



**JOURNAL OF INFORMATION
SYSTEM AND TECHNOLOGY
MANAGEMENT
(JISTM)**

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THE ROLE OF ARTIFICIAL INTELLIGENCE IN ORGANIZATIONAL DECISION-MAKING: A CONCEPTUAL FRAMEWORK

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Article Info:

Article history:

Received date: 30.07.2026

Revised date: 27.08.2026

Accepted date: 27.09.2026

Published date: 30.09.2026

To cite this document:

Masri, H. M., Mohamad, M., Rasak, N. T. S., Saad, N. F. S. M., & Rakiman, U. S. (2026). The Role of Artificial Intelligence in Organizational decision-making: A Conceptual Framework. *Journal of Information System and*

Abstract:

This paper addresses the growing research problem of understanding how and under what conditions Artificial Intelligence (AI) influences organizational decision-making, and aims to develop a conceptual framework explaining how AI capabilities influence organizational decision-making and under what condition these effects occur, that integrates AI capabilities, human actors, and organizational context. Drawing on theories of bounded rationality (Simon, 1957), resource-based view (RBV), and the Technology Acceptance Model (TAM), the framework posits that AI capability (in terms of predictive analytics, machine learning, and decision support systems) are expected to enhance decision speed, decision quality, and strategic alignment in the organizational decision-making. This paper proposed three main propositions: first, that organizational performance is positively related to AI capability via improved decision speed and decision quality (supporting prior empirical findings; Neiroukh, Emeagwali, and Aljuhmani, 2024). Second, that human oversight, transparency, perceived usefulness, and ease of use modulate acceptance of AI in decision settings (drawing from TAM and empirical work; Systems

Technology Management, 11 (44), 694-703.

journal, 2025). Third, that ethical, regulatory, and contextual constraints (including AI explainability, bias, compliance) are critical moderators shaping whether AI's potential is realized as seen in studies of AI governance and decision-making processes (Huang and Niyomsilp, 2025). The framework contributes by synthesizing theoretical perspectives and empirical insights into a model that delineates antecedents, moderators, and outcomes of AI-augmented decision making in organizations. Its significance lies in guiding both researchers and practitioners in diagnosing organizational readiness, designing responsible AI systems, and ensuring that AI serves as augmentation rather than replacement of human judgment. Future empirical validation is suggested, especially in high-stakes and regulated sectors.

DOI: 10.35631/JISTM.1144042 **Keyword:**

Artificial Intelligence, Decision Making Process, Organization, Organizational Decision-Making



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Introduction

In the contemporary digital era, organizations increasingly confront complex environments characterized by volatility, uncertainty, and vast volumes of data. In such contexts, the capacity to make timely, accurate, and strategically aligned decisions constitutes a core competitive advantage. Artificial Intelligence (AI) has emerged as a powerful enabler in this regard, offering advanced analytics, predictive modeling, natural language processing, and decision-support capabilities that augment human judgment (Shrestha, Krishna, and von Krogh, 2020; Balbaa and Abdurashidova, 2024). Artificial Intelligence also able to equip the employees with new knowledge, skills and information, whereby AI has the potential to create a work environment that is more knowledgeable and flexible which can result in a better and efficient decision making (Malik, Thevisuthan and De Sliva, 2022).

Additionally, Artificial Intelligence also manage to help the company by processing large amount of data and offer insightful information that helps all levels in the organization in decision making (Weigel, Caldas, Meyer and Morris, 2022). The adoption of artificial intelligence in the organization has greatly increased the overall performance and organizational decision-making efficiently (Song, Qiu and Liu, 2025). According to Vincent (2021), the advancement of Artificial Intelligence significantly supports human decision-making by enabling decision makers to better evaluate the potential outcomes and risks of different alternatives while perform effectively with imperfect information that usually occurs in organizational decision-making contexts. However, according to Shrestha, Ben-Menahem and Von Krogh (2019), the use of AI-based decision making may introduce and contribute to

a number of serious, frequently concealed biases and difficulties in maintaining accountability, equity, and transparency.

The research problem addressed in this paper centers on the need for a robust conceptual framework that systematically links AI capabilities, organizational context, human–AI interaction, and decision outcomes. Existing studies often emphasize isolated antecedents or outcomes, such as performance gains (Neiroukh, Emeagwali, and Aljuhmani, 2024), or focus narrowly on particular decision domains like strategy, healthcare, or public administration (Huang and Niyomsilp, 2025).

This paper sensibly grounds such a framework in multiple theoretical bases. First, bounded rationality (Simon, 1957) remains relevant, as artificial intelligence can serve as a compensatory mechanism for processing large and complex datasets, recognizing that human decision-makers are cognitively constrained and information limited. Second, the resource-based view (RBV) posits that organizational AI capabilities (as intangible resources) provide sustained advantage when combined with complementary routines and absorptive capacity (Shrestha et al., 2020). Third, theories of human-technology interaction explain whether decision-makers will adopt and trust AI recommendations (Systems, 2025), such as the Technology Acceptance Model (TAM). New research on human-AI complementarity provides a conceptual framework to spot how human and AI strengths may work in synergy rather than in competition (Hemmer, Kühl, and Satzger 2024).

The main argument is that AI should not be considered as a replacement for human decision-makers, but rather as a strategic augmentation device, whose value depends on the alignment with company readiness, governance systems and human–AI complementarity. This paper proposed that an organization's AI capabilities (e.g., data infrastructure, algorithmic sophistication, model interpretability) interact with contextual moderators (e.g., decision complexity, explainability demands, regulatory pressures) and human factors (e.g., trust, oversight, cognitive absorption) to shape decision outcomes (e.g., speed, quality, strategic alignment). This conceptual framework offers a roadmap for both scholars and practitioners to identify where, how, and when AI can meaningfully contribute to organizational decision-making, and where caution must be exercised.

Literature Review

Contemporary scholarship on artificial intelligence (AI) and organizational decision-making converges on the recognition that AI technologies can significantly reshape decision processes, but diverges in explaining how, under what conditions, and with what organizational implications such benefits accrue. These days, Artificial Intelligence serve as an important role in the process of human decision-making process (Purohit and Banerjee, 2025). Five key strands of research, which are contingency perspectives, resource-based views, human–AI complementarity, technology acceptance, and integrative syntheses, offer complementary lenses that together form the empirical and theoretical foundation for a multi-level conceptual framework linking AI capability, human factors, organizational context, and decision outcomes whereby over 95% of large firms have been reported that their management teams are increasingly depending on AI technology in order to assist them in daily decision making such as making data-drive choices (Bean, 2018).

Shrestha, Ben-Menahem, and von Krogh (2019) propose a foundational contingency framework by comparing human and AI decision characteristics across five factors: search-space specificity, interpretability, alternative set size, speed, and replicability. Their analysis emphasizes that decision structure should determine whether tasks are best performed by humans, AI, or hybrid processes. This aligns with Simon's theory of bounded rationality by highlighting the cognitive limits of humans versus the computational strengths of Artificial Intelligence. However, the study does not address critical organizational antecedents such as data infrastructure or governance mechanisms which needed to enable effective and responsible of the deployment of Artificial Intelligence. Most of previous research has been focus on technical performance and process enhancement of AI, however its broader implication of AI on organizational performance and ethical accountability is not well articulated (Njuru, Githui and Oginga, 2025). These gaps provide opportunities to extend the contribution of present framework.

The discussion is furthered by Neiroukh, Emeagwali and Aljuhmani (2024) empirically exploring AI capability as an organizational resource by applying the Resource-Based View (RBV). The results show that the AI capabilities of data assets, analytics expertise, and deployment capacity can enhance organizational performance, mainly through mediators such as decision speed and decision quality. That suggests that AI resources can contribute, but open boundary conditions for investigation remain, such as when accelerated decision speed can undermine deliberative quality or when human supervision and explainability become critical moderators. Dealing with these contingencies is important to develop a robust conceptual model. Furthermore, Artificial Intelligence has the ability to perform difficult and complex task that require cognitive abilities making judgment and perform unthinkable task (Duan, Edwards, and Dwivedi, 2021). Handing over complex and difficult task to be handle by Artificial Intelligence helps to improve decision accuracy, but too much reliance on AI may lead to the loss of human unique knowledge (Fugener, Grahl, Gupta and Ketter, 2022). This shows the needs to establish a clear boundary between human and AI roles in organizational decision-making.

In a rigorous conceptualization of human–AI complementarity, Hemmer, Kühl and Satzger (2024) noted that complementarities are driven by asymmetries in capabilities and information access, and that the design of interfaces and roles and jobs need to be carefully considered to avoid human-AI teams performing below expectations. Their analysis provides a good starting point for understanding micro-level dynamics of human–AI collaboration but does not address broader organizational and regulatory factors. This limitation implies the need for an integrative framework that places complementarity in wider organizational systems.

Moreover, according to Guthrie, Fosso-Wamba, Queiroz and Cai (2025) in their previous research indicated that Artificial Intelligence alone does not lead to strategic agility whereby human supervision and regulatory compliance acts as necessary mediators that will protect against AI opacity and bias.

Balbua and Abdurashidova (2024) provide comprehensive literature review synthesizing evidence of AI's role in decision making across sectors. Their work identifies recurring themes, including improved predictive accuracy, risks of automation bias, and uneven adoption across industries. Yet, the review highlights that most studies remain descriptive and fragmented, lacking integrative models that explicitly link antecedents (e.g., data infrastructure, culture), mediators (e.g., trust, interpretability), and outcomes (e.g., decision quality, performance).

Their conclusion underscores the necessity of frameworks that bridge micro-level human factors with macro-level organizational and contextual variables. Moreover, Artificial intelligence is increasingly transforming organizational decision-making by augmenting human cognitive capabilities and improving efficiency. Recent studies emphasize the importance of human–AI collaboration, where decision-making is distributed between humans and intelligent systems (Li and Tian, 2026). Even though Artificial Intelligence provide many benefits in the decision-making process, but it also poses a range of ethical, organizational, and technical challenges that concerns to data privacy, transparency and accountability, thus the role of human judgment is importance and need to be thoughtfully addressed (Kaur and Kaur, 2024).

Finally, in a recent study, Song (2025) empirically applies the Technology Acceptance Model (TAM) to AI adoption in organizational contexts and finds that perceived usefulness, ease of use, and trust significantly impact adoption and subsequent performance benefits. This confirms TAM in decision environments enabled by AI, but the role of organizational resources (RBV) and decision complexity with individual perceptions remains an open question. The gap underscores the importance of integrating TAM insights with RBV and contingency perspectives for a more complete explanatory framework.

Synthesis and Gap Identification

Collectively, these studies confirm that while AI brings computational scalability, speed, and predictive strength, it also introduces challenges regarding trust, explainability, and governance (Balbaa and Abdurashidova, 2024). An AI system's true impact depends on the organization's absorptive capacity and human willingness to embrace its outputs (Neiroukh et al., 2024). What is currently missing is an integrative model that clarifies how technical capabilities (antecedents), decision characteristics (mediators), human trust and contextual constraints (moderators), and organizational benefits (outcomes) work together within a single framework.

Theoretical and Conceptual Framework

To build a robust conceptual model, this paper integrates three complementary theoretical lenses: Bounded Rationality, the Resource-Based View (RBV), and the Technology Acceptance Model (TAM).

Theoretical Integration

Each selected theory addresses a distinct layer of the organizational decision environment:

- **Bounded Rationality Theory (Simon, 1957):** Explains why AI is necessary. Human decision-makers face cognitive, temporal, and informational boundaries. AI capabilities function as cognitive augmentation tools that expand search spaces and data-processing capabilities (Shrestha et al., 2019).
- **Resource-Based View (Barney, 1991):** Explains what organizational assets create value. AI infrastructure, algorithms, and data repositories represent valuable and complex resources that can yield competitive advantages when tied to organizational routines (Neiroukh et al., 2025).
- **Technology Acceptance Model (Davis, 1989):** Explains how human actors adopt these tools. Sophisticated technology yields little value if managers mistrust or reject

automated outputs. TAM provides the framework for assessing user trust, perceived ease of use, and perceived usefulness (Song et al., 2025).

Combining these theories offers a novel, multi-level perspective: RBV supplies the organizational-level resource foundation, Bounded Rationality explains the cognitive decision mechanism, and TAM accounts for human actor adoption (Hemmer et al., 2025)

Development of Propositions

Based on this theoretical integration, three structured propositions are framed:

Proposition 1: Organizational AI capability (independent variable) is proposed to positively influence organizational performance (outcome) through the mediating mechanisms of improved decision speed, decision quality, and strategic decision alignment (mediators).

Justification: According to RBV (Barney, 1991) and empirical evidence (Neiroukh et al., 2025), advanced data assets and analytical expertise allow the managers to process complex data quickly, which resulted in improving the speed, quality and consistency of organizational decision-making.

Proposition 2: The positive influence of AI capabilities on decision-making processes is mediated by user acceptance (perceived usefulness and perceived ease of use), while being moderated by human oversight and algorithmic transparency.

Justification: Based on previous research on TAM conducted by (Song et al. 2025) and human-Artificial Intelligence collaboration (Hemmer et al. 20205) stated that managers are more likely to accept the recommendations of AI if the systems are easy to be used and clearly useful. However, to prevent automation bias and to maintain organization trust, human supervision and algorithmic explainability acts as an important governance condition.

Proposition 3: The relationship between AI capabilities and decision-making outcomes is moderated by contextual, regulatory, and ethical conditions.

Justification: As highlighted in AI governance literature (Huang and Niyomsilp, 2025; Zeriouh and Amara, 2025), decision-making environments subject to strict regulatory compliance, high operational risk, or ethical sensitivity require greater explainability and cautious deployment. These contextual constraints dictate whether AI capabilities effectively translate into performance gains.

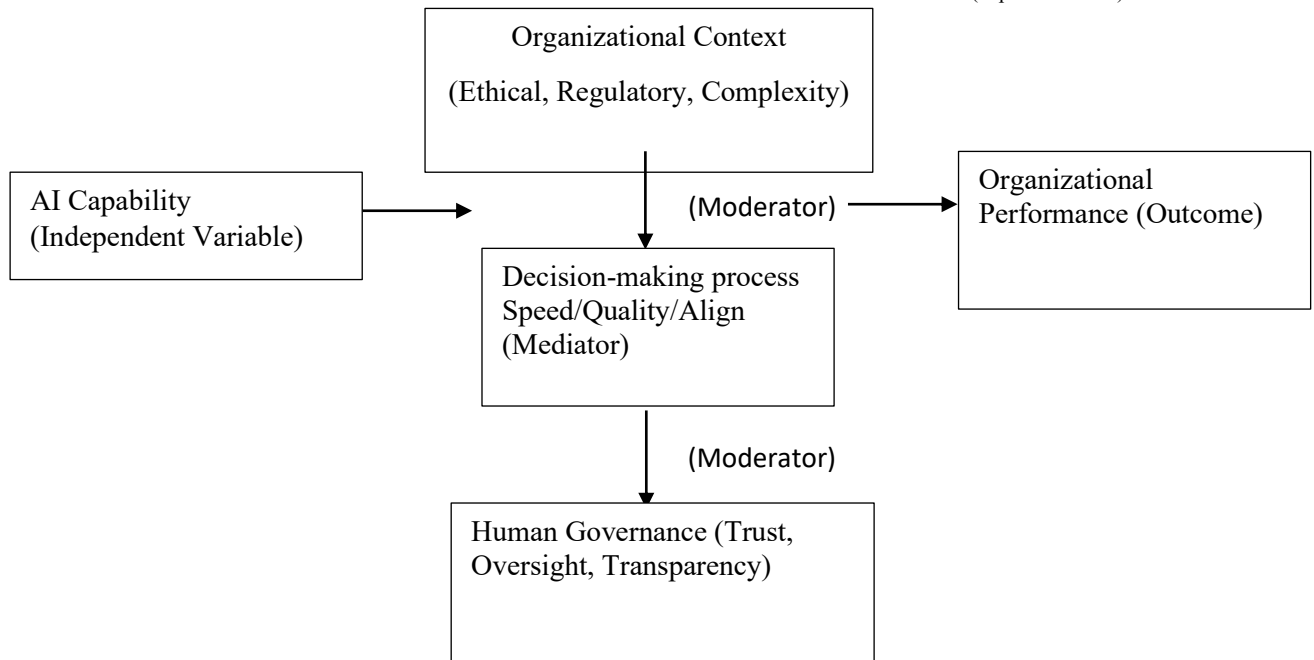


Figure 1 Proposed Conceptual Framework

Discussion and Conclusion

This paper proposed a conceptual framework of how AI capabilities interacting with human perceptions and organizational contexts influence organizational decision making. The model is based on Bounded Rationality (Simon, 1957), RBV (Barney, 1991) and TAM (Davis, 1989) to present a balanced and multi-level perspective of technological augmentation in modern enterprises.

First, the framework is based on Simon's (1957) bounded rationality by conceptualizing AI as a tool of cognitive augmentation to extend boundaries of human analytical capacity, rather than a replacement of executive judgment (Shrestha et al., 2019). Second, it extends the Resource-Based View, showing that AI assets do not create value automatically, but their impact is mediated by intermediate decision processes (speed, quality, alignment) (Neiroukh et al., 2025). Third, the TAM integration connects the macro-level resource of firms to the micro-level managerial trust, which accounts for the unevenness of technological adoption across firms (Song et al., 2025). On a practical level, this model provides business leaders with a tangible framework to assess their AI readiness. It warns against over-automation and points out that the best results are achieved with hybrid human-AI workflows with clear governance, human supervision and transparent algorithms (Hemmer et al., 2025). This model provides a kind of roadmap for business leaders to measure AI readiness. This warns against over-automation, with the best results achieved with hybrid human-AI workflows with governance, supervision by humans, and transparent algorithms (Hemmer et al., 2025).

However, there are certain limitations of the framework. First, it is conceptual and untested and requires empirical validation in different organizational settings. Second, the integration of multiple theories, while it may be comprehensive, can led to complexity that may be difficult to operationalize, i.e., to translate into measurable construct. The proposed framework is general in nature. In strategic management, it can help organizations decide when to

supplement vs. automate decisions with AI. The framework can be used in human resource management to evaluate employees' readiness to accept AI suggestions and to determine training needs. The framework emphasizes explainability, governance and complementarity in public administration and health care where stakes of the decisions are high. More generally, it offers a road map for organizations seeking to responsibly and effectively adopt AI in volatile, uncertain and data-complex environments.

In general, the conceptual framework contributes by providing a theoretically integrated, practically relevant and context sensitive model for comprehending the function of AI in organizational decision making. This paper contributes to the theory, offers practical steps for its adoption, and acknowledges the limitations.

Acknowledgements: The authors would like to express their sincere gratitude to Universiti Teknologi Mara, Perak Branch, Malaysia for providing the necessary resources and support throughout the course of this research. Special appreciation is extended to colleagues and peers who contributed valuable insights and constructive feedback, which greatly enhanced the quality of this paper.

Funding Statement: No funding.

Conflict of Interest Statement: The authors declare that there is no conflict of interest regarding the publication of this paper. All authors have contributed to this work and approved the final version of the manuscript for submission to the International Journal of Information System and Technology Management (JISTM)

Ethics Statement: This study did not involve any human participants, animals, or sensitive data requiring ethical approval. The authors confirm that the research was conducted in accordance with accepted academic integrity and ethical publishing standards.

Author Contribution Statement: All authors contributed significantly to the development of this manuscript. All authors read and approved the final version of the manuscript prior to submission.

Pengisytiharan Penggunaan Kecerdasan Buatan (AI) The author(s) declare that generative AI or AI-assisted technologies were used during the preparation of this manuscript. The following tool(s) were used: [Quill Bot, Google Gemini]. The tool(s) were used for language editing, grammar improvement, translation, and journal suggestion. All AI-assisted content was reviewed and verified by the author(s), who take full responsibility for the accuracy, originality, integrity, and final content of the manuscript.

References

- Balbaa, A., & Abdurashidova, N. (2024). The Impact of Artificial intelligence and decision-making: A comprehensive review. *Journal of Open Innovation: Technology, Market, and Complexity*, 10(3), 94.
- Barney, J. (1991). Firm resources and sustained competitive advantage, *Journal of management*, 17 (1), 99-120.
- Bean, R. (2018). How big data and AI are driving business innovation in 2018. *MIT Sloan Management Review*, 47, 777-780.
- Cao, G., Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2021). Understanding managers' attitudes and behavioral intentions towards using artificial intelligence for organizational decision-making. *Technovation*, 106, 102312.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 13(3), 319-340.
- Fügener, A., Grahl, J., Gupta, A., & Ketter, W. (2022). Cognitive delegation in human-machine systems: Theoretical foundations and empirical evidence. *MIS Quarterly*, 46(4), 2097-2132. Cited by: 111
- Guthrie, C. H., Fosso-Wamba, S., Queiroz, M. M., & Cai, H. (2025). The Impact of Artificial Intelligence Capabilities on Decision-Making Performance: A Longitudinal Study. *Journal of Global Information Management (JGIM)*, 33(1), 1-27.
- Hemmer, P., Schemmer, M., Kühl, N., Vössing, M., & Satzger, G. (2025). Complementarity in human-AI collaboration: Concept, sources, and evidence. *European Journal of Information Systems*, 34(6), 979-1002.
- Huang, B., & Niyomsilp, E. (2025). The impact of artificial intelligence on organizational decision-making processes. *Edelweiss Applied Science and Technology*, 9(4), 794-808.
- Kassa, B. Y., & Worku, E. K. (2025). The impact of artificial intelligence on organizational performance: The mediating role of employee productivity. *Journal of open innovation: technology, market, and complexity*, 11(1), 100474.
- Kaur, R., & Kaur, A. (2024). The role of artificial intelligence in organizational decision-making: Potential benefits and key challenges. *International Journal of Finance, Management and Economics*, 7(2), 742-745.
- Li, H., & Tian, F. (2026). Advancing Decision-Making through AI-Human Collaboration: A Systematic Review and Conceptual Framework. *Group Decision and Negotiation*, 35(2), 26.
- Malik, A., Thevisuthan, P., & De Sliva, T. (2022). Artificial intelligence, employee engagement, experience, and HRM. In *Strategic human resource management and employment relations: An international perspective* (pp. 171-184). Cham: Springer International Publishing.
- Neiroukh, S., Emeagwali, O. L., & Aljuhmani, H. Y. (2025). Artificial intelligence capability and organizational performance: unraveling the mediating mechanisms of decision-making processes. *Management Decision*, 63(10), 3501-3532.
- Njuru, J., Githui, F., & Oginga, B. (2025). The role of artificial intelligence in enhancing strategic decision-making in corporate management. *International Journal of Academic Research in Business and Social Sciences*, 15(10), 1038-1050.
- Purohit, R., & Banerjee, T. (2025). Artificial intelligence-based organizational decision-making in recruitment practice. *Human Systems Management*, 44(1), 173-186

- Rahwan, I., Cebrian, M., Obradovich, N., Bongard, J., Bonnefon, J. F., Breazeal, C., ... & Wellman, M. (2019). Machine behaviour. *Nature*, 568(7753), 477-486.
- Shrestha, Y. R., Ben-Menahem, S. M., & Von Krogh, G. (2019). Organizational decision-making structures in the age of artificial intelligence. *California management review*, 61(4), 66-83.
- Simon, H. A. (1957). *Administrative behavior: A study of decision-making processes in administrative organizations* (2nd ed.). Macmillan.
- Song, Y., Qiu, X., & Liu, J. (2025). The impact of artificial intelligence adoption on organizational decision-making: An empirical study based on the technology acceptance model in business management. *Systems*, 13(8), 683.
- Vincent, V. U. (2021). Integrating intuition and artificial intelligence in organizational decision-making. *Business Horizons*, 64(4), 425-438.
- Weigel, A., Caldas, C., Meyer, A., & Morris, S. A. (2022). The impact of AI on research. *Cell*, 185(15), 2621-2622.
- Zeriouh, K., & Amara, M. (2025). AI-driven frameworks for strategic risk management: A systematic review and model for organizational resilience and decision support. *Journal of Intelligent Management and Decision*, 4(3), 44-61.