–6), demonstrating that faculty recognize the value AI brings to managerial processes. The low standard deviations (0.50–0.54) suggest minimal variability in responses, reflecting a high level of agreement across participants. Overall, the table indicates that faculty both appreciate the advantages of AI and acknowledge certain barriers that may affect its effective implementation.

5. Discussion

The findings of this study offer valuable insights into Management Information Systems faculty perceptions regarding the effectiveness and adoption of artificial intelligence (AI) in supporting managerial decision-making processes in Saudi universities. The results highlight both the perceived benefits and the challenges of AI implementation, as well as the role of ethical, technical, and contextual factors in shaping faculty attitudes.

5.1 Perceptions of AI Effectiveness in Managerial Decision-Making

The results indicate that faculty members strongly support the integration of AI into managerial decision-making, particularly when it aligns with ethical standards, security protocols, and accountability measures. Security and risk mitigation were ranked as the highest priority (Item 1, Mean = 4.70), reflecting faculty concerns over protecting sensitive organizational and personnel data. This aligns with previous literature emphasizing that trust in AI systems is heavily influenced by data security and privacy considerations.

Mechanisms for accountability, monitoring, and periodic evaluation (Item 7) were also highly valued, indicating that faculty recognize the importance of governance frameworks to ensure responsible AI use. While fairness and bias minimization were slightly lower in ranking, they remain important, suggesting that ethical considerations are essential but may be perceived as secondary to security and oversight. These findings support prior research indicating that ethical AI implementation is critical for organizational acceptance and effective decision-making.

Overall, the high means and low standard deviations suggest strong consensus among faculty that AI can enhance decision-making effectiveness if implemented responsibly. This emphasizes that successful AI integration in higher education requires a balance between technological efficiency and ethical responsibility.

5.2 Factors Influencing AI Adoption

The second research question examined the factors influencing AI adoption, including expected benefits, challenges, and demographic influences. Faculty strongly agree that AI improves decision accuracy, efficiency, and strategic planning (Items 1–3), indicating recognition of the potential operational benefits. However, practical challenges, such as tool compatibility, technical integration issues, and the time required for implementation, were also highly ranked (Items 6, 7, 9), highlighting the need for infrastructure readiness and training programs.

Interestingly, demographic factors, such as age, experience, and departmental affiliation, were also considered influential in shaping perceptions of AI adoption (Item 10, Mean = 4.73). This finding aligns with prior studies suggesting that personal and organizational characteristics significantly influence the adoption of new technologies (Venkatesh et al., 2003). Faculty perception appears to be shaped not only by technological factors but also by their professional background and experience, emphasizing the importance of tailored training and support initiatives to ensure effective AI integration.

5.3 Implications for Policy and Practice

The study’s findings carry important implications for higher education institutions in Saudi Arabia. First, AI adoption strategies must prioritize security, ethical compliance, and accountability frameworks to build trust among faculty and staff. Second, providing adequate training, technical support, and guidance is essential to overcome barriers such as lack of familiarity,

integration challenges, and time constraints. Third, policy development should consider faculty demographics and departmental contexts to customize implementation approaches that maximize adoption and effectiveness.

The findings also suggest a need for ongoing monitoring and evaluation to ensure AI systems remain transparent, unbiased, and aligned with institutional goals. By emphasizing ethical, secure, and accountable AI, universities can foster a culture of responsible innovation while leveraging AI to enhance managerial decision-making processes.

6. Conclusion

This study explored Management Information Systems faculty perceptions of artificial intelligence (AI) in supporting managerial decision-making in Saudi universities. Findings indicate that AI can enhance decision-making effectiveness if implemented ethically, securely, and with appropriate oversight. Faculty emphasized protecting sensitive data, ensuring transparency, accountability, and minimizing bias in AI systems. They recognized AI's benefits, including improved decision accuracy, efficiency, and strategic planning, but also noted practical challenges, such as system compatibility, technical integration, and time requirements. Leadership and faculty readiness emerged as critical factors for successful adoption. Als Salman (2024) highlighted AI's role in enabling informed and agile decisions while cautioning about privacy and algorithmic concerns. Similarly, Abositta, Adedokun, and Berberoğlu (2024) found that transformational leadership amplifies AI's positive impact on decision-making. Empirical evidence from Saudi organizations supports AI's potential to improve decision quality and organizational performance (Aljohani & Albliwi, 2022; Alasmri & Basahel, 2022). Effective AI adoption requires robust data infrastructure, institutional support, and targeted training (Guo & Wang, 2021). In higher education, balancing operational efficiency with ethical responsibility is essential to build trust and acceptance among faculty and staff. Overall, AI offers significant opportunities to enhance managerial decision-making, but its successful integration depends on addressing technical, human, and organizational factors while fostering transparency, accountability, and leadership support.

6.1 Recommendations:

1. Develop clear policies and governance frameworks to ensure ethical, secure, and transparent use of AI in management.
2. Provide training programs and technical support to facilitate AI adoption and overcome implementation barriers.
3. Consider faculty demographics and departmental contexts when planning AI initiatives to enhance acceptance and effectiveness.
4. Establish continuous monitoring and evaluation mechanisms to ensure AI systems remain reliable, unbiased, and aligned with institutional objectives.

These findings offer a roadmap for universities seeking to implement AI responsibly and effectively, ensuring that technological advancement enhances both decision-making quality and organizational integrity.

6.2 Limitations and Future Research

While the study provides valuable insights, several limitations should be acknowledged. First, the sample was limited to Management Information Systems faculty, which may not fully represent the perspectives of faculty in other disciplines or administrative staff. Second, the study relied on self-reported perceptions, which could be influenced by personal biases or limited exposure to AI tools. Future research could expand the sample to include multiple universities and disciplines and incorporate qualitative methods such as interviews or focus groups to gain deeper insights into faculty experiences with AI. Additionally, longitudinal studies could explore changes in perceptions as AI adoption progresses and institutional support structures evolve.

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