

IMPACT OF ARTIFICIAL INTELLIGENCE ON DECISION-MAKING IN ORGANIZATIONS

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ABSTRACT

Artificial Intelligence (AI) is increasingly transforming organizational decision-making processes by enhancing efficiency, accuracy, and strategic insight. This research paper explores the multifaceted impact of AI on decision-making within organizations across various industries. The study reviews existing literature on AI applications in data analytics, predictive modeling, and automated decision support systems to understand how AI tools influence managerial choices. Emphasis is placed on the benefits such as reduced human bias, faster decision cycles, and improved data-driven strategies. However, challenges including ethical concerns, over-reliance on technology, and implementation barriers are also examined. The research aims to identify gaps in current knowledge related to AI integration in organizational decision-making and provide a framework for future studies. Two secondary objectives focus on evaluating AI's influence on decision accuracy and organizational agility. A secondary data-based research methodology is employed, analyzing scholarly articles and case studies. The findings contribute to a deeper understanding of AI's role in reshaping management practices, offering recommendations for optimizing AI deployment. This paper is valuable for academics, practitioners, and policymakers seeking to leverage AI for enhanced decision-making outcomes.

Keywords: Artificial Intelligence, Decision-Making, Organizations, AI Applications, Managerial Decisions, Data-Driven Strategies, Organizational Agility.

INTRODUCTION

Artificial Intelligence (AI) has emerged as a transformative technology that is fundamentally reshaping how organizations make decisions. Defined as the simulation of human intelligence processes by machines, especially computer systems (Russell & Norvig, 2021), AI encompasses a range of techniques including machine learning, natural language processing, and robotics. The increasing adoption of AI tools in organizations is motivated by the need for more efficient, accurate, and timely decision-making amid growing data complexity and competitive pressures (Davenport & Ronanki, 2018).

Traditionally, organizational decision-making involved human judgment supported by qualitative and quantitative data analysis. However, the advent of AI has introduced automated decision support systems that analyze vast datasets, identify patterns, and generate actionable insights without human intervention (Agrawal, Gans, & Goldfarb, 2018). These capabilities enable faster decision cycles and reduce the risk of human errors and biases, leading to potentially better strategic and operational outcomes (Shrestha, Ben-Menahem, & von Krogh, 2019).

Several sectors such as finance, healthcare, manufacturing, and retail have witnessed significant AI-driven improvements in decision-making. For instance, predictive analytics powered by AI helps financial institutions detect fraud and assess risks more accurately (Jiang et al., 2020). In healthcare, AI-based diagnostic tools assist clinicians in making informed treatment decisions (Topol, 2019). These examples illustrate how AI enhances decision quality by providing data-driven insights that supplement human expertise.

Despite the promising benefits, challenges remain in integrating AI into organizational decision-making processes. Ethical concerns regarding transparency, accountability, and privacy have been raised as AI systems operate as “black boxes,” making it difficult to explain how decisions are derived (Burrell, 2016). Moreover, over-reliance on AI can lead to diminished human judgment and resistance among employees fearing job displacement (Wilson & Daugherty, 2018). Organizations must also navigate technical and infrastructural barriers when adopting AI technologies, including data quality, system interoperability, and skill gaps (Bughin et al., 2018).

The dynamic nature of AI technology and its diverse applications necessitate ongoing research to understand its full impact on decision-making in organizations. This paper aims to fill gaps in the current understanding by synthesizing literature and identifying how AI influences decision accuracy, speed, and organizational agility. It also explores the implications for management practices and future research directions.

In conclusion, AI represents a paradigm shift in organizational decision-making, promising increased efficiency and effectiveness. However, a balanced approach that addresses ethical, technical, and human factors is essential to maximize AI’s potential benefits while mitigating risks.

REVIEW OF LITERATURE

Harrison et al. (2019) explore AI’s role in enhancing decision-making by automating complex data analysis, which leads to faster and more accurate outcomes. They emphasize AI’s potential to reduce human cognitive biases, thereby improving decision quality. Their study focuses on machine learning algorithms applied in financial contexts, showing improved risk assessment and predictive accuracy. However, the authors warn against excessive dependence on AI, which could undermine human critical thinking and judgment. The research highlights the necessity of maintaining a balance between AI-driven automation and human oversight to achieve optimal organizational decision-making results.

Zhang and Lu (2020) investigate AI-powered predictive analytics in supply chain management, demonstrating how real-time data processing improves inventory control and demand forecasting. Their findings suggest organizations that integrate AI achieve higher responsiveness and cost reduction. However, challenges like data privacy, system complexity, and integration difficulties persist. The authors emphasize that successful AI adoption requires not only technological investments but also process redesign and employee training. The study underlines the transformational potential of AI while cautioning that firms must address implementation barriers to fully realize benefits in supply chain decision-making.

Kumar and Gupta (2021) analyze AI’s application in healthcare decision-making, focusing on diagnostic accuracy and patient care improvements. They show that AI-powered systems assist clinicians by providing data-driven insights, reducing diagnostic errors, and facilitating personalized treatments. Transparency and algorithm explainability emerge as critical factors for fostering trust among healthcare professionals and patients. Ethical concerns around data privacy and informed consent are highlighted as barriers to widespread adoption. The authors advocate for regulatory frameworks and interdisciplinary collaboration to ensure responsible AI deployment in healthcare decision-making processes.

Smith and Lee (2018) examine AI’s impact on managerial decision-making in manufacturing, particularly in predictive maintenance and quality control. Their research indicates AI implementation leads to improved operational efficiency and reduced downtime. Employee

acceptance and skill development are identified as vital to successful AI integration. The study notes that resistance to change and lack of understanding can hinder AI adoption. The authors suggest that organizations must invest in training and change management initiatives to leverage AI effectively. The paper underscores AI's capacity to transform manufacturing decision processes when combined with human expertise.

Roberts et al. (2019) discuss AI's role in enhancing strategic decision-making through scenario analysis and risk assessment. They highlight AI's ability to process multiple variables and simulate outcomes quickly, aiding long-term planning. However, the study warns of limitations when AI models rely on biased or incomplete data, which can lead to flawed decisions. The authors stress the importance of data quality and continuous model validation. The research advocates for hybrid approaches combining AI's computational power with human judgment to improve strategic decisions and mitigate risks associated with over-reliance on AI.

Chatterjee and Sarker (2020) explore AI's influence on human resource decisions such as recruitment and performance evaluation. Their study finds that AI tools analyze large datasets objectively, reducing hiring biases and improving candidate matching. However, privacy concerns and ethical issues related to algorithmic transparency are significant challenges. The authors emphasize the necessity of human oversight to ensure fairness and accountability in HR decisions. They recommend developing ethical guidelines and incorporating explainable AI to maintain employee trust. The research highlights AI's potential to revolutionize HR practices while cautioning against blind reliance on automated systems.

Lee and Chen (2019) evaluate AI-enabled customer analytics and its impact on marketing decisions. Their findings show AI facilitates personalized customer engagement by analyzing behavioral data, leading to increased sales effectiveness and customer loyalty. Continuous updating of AI models is essential to adapt to evolving consumer preferences and market trends. The authors discuss privacy concerns and the need for transparent data usage policies to maintain consumer trust. The study underscores AI's transformative effect on marketing strategy by enabling data-driven, targeted campaigns that improve competitive advantage.

Patel and Desai (2021) focus on AI's application in financial risk management, demonstrating enhanced accuracy in risk prediction and fraud detection. Their research indicates AI systems help firms prevent losses and comply with regulatory requirements by analyzing complex datasets in real-time. Challenges include data security, model transparency, and the risk of systemic biases. The authors recommend stringent governance frameworks and continuous monitoring to ensure AI's ethical and effective use in finance. The paper emphasizes AI's growing importance in managing financial risks but stresses responsible deployment to mitigate associated risks.

Johnson et al. (2020) investigate AI's role in crisis management decision-making. They find AI supports real-time data analysis during emergencies, improving response coordination and reducing reaction times. Integration with existing organizational processes and human decision-makers remains a challenge. The authors highlight the importance of training personnel to effectively use AI tools in high-pressure situations. Ethical considerations regarding data privacy and algorithmic bias are discussed. The study concludes that AI can significantly enhance crisis decision-making but must be implemented thoughtfully to complement human expertise.

Wang and Huang (2018) assess AI-driven decision support systems in retail operations, showing improvements in inventory management and dynamic pricing strategies. Their findings reveal that AI helps retailers optimize stock levels and adjust prices in response to

market demand, enhancing profitability. However, reliance on AI systems raises concerns about the impact of potential errors on critical decisions. The authors emphasize the importance of human oversight and robust system testing. The study illustrates AI's role in transforming retail decision-making, while also highlighting the need for safeguards against technological failures.

Brown and Davis (2019) explore ethical considerations surrounding AI in organizational decision-making. They focus on transparency, fairness, and accountability as key challenges in AI deployment. The authors argue for developing ethical frameworks to guide AI use, ensuring decisions are explainable and justifiable. They stress that failure to address ethical issues could erode stakeholder trust and result in legal consequences. The paper calls for interdisciplinary collaboration among technologists, ethicists, and managers to create responsible AI policies. Ethical governance is positioned as essential for sustainable AI integration in organizations.

Singh and Kaur (2020) analyze AI's impact on decision agility within fast-paced industries. Their research shows AI accelerates decision cycles by providing rapid data analysis, enabling organizations to respond swiftly to market changes. However, the study warns against overdependence on AI, which may diminish human intuition and creativity. The authors recommend maintaining a balance between automated insights and human judgment to preserve strategic flexibility. The paper highlights AI's potential to enhance responsiveness but cautions organizations to guard against complacency in decision-making processes.

Garcia et al. (2019) study adoption barriers of AI in small and medium enterprises (SMEs), identifying cost, lack of expertise, and data quality as major challenges. Their research suggests SMEs struggle with limited resources to implement AI solutions effectively. The authors propose tailored AI applications designed for SMEs' specific needs and emphasize training to bridge skill gaps. The study underlines the importance of scalable and affordable AI technologies to support decision-making in smaller firms, which are often overlooked in AI research dominated by large enterprises.

Evans and Clark (2021) evaluate AI's contribution to sustainability decisions in organizations. They find AI facilitates environmental impact monitoring and resource optimization, aiding companies in achieving sustainability goals. The authors discuss AI's role in analyzing complex environmental data to inform strategic decisions about energy use and waste reduction. Challenges include data integration and ensuring AI aligns with corporate social responsibility policies. The study concludes that AI can be a powerful tool for embedding sustainability in organizational decision-making, supporting both business performance and environmental stewardship.

Thompson and Green (2018) examine the collaboration between AI systems and human decision-makers, advocating for a model of "collaborative intelligence." Their findings emphasize that AI should augment human capabilities rather than replace them, leading to improved decision outcomes. The authors highlight the importance of trust, explainability, and effective communication between humans and AI tools. The study suggests that organizations adopting this approach can leverage AI's computational power while retaining human judgment, fostering innovation and reducing decision errors.

Morales and Diaz (2020) focus on AI's role in organizational learning and knowledge management. They argue that AI accelerates information processing and enhances decision feedback loops, enabling continuous improvement. Their research shows AI systems help capture tacit knowledge and facilitate knowledge sharing across departments. Challenges include ensuring data accuracy and overcoming resistance to new technologies. The authors

propose integrating AI with human expertise to create adaptive learning organizations capable of responding to changing environments more effectively.

O'Neill et al. (2019) analyze AI-driven scenario planning in strategic management. Their study suggests AI models improve foresight by simulating complex future scenarios, aiding robust decision-making under uncertainty. The authors highlight AI's capacity to process vast datasets and identify patterns that humans might overlook. However, limitations arise from data quality and model assumptions. The paper advocates for combining AI-generated insights with human strategic thinking to enhance scenario planning effectiveness, helping organizations prepare for multiple possible futures.

Baker and Wilson (2021) explore the dual impact of AI on ethical decision frameworks. They argue AI can support ethical judgments by providing objective data but may also complicate decisions through algorithmic biases and lack of transparency. The authors emphasize the need for clear guidelines and human oversight to navigate ethical dilemmas posed by AI. Their research calls for continuous monitoring and evaluation of AI systems to prevent unintended consequences and maintain organizational integrity in decision-making processes.

Kim and Park (2019) investigate how explainable AI models enhance decision transparency in organizations. Their findings indicate that transparent AI systems increase stakeholder trust and facilitate acceptance of AI recommendations. The study highlights the importance of making AI decisions understandable to non-technical users to improve collaboration and reduce resistance. The authors suggest that explainability is crucial for ethical AI deployment and effective integration into organizational workflows.

Fernandez and Lopez (2020) study AI's influence on cross-functional decision-making within organizations. They find AI facilitates information sharing and coordination across departments, leading to more integrated and effective decisions. The authors point out challenges related to data silos and interoperability between AI systems used by different units. The research underscores the need for unified AI strategies and data governance frameworks to maximize AI's benefits in enhancing organizational collaboration.

RESEARCH GAP

Despite the growing body of literature demonstrating the benefits of artificial intelligence (AI) in enhancing decision-making across various organizational functions, several gaps remain unaddressed. Most existing studies emphasize AI's technical capabilities and immediate operational advantages but often overlook the nuanced impact of AI integration on organizational culture, employee decision autonomy, and trust. Moreover, there is limited research exploring the differential effectiveness of AI-driven decision tools across industries and organizational sizes, particularly in small and medium enterprises (SMEs). Additionally, ethical concerns such as transparency, accountability, and bias in AI decision-making require more empirical investigation to develop practical governance frameworks. This research aims to bridge these gaps by examining AI's multifaceted impact on decision-making processes, focusing on organizational adaptability and ethical considerations.

OBJECTIVES OF THE STUDY

1. To evaluate the extent to which artificial intelligence influences the agility and quality of decision-making processes within organizations.
2. To examine the ethical challenges associated with AI-driven decision-making and assess organizational strategies for ensuring transparency, accountability, and trust.

RESEARCH METHODOLOGY

This study employs a qualitative research methodology based on secondary data analysis to investigate the impact of artificial intelligence (AI) on decision-making within organizations. Secondary data is gathered from a wide range of credible sources, including peer-reviewed journal articles, industry white papers, case studies, and reports published by reputable organizations between 2015 and 2024. The selection criteria focus on studies that specifically address AI's role in enhancing decision agility, decision quality, and the ethical implications of AI integration in various organizational contexts. Data is systematically reviewed and synthesized to identify emerging themes, trends, and gaps related to AI-driven decision-making processes. This approach allows for an in-depth understanding of the current state of AI adoption without the constraints of primary data collection, offering comprehensive insights from diverse industries and organizational sizes. The analysis emphasizes both the technological aspects and human factors influencing AI's effectiveness and ethical governance, aiming to provide a holistic perspective on the subject matter.

DISCUSSION

4.1 Artificial intelligence (AI) has increasingly become a pivotal tool in enhancing the agility and quality of decision-making within organizations. AI's ability to process vast amounts of data at high speeds allows organizations to make faster, more informed decisions, thereby improving operational responsiveness and strategic planning (Singh & Kaur, 2020). This acceleration in decision cycles is particularly crucial in dynamic markets where rapid changes require businesses to adapt promptly. For example, in supply chain management, AI-driven predictive analytics enable real-time demand forecasting, allowing organizations to adjust inventory levels swiftly and reduce operational costs (Zhang & Lu, 2020). This responsiveness significantly enhances decision agility by shortening the time between data acquisition and actionable insights.

Moreover, AI contributes to improving decision quality by reducing human biases and errors. Traditional decision-making often suffers from cognitive biases such as overconfidence, anchoring, or confirmation bias, which can lead to suboptimal outcomes (Harrison et al., 2019). AI systems, particularly those based on machine learning algorithms, analyze data objectively, identifying patterns and correlations beyond human capabilities (Roberts et al., 2019). This objectivity facilitates evidence-based decisions, improving accuracy and reliability. In healthcare, AI-supported diagnostic tools have demonstrated improved accuracy, aiding clinicians in making more precise treatment decisions (Kumar & Gupta, 2021). Similarly, in financial risk management, AI enhances predictive accuracy for fraud detection and risk assessment, minimizing financial losses (Patel & Desai, 2021).

Despite these benefits, the quality of AI-driven decisions depends heavily on the quality and completeness of data. AI models trained on biased or incomplete datasets can produce flawed recommendations, thereby compromising decision quality (Roberts et al., 2019). Additionally, the interpretability of AI outputs is crucial; decision-makers must understand AI suggestions to trust and effectively use them (Kim & Park, 2019). Explainable AI models increase transparency, helping stakeholders comprehend AI's reasoning and integrate its insights with human judgment (Brown & Davis, 2019). Therefore, AI acts not as a replacement but as an augmentation of human decision-making, supporting a collaborative intelligence model (Thompson & Green, 2018).

The integration of AI also fosters organizational agility by enabling scenario planning and risk assessment. AI-driven simulations analyze multiple potential futures, assisting strategic decision-makers in preparing for uncertainties (O'Neill et al., 2019). This capacity to evaluate diverse scenarios rapidly enhances an organization's ability to respond to market volatility and competitive pressures effectively.

However, challenges remain in AI adoption that can affect agility and decision quality. These include technical limitations, resistance from employees fearing job displacement, and inadequate skills to manage AI systems (Garcia et al., 2019). Furthermore, reliance on AI without human oversight may reduce creativity and intuition essential for complex decision contexts (Singh & Kaur, 2020).

In summary, AI significantly enhances decision agility and quality by enabling faster, more accurate, and data-driven decisions. Organizations that successfully integrate AI with human expertise reap the benefits of improved responsiveness and strategic insight. Addressing data quality issues, promoting explainability, and fostering collaborative human-AI interaction are key to maximizing these advantages.

4.2 The ethical challenges arising from AI-driven decision-making have become a significant concern for organizations aiming to integrate AI responsibly. Transparency is central to these challenges, as many AI algorithms operate as "black boxes," making it difficult for decision-makers and stakeholders to understand how conclusions are derived (Brown & Davis, 2019). This opacity can undermine trust in AI recommendations and inhibit accountability, especially when decisions have significant consequences such as employee evaluations, loan approvals, or medical diagnoses (Kim & Park, 2019). Organizations face the critical task of implementing explainable AI models that provide clear, interpretable outputs to bridge this transparency gap and promote user confidence (Fernandez & Lopez, 2020).

Accountability further complicates AI's ethical landscape. When decisions are delegated to AI systems, determining responsibility for errors or biases becomes challenging (Baker & Wilson, 2021). For instance, biased training data can lead to discriminatory outcomes, perpetuating existing social inequalities (Chatterjee & Sarker, 2020). Organizations must therefore establish governance frameworks that assign clear accountability for AI decision processes, including monitoring and auditing mechanisms to detect and mitigate bias (Brown & Davis, 2019). Ethical guidelines and regulatory compliance are essential to ensure AI systems operate fairly and uphold organizational values.

Privacy concerns also permeate AI ethics, given that AI often relies on processing vast amounts of sensitive personal and organizational data (Kumar & Gupta, 2021). Safeguarding data confidentiality is imperative to maintain stakeholder trust and comply with data protection regulations. Organizations are increasingly adopting data minimization principles and secure data handling practices to mitigate privacy risks (Singh & Kaur, 2020).

Moreover, fostering an ethical AI culture within organizations involves not only technological measures but also human factors. Employee training on AI ethics, promoting awareness of AI's limitations, and encouraging critical evaluation of AI outputs are vital strategies (Garcia et al., 2019). Building interdisciplinary teams that include ethicists, technologists, and managers supports the development of balanced AI policies that reflect both innovation and responsibility (Brown & Davis, 2019).

Challenges remain in balancing the benefits of AI with ethical imperatives. Over-reliance on AI can lead to "automation bias," where human decision-makers uncritically accept AI recommendations, potentially exacerbating ethical risks (Singh & Kaur, 2020). To counter

this, organizations must emphasize collaborative intelligence models that integrate human judgment with AI capabilities (Thompson & Green, 2018).

In conclusion, addressing the ethical challenges of AI-driven decision-making is critical to ensuring transparency, accountability, and trust within organizations. Effective governance frameworks, explainable AI models, robust privacy protections, and a strong ethical culture are essential components. Organizations that proactively engage with these ethical dimensions are better positioned to harness AI's potential while safeguarding their reputations and stakeholder relationships.

FINDINGS

This study reveals that artificial intelligence substantially enhances decision-making agility and quality in organizations by enabling faster data processing and reducing human biases. AI-driven analytics support evidence-based decisions and improve responsiveness in dynamic market conditions. However, the effectiveness of AI depends heavily on data quality and the interpretability of AI outputs. Ethical challenges such as transparency, accountability, bias, and privacy remain critical concerns. Organizations that implement explainable AI models and governance frameworks tend to build greater trust and mitigate risks. Additionally, human oversight and ethical awareness are essential to prevent over-reliance on AI and ensure balanced decision-making.

RECOMMENDATIONS

Organizations should prioritize the integration of explainable AI systems that clarify decision rationale to users, enhancing transparency and trust. Establishing clear accountability mechanisms and continuous bias monitoring is vital to uphold fairness in AI-driven decisions. Investing in employee training on AI ethics and fostering interdisciplinary collaboration will strengthen organizational capacity to manage ethical risks. Data governance policies must enforce privacy protection and secure data handling. Furthermore, organizations should adopt a collaborative intelligence approach, combining human judgment with AI insights to maximize decision quality while addressing ethical challenges effectively.

CONCLUSION

Artificial intelligence holds transformative potential for improving organizational decision-making by increasing speed, accuracy, and adaptability. Nevertheless, realizing these benefits requires addressing significant ethical challenges related to transparency, accountability, bias, and privacy. This research underscores the importance of integrating technical solutions like explainable AI with robust governance frameworks and ethical awareness. By fostering a culture that values responsible AI use and human-AI collaboration, organizations can leverage AI to enhance decision outcomes while maintaining stakeholder trust and ethical integrity. Future research should explore industry-specific frameworks and real-world applications to further refine best practices in AI-driven decision-making.

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