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RESEARCH ARTICLE

INTEGRATION OF ARTIFICIAL INTELLIGENCE IN MANAGEMENT INFORMATION SYSTEMS TO ENHANCE DECISION-MAKING PROCESSES IN YEMENI UNIVERSITIES: A QUALITATIVE STUDY

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Abstract

This study delves into the integration of Artificial Intelligence (AI) in Management Information System (MIS) in university and examines the pivotal role of MIS in enhancing decision-making processes. The transformative capabilities of AI are revolutionizing universities by making operations more efficient, precise, and data-driven. By leveraging the integration of AI, MIS can significantly improve decision-making processes within universities, enabling more accurate, timely, and objective outcomes. Using a qualitative approach, including semi-structured interviews, the study assesses the real-world applications of AI in automating tasks, improving data utilization, and personalizing experiences. The study underscores the various benefits of integrating AI within university systems, such as improved decision-making, administrative efficiency, and institutional responsiveness. Additionally, the study addresses the challenges associated with AI adoption in MIS, including technical, ethical, and organizational hurdles. It also explores the future prospects of AI in university MIS, suggesting that continuous advancements and strategic implementations of AI-enabled MIS can lead to superior organizational outcomes. The findings from this study indicate that the adoption of AI-enabled MIS holds substantial potential for enhancing university decision-making processes, ultimately contributing to better organizational performance and competitive advantage.

Keywords: Artificial intelligence; Management information systems; Decision-making.

1. Introduction

To effectiveness decision-making at universities need to merge Artificial Intelligence (AI) into Management Information Systems (MIS) [1]. Artificial Intelligence, characterized by machine learning algorithms and cognitive computing capabilities, augments the analytical prowess of organizations by deciphering complex datasets and generating actionable insights [2]. While there has been extensive research on the operational and technical dimensions of MIS, relatively less attention has been given to its qualitative impact on decision-making frameworks within organizations. Decision-making, by its nature, involves complex, multifaceted processes influenced by several factors including organizational structure, culture, leadership, and external market condition [3]. Universities Management is a critical function within organizations, focusing on the enhancing administrative operations, strengthening accountability, and enabling faster evidence-based decision [4]. Effective universities practices are essential for optimizing employee performance, ensuring compliance with labor laws, and fostering a positive organizational culture. The modern university environment is increasingly shaped by digital transformation and the need for data-driven management. Globally, the adoption of Artificial Intelligence (AI) has been instrumental in enhancing efficiency, decision-making, and governance processes in higher education institutions [4]. However, the integration of AI has transformed these processes, making them more data-driven and objective.

MIS facilitate the collection, storage, and analysis of vast amounts of data, enabling university professionals to make informed decisions that drive organizational success. For instance, AI-powered MIS can improve workforce planning by predicting staffing needs based on historical data and student capacity in scientific departments, laboratory space constraints and faculty-to-student ratios. Additionally, AI-driven MIS can enhance employee engagement by analyzing feedback from

various sources, such as surveys and social media, to identify underlying issues and recommend targeted interventions.

Recent advances in the fusion of AI and MIS show great improvements in both technological and application dimensions. Algorithmically, advances in machine learning and deep learning have provided for increasingly accurate predictive analytics and ever "turning of the crank. Cutting-edge natural language processing for business intelligence [1]. The primary focus of this study is to investigate the integration of Artificial Intelligence (AI) in university and examine how Management Information Systems (MIS) can enhance decision-making processes within this domain. The purpose of this research is to elucidate the benefits that AI brings to MIS, identify the challenges associated with its adoption, and explore the broader implications for organizational efficiency. By delving into these aspects, the study aims to provide a comprehensive overview of the current landscape of AI in university and offer valuable insights into its future potential. Several research questions guide this study: Firstly, how do top management perceive the influence of the integration of AI in MIS on their decision-making processes? this inquiry seeks to identify the specific ways in which integration of AI in IMS can enhance the accuracy, speed, and objectivity of university decisions, thereby optimizing university functions. Secondly, what are the organizational and cultural factors that affect the adoption and effective use of integrating of AI into MIS for decision-making? this question explores the various advantages that AI offers, including improved talent acquisition, enhanced employee performance management, and better compliance with regulatory requirements, all of which contribute to more effective university. Thirdly, how do advanced analytics and emerging technologies integrated of AI in MIS impact the quality and speed of decision-making? this investigation addresses the potential barriers to integration of AI adoption in MIS, such as technical difficulties, ethical concerns, and organizational resistance, which can impede the successful implementation of AI technologies. Finally, how do Management Information Systems facilitate the integration of AI in university? this question examines the crucial role of MIS in supporting the effective use of AI technologies within university functions, highlighting how integration of AI in MIS can streamline processes, improve data management, and provide actionable insights that enhance overall university decision-making. The significance of this study lies in its potential to provide valuable insights for university professionals and organizational leaders by examining the integration of AI in MIS in university. Understanding the benefits and challenges of AI integration can enable organizations to develop effective strategies for adopting and utilizing these technologies, ultimately enhancing university practices. AI technologies offer numerous advantages, including the automation of routine tasks and the provision of advanced analytics for decision-making, which can significantly improve efficiency and effectiveness in university functions. MIS play a pivotal role in facilitating this integration, ensuring that university professionals have access to accurate and timely data necessary for informed decision-making. By leveraging MIS, organizations can harness the full potential of AI, transforming raw data into actionable insights that enhance various university functions such as talent acquisition, performance management, and faculty engagement. This study aims to explore these dynamics in depth, providing a comprehensive analysis of the impact of integration of AI in MIS on university and the crucial role of MIS in enhancing decision-making processes. The findings of this research can contribute to the broader discourse on the role of technology in improving organizational efficiency and competitiveness, offering valuable guidance for organizations looking to implement AI- driven university solutions. Through this exploration, the study seeks to advance the understanding of how AI can transform university practices and support overall organizational success, highlighting the strategic importance of integrating advanced technologies in managing university. The primary objective of this study is to explore how AI can transform decision-making within the MIS. Yet Yemeni's higher education institutions are still hamstrung by bureaucratic bottlenecks, paper- based procedures and inadequate resource distribution and outdated systems, situating a traditional managerial system as insufficient for the demands of today's complex world of academics [4]. Similarly, AI-powered performance management systems can track employee performance in real-time, provide personalized feedback, and identify areas for development. MIS are instrumental in integrating AI into universities. Integration of AI into MIS from predictive analytics, forecast enrollment patterns, assess student satisfaction, and enhance resource allocation has convinced universities that the role of data-driven decision-making is no longer simply a way to better react to changes in surround conditions, but now also a means of predicting future trends more reliably [5].

AI Presents substantial prospects to address these challenges by Streamlining administrative processes, bolstering responsibility, and expediting, Data-driven decision making [4]. Yet, despite its potential, AI Integration in MIS in Yemeni universities facing challenges. Hence, this research explores how AI can enhance educational management in Yemeni universities and its relatedness to current administrative issues and decision-making process as well as the overall university effectiveness.

This research seeks to explore these influences qualitatively, providing a comprehensive understanding of how integration of AI in MIS is used in practice and the challenges associated with its adoption. Through this exploration, the study aims to contribute to both academic theory and managerial practice, offering insights that can help organizations optimize their use of integration of AI in MIS for better decision-making.

2. LITERATURE REVIEW

[6] mentioned that required to clear policies, oriented training, technical assistance and continue supervisor to assure accruable and efficacy AI application. This is suitable for educational institutions in developing countries. The integration of AI in MIS has been a subject of significant research, revealing its potential to transform decision-making. Theoretical frameworks, such as the Technology Acceptance Model and Decision Support Systems, provide a basis for understanding how AI can be implemented in MIS. Previous studies have shown that AI can improve recruitment, performance management, and employee engagement. However, there are gaps in research regarding the practical implementation of AI-enabled MIS and their impact on decision-making processes. This literature review synthesizes existing research, identifies key themes, and highlights areas for further exploration. [7] stated that AI played main role in decision-making through automating complicated processes, improving forecasting precision and long-term benefits. [8] revealed that AI a large efficiency in enlistment, agenda and marking while decision-making through predictive analytics. [1] contributed in enhance technology acceptance model in strategic dimensions and practically to guide AI integration in MIS for continence competitive. [6] highlighted the required for transparent policies, goal-oriented instruction, help line and real time tracking to assume responsibility and efficient AI execution. [9] found that major ramification for policymakers and academic leaders denoting the need for strategic planning, investment in infrastructure and setting up of obvious ethical guidelines to make certain that AI is distributed efficiency and equitably. [10] suggested that the optimal results generated from implementations of AI-enabled MIS. All those studies discussed leverage AI with MIS to make the enlightened decisions.

2.1 Theoretical Frameworks and Models

The integration of AI in MIS is underpinned by several theoretical frameworks and models that help explain and guide its adoption and implementation. AI-enhanced MIS systems support decision-making by integrating large datasets, automating analysis, and generating predictive insights. Prior research links AI adoption to improved organizational performance, yet most studies emphasize measurable outcomes rather than examining internal cognitive and organizational transformations. By understanding this framework, organizations can better facilitate the adoption of AI technologies in MIS, ensuring that these tools are both effective and user-friendly. This comprehensive model helps explain structured approach to improving decision-making processes through the use of computerized systems [10]. Together, these frameworks provide a robust theoretical foundation for examining the integration of AI in MIS and identifying the factors that facilitate or hinder its adoption frameworks. Contributes in contextualizes AI adoption theory within developing higher education ecosystems.

2.2 Enhancing Decision-Making Processes with AI and MIS

The integration of Artificial Intelligence (AI) and Management Information Systems (MIS) significantly enhances decision-making processes within MIS by improving accuracy, speed, and objectivity. [11] Revealed that AI tools have been applied in various aspects of healthcare decision-making. The use of AI can improve the quality, efficiency, and effectiveness of healthcare services by providing accurate, timely, and personalized information to support decision-making. These technologies can identify patterns and trends that may not be immediately apparent to human analysts, thus providing deeper insights into AI improves decision-making processes within MIS. MIS, on the other hand, support this process by ensuring that data is collected, stored, and managed systematically, making it easily accessible for analysis [12]. [7] recommended that digital infrastructure and adopting AI underscoring for organization looking to adopt AI in their MIS. [13] found that contribute on-going research that attempts to address the complex and multidimensional challenge of big data analytics implementation in higher education. This not only speeds up the recruitment process but also improves the accuracy of candidate selection by ensuring that evaluations are based on consistent criteria. In performance management, AI and MIS can monitor employee performance in real time, providing continuous feedback and identifying areas for improvement. For instance, AI algorithms can analyze performance data to predict future performance trends and recommend personalized development plans for employees [5]. [14] found that the less time of processing data and high accuracy decision-making are achieved by integrated AI into MIS. [7] Mentioned that AI enables businesses to provide personalized experiences via tools such as chatbots, virtual assistants, and predictive analytics, facilitating efficient customer segmentation, behavior forecasting, and customized marketing strategies that enhance satisfaction, loyalty, and retention. found that organizations using AI-driven recruitment tools reduced their time-to-hire by 30%, while improving the quality of hires by 25%. This study

underscores the potential of AI to streamline recruitment processes and enhance decision-making accuracy. [2] discovered that highlights the need for robust data governance policies and talent development initiatives to foster a culture of data-driven decision-making. By leveraging these insights, the company was able to implement targeted retention strategies, resulting in a significant reduction in turnover rates. Additionally, a survey conducted by [15] revealed that companies using AI and MIS for performance management reported higher levels of employee productivity and engagement compared to those relying on traditional methods. [16] concluded that AI-powered MIS shows a lot of promise for making decisions better by making analysis more accurate. For example, AI has a power to predict for the need to provide MIS managers to make the right decision to recruitment and training strategies [10]. [17] contributed that AI play a pivotal role in enhancing processes of business leaders.

Propositions

Based on the conceptual framework, the following propositions are proposed:

Proposition 1

The integration of AI in MIS is positively related to decision-making efficacy within organizations. [18] mentioned that integrated AI into MIS enhancing decision making. [19] stated that integrated AI in MIS improving the decision-making processes.

Proposition 2

University culture moderates the relationship between integration of AI in MIS adoption and decision-making efficacy.

Proposition 3

The integration of emerging technologies such as AI and big data analytics into MIS will strengthen the positive relationship between MIS adoption and decision-making effectiveness.

Proposition 4

Universities with higher levels of technical expertise will experience greater decision-making effectiveness from integration of AI in MIS adoption compared to organizations with lower levels of technical expertise.

Proposition 5

The perceived ease of use and perceived usefulness of integration of AI in MIS positively influence the adoption of MIS within organizations.

Proposition 6

The quality of data in integration of AI in MIS positively influences the effectiveness of organizational decision-making.

Proposition 7

User training and competency in using integration of AI in MIS positively affect the effective utilization of MIS in decision-making.

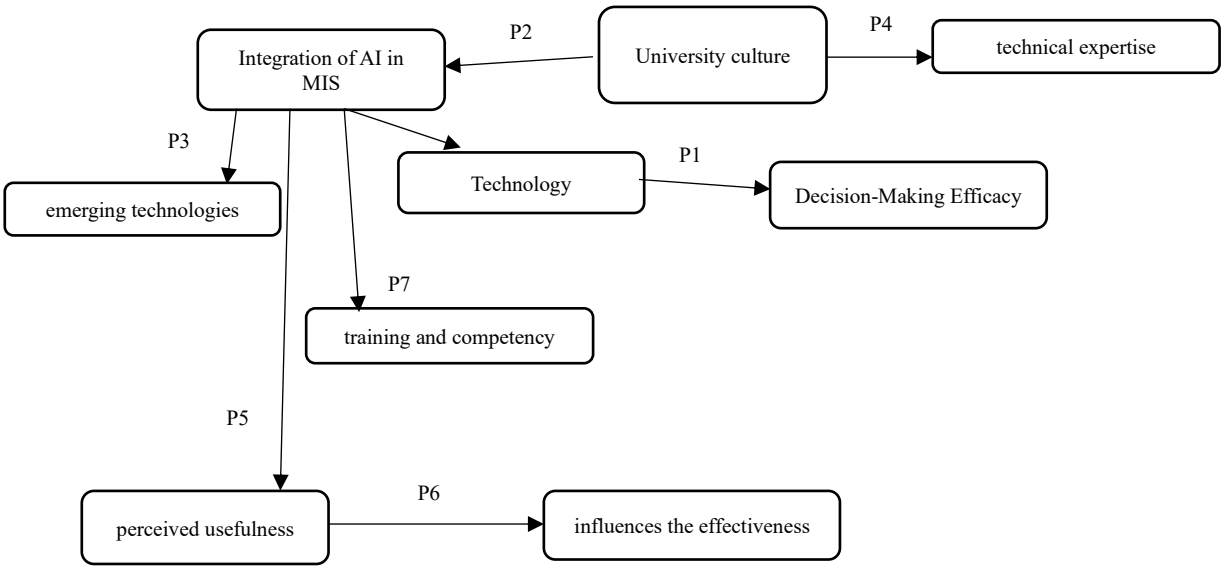

Fig. 1: Conceptual Framework Diagram

3. RESEARCH METHODOLOGY

3.1 Research Design

This study used an exploratory qualitative research approach to investigate how universities used integration of AI in MIS to improve their decision-making. Investigating intricate, context-dependent phenomena, like the interactions between AI and organizational structures, cultures, and practices, was a perfect fit for qualitative research. The necessity to comprehend the firsthand knowledge of universities decision-makers and how they identified and applied AI in their day-to-day activities led to the adoption of a qualitative methodology. The study's use of a numerous case study methodology made it possible to examine how AI might be integrated into MIS across various universities. [5] stated that it was found that in Pakistani business sector artificial intelligence usage is very minimal as compared to global usage. The research obtained insights into the integration of AI in MIS applications and how various organizational factors influenced its adoption and utilization by examining several universities.

3.2 Sample Selection

Universities in Yemen that had integrated AI with MIS for decision-making made up the study's sample to guarantee data diversity. The participants in this qualitative study were drawn from faculty members affiliated with eight selected public and private universities in Yemen. The objective was to gather a variety of viewpoints and experiences in order to provide a thorough grasp of the variables affecting the uptake and application of AI integration in MIS. Purposive sampling was used to choose universities that fit particular requirements. In order to achieve saturation, a sample size of eight colleges was deemed enough, guaranteeing that sufficient data was gathered to offer significant and varied insights. This quantity of instances preserved the depth of the investigation inside each case while enabling comparative analysis across colleges. The limitations of the study are used cross-sectional rather than longitudinal analysis with qualitative design applied in Yemeni universities.

3.3 Data Collection Techniques

For this qualitative study, data were collected through semi-structured interviews with faculty members from selected Yemeni universities. This approach allowed participants to express their experiences, perceptions, and interpretations regarding the use of AI in supporting managerial decision-making and were well-suited to the exploratory nature of the study. The use of semi-structured interviews enabled the researcher to explore in-depth insights and nuanced understandings of the phenomenon, while maintaining consistency across interviews through a prepared interview guide. Flexibility was made possible by semi-structured interviews, which allowed participants to offer fresh perspectives and ideas while allowing the researcher to thoroughly examine particular issues. Based on the conceptual framework and study questions, an interview guide was created to make sure the interviews included important subjects such the function of integrating AI in MIS in the university's decision-making processes, how decision-makers saw AI's utility and usability, how AI affected the speed, accuracy, and quality of choices, and organizational obstacles and achievements in implementing and integrating AI. Depending on the participants' choices and availability, each interview took place either in person or via video conference and lasted between sixty and ninety minutes. With the participants' permission, all interviews were audio recorded and then transcribed for analysis. To complement and triangulate the interview results, pertinent organizational documents were examined in addition to the interviews. Decision-making reports, internal memos, MIS implementation methods, and data analytics outputs were among the documents that offered specific instances of how AI integration was applied in real-world situations. This approach offered further insights into the decision-making procedures used by each university and assisted in validating and contextualizing the data acquired from the interviews. Non-participant observations of AI usage sessions or decision-making meetings were carried out wherever possible. First-hand knowledge of how AI integration was applied in real-time decision-making scenarios and how organizational dynamics and culture affected AI utilization was obtained through observations. This approach provided a more nuanced view of AI's function in routine organizational procedures and was especially helpful in documenting the interactions between decision-makers and AI.

3.4 Data Analysis

Thematic analysis, a flexible and rigorous method for finding, examining, and reporting patterns within qualitative data, was used to examine the information gathered from interviews, documents, and observations [20]. Because it enabled the methodical investigation of the major themes that surfaced from the data and were consistent with the research questions and propositions, thematic analysis was a good fit for this study. In order to obtain a thorough grasp of the data, the analysis started with familiarization, which involved reading and rereading documents, observation notes, and interview transcripts. The data was then methodically coded, with each code denoting a significant piece of information pertinent to the research questions. Both deductive (based on the conceptual framework) and inductive (based on the data) codes were produced. Following the coding of all the data, related codes were grouped to create more general themes that reflected the study's main conclusions and were consistent with the research questions and assumptions. To make sure they

appropriately reflected the data, these identified themes were examined and improved. They were also checked for coherence within themes and to make sure they were different from one another. Sub-themes were created to capture the intricacy of the data after each topic was precisely specified. The last stage included combining the ideas into a cohesive story that was backed up by participant quotations and pertinent information from records and observations. This story explained how MIS AI integration affected universities decision-making procedures and offered insights into decision-makers' experiences in various universities.

3.5 Validity and Reliability

Several tactics were used to guarantee the study's validity and reliability. As data was gathered from several sources (interviews, document analysis and observations) to cross-check and corroborate findings for guaranteeing trustworthiness. After the first data analysis, member checking was also put into place, asking participants to check the results to make sure they were accurate and to affirm that their opinions had been accurately reflected. In order to enable transferability to different contexts and organizations, the study made use of dense descriptions, including in-depth summaries of the instances and context.

3.6 Ethical Considerations

The confidentiality and rights of the participants were safeguarded by this study's adherence to the highest ethical standards. All participants gave their informed consent prior to the start of the investigation, guaranteeing that they were aware of the goals of the study, their rights as participants, and the privacy safeguards in place. Participants were guaranteed the confidentiality of their data and the freedom to leave the study. To further safeguard participant names and private organizational data, all gathered data was anonymized. Only the research team had secure access to the documents, transcripts, and audio recordings.

4. RESULTS AND FINDINGS

The results and conclusions from the qualitative investigation of how AI integration in MIS affects universities decision-making processes are presented in this part. According to the methodology, semi-structured interviews, document analysis, and observations were used to gather the data. Key decision-makers from a variety of levels' perspectives on the function of AI integration in MIS in their decision-making processes, the difficulties encountered, and the overall effect of AI integration in MIS on organizational performance are all included in this thorough analysis. The results are organized according to the main topics that surfaced from the data, each of which reflects the complexities of integrating AI into MIS and how it affects decision-making.

Table 1: Participant Demographics

Participant ID	Role	Years of Experience
Participant A	Chancellor	10
Participant B	Vice chancellors	8
Participant C	Secretary General	12
Participant D	Deans	5
Participant E	Vice deans	15
Participant F	Head of Departments	6
Participant G	Vice HOD	9
Participant H	Director of Administrative Affairs	7
Participant I	Finance Manager	14
Participant J	Registrar	4
Participant K	Digital Transformation Officer	11
Participant L	Chief Information Officer	13

Source: Field Data (2026)

4.1 Theme 1: Enhancing Decision-making

The widespread perception among decision-makers that integration of AI into MIS improves the caliber of organizational decisions was one of the most important conclusions drawn from the interviews. Participants frequently stated that the use of AI in MIS gives them access to vital information and analytical tools that help them make wise decisions. One university's chancellor, for example, said, "The integration of AI in MIS we employ gives us real-time data on admission performance, which helps us make strategic extended investment decisions more effectively" -Participant A.

A number of respondents emphasized how data analytics capabilities play a part in converting unprocessed data into useful insights when AI is integrated into MIS. "With our integration of AI in MIS, we can study student performance data and attrition rates to inform our academic strategies and prospective benefits," a vice chancellor's director of administrative affairs underlined. The quality of our dean judgments is greatly improved by this data-driven approach, according to Participant B.

These claims were corroborated by the examination of university documentation, including reports produced by the incorporation of AI in MIS. Analysis of documents showed that universities using AI integration in MIS for decision-making reported more accurate trend and outcome predictions, which eventually improved their strategic positions in their respective markets. The results are consistent with previous research, which emphasizes how integrating AI into MIS can improve decision quality by facilitating better access to pertinent data.

4.2 Theme 2: Expedite Decision-Making Processes

The acceleration of decision-making processes made possible by the incorporation of AI in MIS was another recurring issue. The automation of regular reporting and data aggregation procedures, according to the participants, enables speedier reactions to new business issues. For instance, a Registrar director stated, "In the past, it took weeks to compile student data for decision-making. We can now produce thorough reports in a few hours thanks to the integration of AI in MIS, which enables us to modify our admissions tactics for students more quickly. Participant J.

Many participants agreed that integrating AI into MIS may improve workflows and cut down on the amount of time spent gathering and analyzing data. "Our management module in the integration of AI in MIS automates status updates and resource allocation, which means we can focus more on strategic decision-making rather than administrative activities" (Participant F) said a Head of Department.

Teams utilizing AI integration in MIS tools were able to swiftly obtain the information they required, which resulted in more effective conversations and quicker consensus-building, according to observations made during decision-making meetings. This quicker decision-making is in line with earlier studies showing that incorporating AI into MIS deployment effectively can shorten organizational response times [6].

4.3 Theme 3: Enriching Collaboration and Communication

The results also showed that decision-makers in universities collaborate and communicate more when AI is included into MIS [21]. In their integration of AI in MIS, participants emphasized that information sharing across departments was made easier by centralized data repositories and collaborative tools. The Vice HOD stated, "Our integration of AI in MIS acts as a central hub where different departments can access the same data, minimizing silos and boosting collaborative decision-making" (Participant G).

Numerous universities stated that better team alignment resulted from the adoption of AI integration in MIS. "With real-time dashboards and shared access to data, our information and employee teams can communicate more efficiently," stated a Secretary General. We can adapt to changes and student needs considerably more effectively because to this alignment," said Participant C.

Evidence of cross-departmental projects that were started as a result of improved communication made possible by the integration of AI in MIS was found through the qualitative examination of documents. These results support the claim that incorporating AI into MIS can be crucial in removing organizational barriers and promoting a collaborative culture, both of which are necessary for efficient decision-making.

4.4 Theme 4: Obstacle in integration of AI in MIS Implementation

Although numerous advantages of integrating AI into MIS were documented, the results also highlighted a number of difficulties universities encountered when putting these systems into place and using them. Participants frequently expressed concern about the systems' complexity and the learning curve that goes along with it. "Despite the benefits, the initial learning phase for our staff was difficult," a vice head of department said. Our decision-making process was first delayed because many staff felt overwhelmed by the system, according to Participant G.

The problem of data integrity and quality was another challenge that was considered. Concerns over the accuracy of the data produced by their AI integration in MIS were voiced by a few respondents, which may result in poor decision-making. One dean emphasized, "Decisions based on the data will likewise be faulty if the data entered into the system is wrong. For us, maintaining data integrity is a continuous challenge. - Participant D.

These results are in line with the body of research that highlights that, even with the advantages of integrating AI into MIS, universities frequently face implementation difficulties, such as problems with data management and user training. According to the qualitative data, universities need to take proactive measures to overcome these obstacles in order to optimize the advantages of integrating AI into MIS.

4.5 Theme 5: Effect of Organizational Culture

The investigation showed that how AI integration in MIS is viewed and used in decision-making processes is strongly influenced by organizational culture. Participants observed that universities with a culture that values making decisions based on data likely to gain more from integrating AI into MIS. "We have cultivated a culture in our business where judgments are based on statistics rather than intuition," said a chancellor. The impact of our AI integration in MIS has been enhanced by this culture alignment, according to Participant H.

On the other hand, universities that take a more conventional approach to decision-making had trouble incorporating AI in MIS completely into their operations. "Some team members still prefer to rely on their instincts rather than the data offered by the integration of AI in MIS," a vice dean said. For us, changing that perspective has been a continuous journey. Participant E.

These results are consistent with previous studies that emphasize how crucial it is to match organizational culture with technology initiatives in order to increase the

uptake and efficacy of AI integration in MIS. The qualitative data emphasizes that in order to effectively utilize the potential of integrating AI into MIS, universities must develop a data-driven culture.

4.6 Theme 6: Data Governance & Data Quality in integration of AI in MIS

Findings related to data accuracy, reliability, and integrity were grouped data governance and data quality in MIS. Which posits that the quality of data in MIS significantly influences decision-making effectiveness. Chief Information Officer consistently emphasized that inaccurate or incomplete data could lead to faulty decisions, indicating that data quality is a critical determinant of effective decision-making - Participant L.

4.7 Theme 7: User Capability, Training & System Competence

Issues related to user skills, training, and competency were categorized under user capability, training, and system competence. This theme aligns suggests that adequate training and user proficiency enhance the effective utilization of MIS in decision-making. Digital Transformation Officer reported that insufficient training and limited system familiarity initially hindered their ability to fully leverage MIS for decision-making - Participant K.

4.8 Theme 8: Future Perspectives on MIS

Lastly, participants were requested to discuss their thoughts on how AI will be integrated into MIS at their universities in the future. Many expressed optimisms about the potential for advanced analytics, artificial intelligence, and machine learning to enhance decision-making processes further. A digital transformation officer noted, "We are looking at how AI can help us analyze data patterns and trends more effectively. This could alter our decision-making capacities" - Participant K.

The qualitative analysis indicated a growing awareness among universities of the importance of continuous improvement and innovation in integration of AI in MIS. Many participants stressed the need for ongoing training and investment in technology to stay competitive. A chief information officer concluded, "As technology advances, we must adjust our MIS through integration in AI to ensure it continues to assist our decision-making processes efficiently" Participant L.

These insights point to a significant trend in the evolving landscape of integration of AI in MIS, suggesting that organizations must embrace innovation and technological advancements to remain relevant in an increasingly data-driven world. The results of this qualitative investigation highlight the complex impact of integration of AI in MIS on universities decision-making procedures. Participants reported that integration of AI in MIS enhances decision quality, accelerates decision-making processes, improves collaboration, and fosters a culture of data-driven decision-making. To optimize the advantages of integration of AI in MIS, universities must, however, also address implementation, data quality, and organizational culture issues. Furthermore, the future of integration of AI in MIS appears promising, with many universities keen to explore advanced technologies to further enhance their decision-making capabilities.

5. DISCUSSION

The results of the qualitative study on the impact of AI integration in MIS on organizational decision-making processes are interpreted in the discussion section. In order to provide a thorough grasp of the consequences of integrating AI in MIS in universities, this analysis combines the knowledge gathered from observations, document reviews, and interviews with the body of current literature. The main themes found in the results are the focus of the discussion, which considers their importance and ramifications for theory, practice, and further study.

5.1 Improve Decision making

The results show that incorporating AI into MIS greatly improves the caliber of organizational decisions. Participants frequently emphasized that having fast and reliable data made it easier to make well-informed decisions, which supports earlier studies that show how data analytics can improve organizational outcomes. According to the qualitative insights, integrating AI into MIS not only gives decision-makers access to crucial data but also permits them to do more in-depth analysis, which helps them comprehend complicated challenges more nuancedly. In today's fast-paced business world, where universities depend more and more on data-driven insights to be competitive, improving decision quality is essential. A Secretary General pointed out that using AI in MIS enables universities to take use of real-time data, resulting in greater strategic investment decisions. This is consistent with the research, which holds that timely information access is essential for making wise decisions. In order to leverage data for better decision quality, enterprises must give top priority to implementing a strong integration of AI in MIS frameworks.

5.2 Expedite Decision-Making Processes

According to the study, incorporating AI into MIS speeds up decision-making by simplifying data gathering and reporting, allowing universities to react quickly to changing circumstances. In dynamic marketplaces where responsiveness can result in competitive advantages, decision-making speed is becoming more and more important. Participants' observations, such as the finance director's observation of shorter reporting times, corroborate previous studies showing that efficient

integration of AI in MIS deployment can shorten organizational reaction times. Even while decision-making is accelerated, it is crucial to remember that quick decisions shouldn't come at the expense of their quality. Organizations must put procedures in place to make sure that speed does not result in rash decisions based on insufficient information as they use AI integration in MIS to make decisions more quickly. Future study on this trade-off between speed and quality is crucial, especially as universities negotiate increasingly complicated decision-making settings.

5.3 Enriching Collaboration and Communication

The results demonstrate how integrating AI into MIS can enhance decision-makers' cooperation and communication at different organizational levels. Cohesive decision-making requires an atmosphere of information sharing, which was fostered by centralized data repositories and collaborative tools made possible by AI integration in MIS. Participants' experiences show how interdepartmental alignment and cooperation are becoming increasingly important in today's linked organizational environments. These results are consistent with previous research that highlights the value of dismantling silos in order to improve decision-making. Organizations must be aware of potential obstacles to cooperation, such as deeply ingrained departmental cultures and opposition to change. Future studies could examine the particular organizational traits that promote productive cooperation as well as the tactics that can be used to get beyond opposition to information sharing and cooperative decision-making.

5.4 Obstacle in AI in MIS Implementation

Even though integrating AI into MIS has many advantages, it is impossible to ignore the difficulties in doing so. Organizations frequently deal with the complexity of integration of AI in MIS, problems with data quality, and the requirement for continuous training, according to the qualitative observations. This is consistent with earlier research showing that many universities encounter major challenges when putting technology solutions into practice. The technology officer's remarks regarding the difficulties encountered during the initial implementation phase demonstrate how the complexity of integrating AI in MIS might result in a steep learning curve for staff members. To fully realize the promise of integrating AI in MIS, organizations must give user assistance and training top priority. Techniques like thorough training programs, user-friendly interfaces, and continuous technical assistance help lessen these difficulties and improve system user engagement. Furthermore, as the accuracy of judgments depends on the integrity of the data being examined, data quality is a major challenge. To guarantee data accuracy and consistency and to give decision-makers confidence in the information provided by AI in MIS, organizations should set up strict data governance structures.

5.5 Effect of Organizational Culture

The qualitative results show that corporate culture has a significant impact on how AI integration in MIS is seen and applied. While universities with more conventional methods to decision-making encounter difficulties in adopting AI in MIS, those that foster a culture of data-driven decision-making typically optimize its advantages. The literature emphasizes the significance of cultivating a mindset that values data and analytics and echoes the need for cultural alignment with technology endeavors. Addressing cultural barriers to data use is critical for universities looking to successfully integrate AI in MIS. The shift to a more cooperative and knowledgeable decision-making environment can be aided by change management programs that foster an environment that is receptive to data-driven insights. Future studies could examine the particular cultural characteristics that either facilitate or impede the effective integration of AI in MIS, offering practitioners insightful information on how to improve their university cultures.

5.6 Data Governance & Data Quality in integration of AI in MIS

Findings related to data accuracy, reliability, and integrity were grouped data governance and data quality in MIS. Which posits that the quality of data in MIS significantly influences decision-making effectiveness. Chief Information Officer consistently emphasized that inaccurate or incomplete data could lead to faulty decisions, indicating that data quality is a critical determinant of effective decision-making - Participant L.

Table 2: Summary of Key Findings by Theme

Theme	Key Findings
Enhancing Decision making	Integration of AI in MIS enhances the quality of decisions by providing real-time, accurate data that informs strategic choices. Participants reported improved forecasting accuracy and more informed decision-making processes.
Expedite Decision-Making Processes	The integration of AI in MIS streamlines reporting and data analysis, significantly reducing time required for decision-making. Automation allows for quicker responses to business challenges.
Enriching Collaboration and Communication	Centralized data repositories and collaborative tools foster information sharing across departments. This alignment improves interdepartmental collaboration and enhances decision-making efficiency.
Obstacle in integration of AI in MIS Implementation	Complex systems and associated learning curves hinder effective use. Issues with data quality and integrity present risks, as inaccurate data can lead to flawed decisions.
Effect of Organizational Culture	Organizations with a data-driven culture maximize the benefits of integration of AI in MIS. Resistance to change from traditional decision-making approaches poses challenges for full integration of AI in MIS.
Data Governance & Data Quality in integtrtion of AI in MIS	Data accuracy, reliability, and integrity were grouped data governance and data quality in MIS. Which posits that the quality of data in MIS significantly influences decision-making effectiveness.
User Capability, Training & System Competence	User skills, training, and competency were categorized under user capability, training, and system competence.
Future Perspectives on MIS	Participants expressed optimism about the role of advanced analytics and ML in enhancing decision-making capabilities. Continuous training and investment in technology are essential for staying competitive.

5.7 Data Governance & Data Quality in integration of AI in MIS

Issues related to user skills, training, and competency were categorized under user capability, training, and system competence. This theme aligns suggests that adequate training and user proficiency enhance the effective utilization of MIS in decision-making. Digital Transformation Officer reported that insufficient training and limited system familiarity initially hindered their ability to fully leverage MIS for decision-making - Participant K.

5.8 Future Perspectives on MIS

The participants' perspectives on the future of integration of AI in MIS indicate a strong interest in leveraging advanced technologies such as artificial intelligence (AI) and machine learning to further enhance decision-making capabilities. This finding is consistent with the broader trend in organizational settings where decision-makers are increasingly looking to integrate innovative technologies to gain a competitive edge. Adoption of these cutting-edge technology poses new difficulties, such as the requirement for specialized knowledge and the moral dilemmas raised by data usage. Organizations must ensure they have the necessary infrastructure, training, and governance mechanisms in place to navigate these complexities effectively. Future research should investigate the consequences of incorporating modern technology such AI integration in MIS and the potential impacts on decision-making processes.

6. Conclusion

A more complex knowledge of how technology and decision-making interact in contemporary organizations has been shown the qualitative investigation of how AI integration in MIS affects organizational decision-making processes. The study's conclusions show that AI in MIS is a transformative force that greatly improves decision quality, speeds up decision-making procedures, encourages teamwork, and develops a data-driven culture rather from just being a tool for data collecting and reporting. According to the study, participants in a variety of professions believe that AI integration in MIS is crucial for promoting well-informed decision-making. Decision-makers are better equipped to react quickly to new possibilities and problems when they have access to real-time data and can provide intelligent assessments. The results show that incorporating AI into MIS has increased forecasting accuracy, allowing universities to strategically position themselves in a competitive university. This is in line with previous research that highlights how integrating AI into MIS can improve overall organizational effectiveness. Additionally, the study emphasizes how important university culture is in determining the uptake and efficacy of AI integration in MIS. Universities that adopt a data-driven decision-making culture typically get more out of their AI investments in MIS. On the other hand, people who use traditional decision-making techniques find it difficult to completely incorporate AI in MIS into their workflows. Gaining a competitive edge in the data-driven business world of today and realizing the full benefits of AI integration in MIS depend on this cultural fit. Nevertheless, the report also notes a number of difficulties in incorporating AI into MIS implementation. Concerns about data quality, system complexity, and the organizational change management required to guarantee efficient utilization were raised by participants. Initial decision-making processes may be hampered by the learning curve of new systems, requiring continuing staff support and training. Furthermore, maintaining data integrity is still a major challenge because errors might lower the caliber of judgments based on data supplied by MIS. In order to be competitive and adapt to changes, organizations understand the value of investing in

technical developments, training, and ongoing improvement. The development of AI integration in MIS involves more than just adding new tools; it also entails cultivating an innovative culture that welcomes change and uses data to make strategic decisions. By offering qualitative insights into the challenges of incorporating technology into organizational processes, this study adds to the expanding body of literature on AI integration in MIS and decision-making. It draws attention to the complexity of integrating AI into MIS, highlighting both its potential advantages and the obstacles that businesses must overcome to optimize its efficacy. The knowledge gained from this study will be essential for directing the effective integration of AI in MIS in universities' decision-making frameworks as they continue to develop in a world that is becoming more and more data-driven. This will ultimately result in enhanced performance and long-term competitive advantage.

Reference:

[1] D. P. F. A. A. A.-K. I. R. Wasesa, "Integration of Artificial Intelligence in Management Information Systems to Improve the Effectiveness of Strategic Decision-Making in the Digital Era," *Journal of Computer Science, Information Technology and Telecommunication Engineering (JCoSITTE)*, pp. 923-929, 2025.

[2] A. A. A. P. S. N. Azis, "Unveiling the Synergy : Exploring the Intersection of Artificial Intelligence , Digital Management Information Systems , and Marketing Management in a Qualitative Research Study," *International Journal of Artificial Intelegence Research*, pp. 188-212, 2023.

[3] M. N. T. A. M. Mahbub, "A QUALITATIVE ANALYSIS OF THE INFLUENCE OF MANAGEMENT INFORMATION SYSTEMS ON ORGANIZATIONAL DECISION-MAKING PROCESSES," *Acta Informatica Malaysia (AIM)*, pp. 87-93, 2024.

[4] S. O. A. A. B. M. R. M. S. M. S. M. W. G. Tumburku, "Artificial Intelligence : A Tool For Advancing Educational Management In Nigerian Universities For Enhanced Decision-Making And Administrative Efficiency," *International Journal of Innovative Social & Science Education Research*, p. 235–244, 2025.

[5] M. Y. Z. N. M. S. Ramish ،"Impact of Artificial Intelligence on the Business Decisions : A Qualitative Perspective "،*Journal of Development and Social Sciences* ،p. 414–422 .2025 ،

[6] M. H. Alshareef, "The Use of Artificial Intelligence in Supporting Managerial Decision-Making: Perspectives of Management Information Systems Faculty Members in Saudi Universities," *Journal of Business and Management Studies*, p. 190–202, 2024.

[7] M. H. H. M. Z. H. B. H. M. B. M. H. L. Hasan, "Examining the Impact of Artificial Intelligence on Decision-Making and Customer Relationship Management in Management Information Systems : A Qualitative Study," *Library Progress International*, p. 679–698, 2024.

[8] M. Suhardi, "Optimizing educational management with artificial intelligence in Indonesian higher education : A qualitative exploration," *Journal of Educational Management and Instruction*, p. 265–280, 2025.

[9] S. H. S. R. S. Z. H. Sain, "Implementing Artificial Intelligence in Educational Management Systems : A Comprehensive Study of Opportunities and Challenges," *Asian Journal of Managerial Science*, p. 23–31, 2024.

[10]K. B. P. A. R. M. Ashrafuzzaman, "INTEGRATING ARTIFICIAL INTELLIGENCE IN HRM : THE ROLE OF MANAGEMENT INFORMATION SYSTEMS IN ENHANCING DECISION-MAKING PROCESSES," *International Journal of Management Information Systems and Data Science*, p. 1–16, 2024.

[11]Z. Z. S. M. M. M. Khosravi ،"Artificial Intelligence and Decision-Making in Healthcare : A Thematic Analysis of a Systematic Review of Reviews "، *Health Services Research and Managerial Epidemiology* ،p. 1–15 .2024 ،

[12]T. B. C. S. A. W. S. S. I. W. G. K. U. Deobald, "The Challenges of Algorithm - Based HR Decision - Making for Personal Integrity," *Journal of Business Ethics. Springer Netherlands*, p. 377–392, 2019.

[13]A. Alkhalil ،"An Integrated DOI-TOE Model for the Adoption of Big-Data Analytics in Higher Education Systems "،*International Journal of Engineering and Information Systems (IJEAIS)* ،p. 124–140. .2020 ،

[14]E. S. B. Susilo ،"Employing Artificial Intelligence in Management Information Systems to Improve Business Efficiency "،*Journal of Managmenet and Informatics (JMI)* ،pp. 212-229 .2024 ،

[15]T. N. W. Rodgers ،"Advertising Benefits from Ethical Artificial Intelligence Algorithmic Purchase Decision Pathways "،*Journal of Business Ethics. Springer Netherlands* ،p. 1043–1061 .2022 ،

[16]T. R. Biswas, "AI-Powered MIS For Energy Sector Decision-Making: Opportunities and Security Challenges," *Pacific Journal of Business Innovation and Strategy*, pp. 3067-1353, 2026.

[17]G. S. B. T. D. D. S. C. K. Raina, "Artificial Intelligence-driven management: Bridging innovation, knwledge creation , and sustainable business practices," *Journal of Innovation & Knowledge*, pp. 1-15, 2026.

[18]A. Z. T. N. Bhima ،"Enhancing Organizational Efficiency Through the Integration of Artificial Intelligence in Management Information Systems "، *APTISI Transactions on Management (ATM)* ،p . .2023 ،289–282

[19]S. R. Keshireddy, "Intelligent Decision Support Systems in Management Information Systems Using Hybrid AI Models," *Information & Communication Technology Evolution (ReBICTE)*, p. 211–230, 2024.

[20]E. Romeo, "Adoption and integration of AI in organizations : a systematic review of challenges and drivers towards future directions of research," *Kybernetes the International Journal of cybernetics systems and management sciences*, p. 1286–1307, 2024.

[21]X. W. D. G. P. L. H. C. Z. X. C. Liang, "Smart Management Information Systems (Smis): Concept, Evolution, Research Hotspots and Applications," *Data Intelligence*, p. 857–884, 2023.

مقالة بحثية

دمج الذكاء الاصطناعي في نظم المعلومات الإدارية لتحسين عمليات صنع القرار في الجامعات اليمنية: دراسة نوعية

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المُلخّص

تتناول هذه الدراسة دمج الذكاء الاصطناعي في نظم المعلومات الإدارية بالجامعات، وتدرس الدور المحوري لهذه النظم في تعزيز عمليات صنع القرار. تُحدث القدرات التحويلية للذكاء الاصطناعي ثورة في الجامعات من خلال جعل العمليات أكثر كفاءة ودقة واعتمادًا على البيانات. وبفضل دمج الذكاء الاصطناعي، يُمكن لنظم المعلومات الإدارية تحسين عمليات صنع القرار داخل الجامعة بشكل ملحوظ، مما يُتيح نتائج أكثر دقة وسرعة وموضوعية. باستخدام منهج نوعي يتضمن مقابلات شبه منظمة، تُقيّم الدراسة التطبيقات العملية للذكاء الاصطناعي في أتمتة المهام، وتحسين استخدام البيانات، وتخصيص التجارب. وتُبرز الدراسة الفوائد المتعددة لدمج الذكاء الاصطناعي في أنظمة الجامعة، مثل تحسين عملية صنع القرار، والكفاءة الإدارية، والاستجابة المؤسسية. بالإضافة إلى ذلك، تتناول الدراسة التحديات المرتبطة بتبني الذكاء الاصطناعي في نظم المعلومات الإدارية، بما في ذلك العقبات التقنية والأخلاقية والتنظيمية. كما تستكشف الدراسة الآفاق المستقبلية للذكاء الاصطناعي في نظم المعلومات الإدارية بالجامعات، مُشيرةً إلى أن التطورات المستمرة والتطبيقات الاستراتيجية لنظم المعلومات الإدارية المدعومة بالذكاء الاصطناعي يُمكن أن تُؤدي إلى نتائج تنظيمية متميزة. تشير نتائج هذه الدراسة إلى أن اعتماد نظم المعلومات الإدارية المدعومة بالذكاء الاصطناعي يحمل إمكانات كبيرة لتحسين عمليات صنع القرار في الجامعات، مما يساهم في نهاية المطاف في تحسين الأداء التنظيمي والميزة التنافسية.

الكلمات المفتاحية: الذكاء الاصطناعي؛ نظم المعلومات الإدارية؛ اتخاذ القرار.

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