

Exploring AI in business decision-making

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Abstract

Purpose: The integration of artificial intelligence (AI) into business decision-making processes is a transformative force across industries. This study rigorously analyses recent research to understand the multifaceted nature of AI-enabled decision-making, focusing on ethical considerations, human involvement, AI's impact on business, uncertainty management, AI-human synergy, and methodological improvements.

Design/Methodology/Approach: A systematic literature review was conducted with clear inclusion and exclusion criteria. The search strategy covered various academic databases, and the selected papers underwent rigorous screening. Data extraction and analysis were performed to identify common themes and insights.

Findings: The study reveals key insights into AI-enabled business decision-making. The ethical complexity of AI integration, necessitating transparency, privacy, and robust frameworks is emphasized. AI goes beyond superficial impact, transforming organizations across sectors. Effective uncertainty management and sustainability strategies are crucial. Achieving harmony between AI and human involvement is essential, fostering a comfortable and trusting environment.

Originality/Value: This study provides a comprehensive analysis of the multifaceted nature of AI in decision-making, highlighting the importance of ethics, strategic alignment, adaptability, emotional intelligence, and robust research practices.

Keywords: AI-enabled decision-making, Ethical considerations, Human-AI synergy, Business transformation, Uncertainty management, Methodological improvements, Organizational innovation

Introduction

The integration of artificial intelligence (AI) into business decision-making processes has ushered in a profound transformation across various industries (Duan, Edwards & Dwivedi, 2019). In an era characterized by rapid technological advancements and an increasing reliance on data-driven decision-making, this paper aims to shed light on the intricate nature of AI-enabled decision-making. It seeks to unravel the multifaceted implications that this transformative force carries for organizations worldwide, with a particular focus on key themes, including ethical considerations, human involvement, the impact of AI on business value and transformation, uncertainty management, AI-human synergy, and the vital need for methodological enhancements.

Within the context of the digital age, ethical considerations have taken centre stage in the integration of AI into decision-making processes (Harvard Business Publishing Education, n.d.). The emphasis here is on fostering transparency, ensuring privacy preservation, demanding accountability, and establishing trustworthiness. This examination of the complex ethical landscape acknowledges that organizations must tread carefully as they increasingly rely on AI systems to guide their decision-making, necessitating the development of robust ethical frameworks to govern AI utilization.

Moreover, the study recognizes that AI does not operate in isolation but rather in conjunction with human judgment. The study underscores the importance of responsible AI and raises thought-provoking questions about the extent to which organizations are willing to entrust AI with decision-making while acknowledging the fundamental role of humans in the process.

The profound impact of AI extends beyond the surface level and permeates the core of business strategies (Franke, Franke & Riedel, 2022). The study investigates how organizations can strategically align their goals with AI capabilities to drive innovation, create value, and gain a competitive advantage. It delves into the readiness of organizations to embrace this transformative potential in decision-making.

Furthermore, the research navigates the complex territory of uncertainty management in AI-driven decision-making. It underlines the importance of sustainability in AI decision-making and the need for organizations to ensure transparency and accountability while developing mechanisms to navigate unforeseen challenges and sustain AI application over time (Madhavi, Vijay, 2020).

The intricate interplay between AI and human involvement is at the forefront, emphasizing the creation of a harmonious relationship (Thayyib et al., 2023). The study underscores the requirement for a conducive environment that combines technical capabilities with an understanding of human perception and experience.

Lastly, the study addresses the challenges and the pressing need for methodological improvements in AI-enabled decision-making research. It emphasizes the refinement of methodologies and the democratization of AI through frameworks like automated machine learning (AutoML) to address talent shortages and ensure the accessibility and comprehensibility of AI systems.

Methods and Data

Inclusion and Exclusion Criteria

The systematic literature review was conducted with a well-defined set of inclusion and exclusion criteria to ensure the selection of relevant studies that contribute to the understanding of artificial intelligence (AI) in decision-making. The primary objective was to capture a comprehensive view of recent developments in the field, while also filtering out studies that did not directly address the role of AI in decision-making.

Inclusion criteria for this review were as follows: First, papers were required to be directly relevant to the application of artificial intelligence in decision-making processes. Second, to make sure the review covers current advancements in AI research, papers published between 2019 and 2023 were included. Thirdly, scholarly publications, conference proceedings, or peer-reviewed journals were the sources of information.

Papers that failed to satisfy the predetermined criteria were excluded using exclusion criteria. Research that did not primarily centre on the function of AI in decision-making were included in this. Furthermore, articles released prior to 2019 were disregarded due to the possibility that they did not accurately represent the most recent advancements in the field. Ultimately, only English-language papers were taken into consideration for this review due to language limitations.

Search Strategy

For this systematic literature review, finding pertinent papers required a methodical and thorough search strategy. Several academic databases and sources, including both general and subject-specific repositories, were searched by us. The search encompassed the databases ScienceDirect, ACM Digital Library, Web of Science, and Google Scholar.

Search terms and phrases like "artificial intelligence," "decision-making," "business value," "ethics," and "literature review" were utilized to make sure the results of the search were relevant to the review's topic. Many potentially interesting papers were found in the first search.

Data Collection and Screening Process

An organized screening procedure was applied to the original pool of papers. All papers were verified to be unique by identifying and eliminating duplicates. An initial screening of the remaining papers was conducted using their titles and abstracts. In this stage, each paper's applicability to the main theme of AI in decision-making was evaluated. Excluded were any papers that did not closely correspond with the research objectives or did not meet the predetermined criteria.

The complete texts of the chosen papers were acquired and carefully examined after the first screening. At this phase, the papers were given a more thorough assessment to ascertain whether or not they could be included in the systematic literature review. To guarantee that only research directly pertaining to AI's influence on decision-making were included, the inclusion and exclusion criteria were strictly enforced. Nineteen papers that satisfied every requirement were included in the final selection process.

Within the complex network of ideas depicted, "Artificial Intelligence" stands out as a pivotal focal point in the current business decision-making environment. The significance of this centrality highlights the transformative impact of AI in multiple areas of business, ranging from systematic administration to strategies for innovation. Revolved around this central concept are crucial topics such as "big data," "decision-making," and "knowledge management," indicating the fundamental role of AI in handling extensive streams of information and facilitating intricate decision-making processes. The close proximity of nodes associated with "ethics," "trust," and "explainable AI" to the key subject emphasises the significance of transparency and ethical deliberations when firms incorporate AI into their fundamental operations. The connections between "AI," "consumer behaviour," and "e-commerce" highlight the significant influence of this technology on comprehending and forecasting market trends, hence guiding strategic business decisions. Likewise, references to "risk management" and "sustainability" imply that AI can help in dealing with uncertainties and advancing long-term strategic objectives. This visualisation provides a comprehensive overview of the complex and interrelated impacts of AI on business. It suggests that AI is not only a tool but a fundamental component in reshaping company models in response to a quickly changing economic environment.

Study Characteristics

Key findings, publication year, journal/source, author(s), and other pertinent information were methodically extracted from each chosen study. Table 1 provides a thorough reference for every study by displaying the citation information of the 19 papers that were included.

Table 1: List of Included Studies and Their Characteristics

Author(s)	Title	Journal/Source	Year	Key findings
Bao, Y., Gong, W., & Yang, K.	A Literature Review of Human-AI Synergy in Decision Making: From the Perspective of Affordance Actualization Theory	Systems	2023	- AI technologies like natural language processing, neural networks, and machine learning play a significant role in enhancing human-AI synergy in decision-making. - AI enables automated information collection and analysis. - AI improves decision-making in various domains. - The paper presents an affordance actualization theory framework.
Duan, Y., Edwards, J. S., & Dwivedi, Y. K.	Artificial intelligence for decision making in the era of Big Data – evolution, challenges and research agenda	International Journal of Information Management	2019	- AI has experienced cycles of development and stagnation, with recent advancements due to Big Data. - Discusses challenges and opportunities in using AI for decision-making. - Offers twelve research propositions for IS researchers, covering conceptual development, AI-human interaction, and implementation.
Enholm, I.M., Papagiannidis, E., Mikalef, P. et al.	Artificial Intelligence and Business Value: a Literature Review	Inf Syst Front	2022	- AI is increasingly important for organizations to create business value and gain a competitive advantage. - Many AI initiatives fail despite substantial investments. - Enablers and inhibitors of AI use are identified, including technological,

				organizational, and environmental factors. - Different use cases for AI are distinguished for internal and external purposes. - The impacts of AI on organizations and competitive performance are discussed.
Franke, F., Franke, S., & Riedel, R.	AI-based improvement of decision-makers' knowledge in production planning and control	IFAC-PapersOnLine	2022	- Presents a methodology to enhance the knowledge of production planners using AI. - Practical testing demonstrated applicability and value for a production company. - Future research focuses on measuring knowledge growth and lean data acquisition. - Aims to understand data's influence on production planning.
Gomes, P. C., Vercosa, L. F., De Melo, F. J. C., Silva, V. F., Bastos-Filho, C. J. A., & Bezerra, B. L. D.	Artificial Intelligence-Based Methods for Business Processes: A Systematic Literature Review	Applied Sciences	2022	- The study reviews AI-based methods used to automate business processes and support decision-making. - It includes a quantitative and qualitative analysis of 21 selected papers. - AI-based methods are used for decision support and business process enhancement, involving techniques like clustering and deep learning.
Gómez-Caicedo, M. I., Gaitán-Ángulo, M., Bacca-Acosta, J., Torres, C. Y. B., & Díaz, J. C.	Business analytics approach to artificial intelligence	Frontiers in Artificial Intelligence	2022	- Business Intelligence combines with emerging technologies for competitive advantages. - Increasing interest in the field with a growing number of publications. - Influence of AI and BA on productive development. - India is the second most productive country in this field. - Topics commonly connected with business analytics include data mining, decision marketing, information systems, big data, and competitive intelligence. - Descriptive analytics is prominent, while predictive and prescriptive analytics need further investigation. - Suggested future research directions include the impact of predictive, prescriptive, and discovery analytics through case studies and the exploration of digital analytics.
Hagendorff, T.	The Ethics of AI Ethics: An Evaluation of Guidelines	Minds and Machines	2020	- AI ethics often fails with limited consequences for deviations. - Reading ethics guidelines have no significant influence on software developers' decision-making. - AI ethics is often considered an extraneous "add-on" in practice. - Economic incentives can override ethical principles. - Ethical aspects related to AI research, development, and application are often omitted in guidelines. - AI ethics should transition from deontological principles to situation-sensitive virtue-based ethics.
Harvard Business Publishing Education	Harvard Business Review	-	n.d.	- AI-powered technologies can improve decision making through real-time tracking, virtual role-play, and generative AI tools. - Real-world examples include Unilever's use of AI to track deforestation in its palm oil supply chain and the Port of Rotterdam's platform for optimizing seaport decisions.

Huang, A. H. and You, H.	Artificial Intelligence in Financial Decision Making	Handbook of Financial Decision Making, Forthcoming	2022	- AI technology has the potential to enhance financial decision-making by converting data into decision-friendly information. - AI applications in finance include NLP, image and voice recognition, and machine learning models for sentiment analysis, earnings and return predictions, and portfolio optimization.
Lehner, O. M., Ittonen, K., Silvola, H., Ström, E., & Wührleitner, A.	Artificial intelligence-based decision-making in accounting and auditing: ethical challenges and normative thinking	Accounting, Auditing & Accountability	2022	- Identified ethical challenges in the use of AI-based accounting systems for decision-making, with a focus on objectivity, privacy, transparency, accountability, and trustworthiness. - Highlighted the importance of human involvement in creating and training AI systems. - Explored ethical decision-making using Rest's four-component model.
Madhavi, M., Vijay, D.	Artificial Intelligence in Business Decision Making	Institute of Scholars (InSc), 2020	-	- AI is not widely known or utilized in India despite its large population. - AI applications in sectors like health, agriculture, and education. - Top AI applications in India include automation, chatbots, NLP, and image recognition. - Urges the need to increase AI adoption in business decision-making in India.
Perifanis, N., & Kitsios, F.	Investigating the Influence of Artificial intelligence on business Value in the digital Era of Strategy: a literature review	Information	2023	- Explored the integration of AI with business and IT strategies as a key enabler of digital transformation alignment. - Identified the synergistic ambidexterity effect of innovative and routine AI deployment, emphasizing its benefits for business value. - Emphasized that AI can reshape the nature of organizations and create new opportunities.
Prasanth, A., Vadakkan, D. J., Surendran, P., & Thomas, B.	Role of artificial intelligence and business decision making	International Journal of Advanced Computer Science and Applications	2023	- Explored the transformative impact of AI on business decision-making, highlighting AI's ability to analyze extensive data and provide precise insights.- Emphasized the need for responsible and transparent use of AI to minimize unforeseen consequences and maintain consumer confidence. - Argued that AI is a valuable tool for making business decisions and is not intended to replace human decision-makers.
Praveenraj, D.D. W., Victor, M., Vennila, C., Alawa-di, A.H., Diyora, P., Vasudevan, N., & Avudaiappan, T.	Exploring explainable artificial intelligence for transparent decision making	E3S Web of Conferences	2023	- Proposal to investigate and apply Explainable AI techniques. - Goals include creating an AI model that explains decisions in understandable terms and assessing efficacy and usability. - Emphasis on the benefits of transparent decision-making.
Ruiz-Real, J. L., Uribe-Toril, J., & Torres, J. A.	Artificial Intelligence in Business and Economics Research: Trends and Future	Journal of Business Economics and Management	2020	- The use of AI in business has garnered increasing scientific attention, especially since 2008. - In terms of AI research, the US, the UK, and China are in the lead. -Numerous academic institutions are supporting AI research, concentrating on various domains. - AI has a big impact on a lot of different industries, like marketing, biotechnology, insurance, and finance. AI is propelling businesses' digital transformation.

Schmitt, M.	Automated machine learning: AI-driven decision making in business analytics	Intelligent Systems with Applications	2023	- The adoption of AI and ML in business analytics has slowed due to a talent shortage brought on by an increase in demand for experts in these fields. -Predictive analytics can be accelerated and the talent gap closed with the aid of autoML frameworks. - The H2O AutoML framework can be a useful tool for user-friendliness, prototyping, and human empowerment even though it cannot achieve complete prediction accuracy.
Steyvers, M., & Kumar, A.	Three challenges for AI-Assisted Decision-Making	Perspectives on Psychological Science	2023	- Limitations like reliance on simulated AIs and low-stakes decision problems must be addressed in empirical research on AI-assisted decision-making. Research on AI-assisted decision-making ought to take into account elements such as cognitive modeling, AI explanation, and human autonomy. - Better performance requires ongoing assessment of AI-assisted decision-making.
Thayyib, P. V., Mamilla, R., Khan, M., Fatima, H., Asim, M., Anwar, I., Shamsudheen, M. K., & Khan, M. A.	State-of-the-Art of artificial intelligence and big data analytics reviews in five different domains: A bibliometric summary	Sustainability	2023	- Business intelligence and analytics are crucial in modern organizations. - AI has the potential to disrupt various aspects of society. - AI plays a role in sustainable business models and marketing. - Big Data and AI applications in finance have been increasing. - AI applications in education need more research and integration. - Various clusters of AI and Big Data research identified in different domains.
Torre, C., Guazzo, G. M., Çekani, V., & Bacco, V.	The Relationship between Big Data and Decision Making. A Systematic Literature Review	Journal of Service Science and Management	2022	- Big data can facilitate corporate decision-making in both private and public sectors. - The use of advanced tools and technologies can enhance decision-making by providing useful information. - Levers that impact decision-making effectiveness include efficiency, timeliness, precision, and effectiveness.

Source: Own

Risk of Bias Within Studies

Assessments of the risk of bias within individual studies were not explicitly addressed in the selected papers. The majority of the included studies were literature reviews and empirical research articles that did not present a specific risk of bias assessment for their content. As a result, there was limited data available for evaluating the internal validity of each study or assessing potential biases.

Results of Individual Studies

The outcomes in these studies were primarily qualitative in nature and did not involve specific interventions or quantifiable effect estimates. Therefore, the presentation of simple summary data, effect estimates, and confidence intervals, as recommended in PRISMA for intervention-based studies, was not applicable to the selected literature.

Synthesis of Results

The synthesis of results was based on a thematic analysis of the included papers. Common themes, patterns, and insights related to the role of artificial intelligence in decision-making across various domains were identified. Due to the qualitative nature of the findings and the absence of quantifiable outcome measures, no meta-analyses were conducted. As a result, there were no confidence intervals or measures of consistency to present.

Risk of Bias Across Studies

An assessment of the risk of bias across studies was not explicitly performed in this literature review. The selected papers encompassed a diverse range of research, and the absence of standardized methodologies across all studies limited the ability to conduct a comprehensive assessment of bias across the literature.

Additional Analysis

No additional analyses, such as sensitivity or subgroup analyses, or meta-regression, were conducted as part of this literature review. The selected papers were primarily reviewed for their individual contributions to the field of artificial intelligence in decision-making and were not subjected to further statistical or methodological analysis.

Discussion

Ethical Considerations and Human Involvement

The ethical dimensions surrounding AI in business decision-making are far from trivial; they are central and intricately complex. Lehner et al. (2022) research embarks on a comprehensive exploration of the ethical challenges surrounding AI-based decision-making. Their study exposes the tip of the iceberg, emphasizing the ethical intricacy of integrating AI into business decisions. Objectivity, privacy preservation, transparency, accountability, and trustworthiness are highlighted as pivotal ethical touchpoints. Their findings shed light on the ethical tightrope organizations must traverse as they integrate AI systems into their decision-making processes.

This study serves as a stark reminder that the integration of AI into decision-making processes is not merely a technical exercise; it entails navigating intricate and often conflicting ethical dimensions. It becomes evident that the ethical adoption of AI in decision-making hinges on transparency, privacy preservation, and establishing mechanisms for accountability. The core message here is that AI-enabled decision-making is a delicate ethical dance, demanding the establishment of robust ethical frameworks to govern AI utilization.

Furthermore, the study by Lehner et al. (2022) boldly underscores the indispensable role of human involvement in the development and training of AI systems. This aligns squarely with the concept of responsible AI, a concept in which AI operates not in isolation but in tandem with human judgment. This perspective is reinforced by Prasanth et al. (2023), who also underline the pressing need for responsible and transparent AI use in decision-

making. The critical question posed here is whether organizations are ready to relinquish complete control to AI, or whether they recognize that the heart of decision-making remains firmly grounded in human judgment.

Hagendorff (2020) critically evaluates AI ethics guidelines and their effectiveness. The findings reveal that AI ethics guidelines often fail to have a significant influence on software developers' decision-making. Ethical principles may be perceived as an extraneous "add-on" in practice, particularly when economic incentives compete with ethical considerations.

This critique emphasizes the ongoing challenge of translating ethical principles into practical and effective guidelines for AI decision-making. It underscores the need to transition from deontological principles to situation-sensitive virtue-based ethics. Furthermore, it raises questions about the role of stakeholders in reinforcing ethical norms within AI systems and processes.

Praveenraj et al. (2023) study on Explainable AI techniques aligns with the critical discussions about transparency, trust, and accountability in AI decision-making. Their methodology highlights the need to make AI models and decisions understandable, reinforcing the importance of explain ability.

From a critical perspective, this discussion raises questions about the practicality of implementing explainable AI in complex decision-making processes. It prompts considerations about the balance between transparency and the need for AI systems to handle vast and intricate data.

The interconnection between these studies raises questions about the precise balance between AI automation and human involvement in decision-making processes. It underscores that ethical AI-enabled decision-making is not a matter of merely following regulations and guidelines but rather an intricate fusion of human judgment, ethical principles, and technological innovation. The discussion extends to the idea that ethical principles should not be confined to paper; they must be ingrained within AI models and decision-making processes, fostering a responsible and trustworthy AI ecosystem.

AI's Impact on Business Value and Transformation

The impact of AI on business decision-making transcends the superficial; it delves into the essence of organizational transformation. Perifanis and Kitsios (2023) conducted an extensive literature review to unveil the transformative role of AI in aligning business strategies. Their argument is bold and unambiguous: AI serves as a catalyst for reshaping organizations and unlocking novel opportunities. This is a theme that has reverberations throughout the business landscape, heralding a new era in business strategy.

The research of Bao et al. (2023) strengthens this theme even more. Their results highlight how important artificial intelligence is to improving decision-making in a variety of fields. Although evident, this interrelationship between the studies also poses some concerns. How ready are businesses to accept this profound change in how they make decisions, and how

well-positioned are they to take advantage of AI's revolutionary potential?

The research done by Ruiz-Real et al. (2020) and Enholm et al. (2021) provides insight into the rising interest among academics in the use of AI in business. They draw attention to AI's capacity to spur digital transformation and have an impact on a number of industries, including marketing, biotechnology, insurance, and finance.

Analytics and business intelligence are changing, as demonstrated by the study by Gómez-Caicedo et al. (2022). Data mining, decision marketing, information systems, big data, and competitive intelligence are among the fields where they see growing interest.

The importance of big data in supporting business decision-making in the public and private sectors is emphasized in Torre et al.'s systematic literature review (2022). The authors offer valuable perspectives on strategies for managing uncertainty and emphasize the significance of upholding sustainability in AI-based decision-making.

A comprehensive examination of AI-based methods to support decision-making and automate business processes can be found in the study by Gomes et al. (2022). A quantitative and qualitative analysis of 21 selected papers is provided by means of a methodical examination of relevant literature and keyword co-occurrence analysis.

This approach is exacting and offers a strong basis for comprehending the current state of artificial intelligence as it relates to process automation. It acknowledges the value of AI methods like deep learning and clustering in improving decision support systems.

The potential of AI applications in financial decision-making is highlighted in Huang and You's (2022) study. These applications include sentiment analysis, earnings and return forecasts, portfolio optimization, image and speech recognition, and machine learning models.

The need for strategic AI integration is becoming more and more obvious; it is no longer just an option. This discussion highlights the idea that companies should use AI as a strategic pillar that is deeply ingrained in their operational DNA, rather than just implementing it as a new technology. An agile mindset, proactive planning, and strategic foresight are essential in the age of AI-driven transformation. Businesses must now integrate AI capabilities with their business objectives to create a harmonious blend of innovation, value creation, and competitive advantage.

Uncertainty Management and Sustainability

The spectre of uncertainty haunts every decision-making process, and AI introduces a novel dimension to managing this uncertainty. Wu, Shang (2020) research provide essential insights into managing uncertainty in AI-enabled decision-making. They propose mechanisms for effectively dealing with unpredictability and stress the importance of maintaining sustainability in AI decision-making. Their focus on sustainability echoes the ethical considerations highlighted by Lehner et al., (2022) extending the conversation to the broader context of ethical AI deployment.

This theme has significant depth. It underscores that sustainability in AI-enabled decision-making necessitates robust strategies for risk mitigation and adaptability in the face of

unexpected events. The organizational implication is that businesses must not only ensure transparency and accountability in AI decision-making but also establish mechanisms for dealing with uncertainty and a plan for the sustained application of AI over time. The long-term success of AI-enabled decision-making hinges on the ability to navigate and overcome unforeseen challenges.

AI and Human Synergy

The study by Yu, Li (2022) explores the subtle nuances of AI-human synergy, where AI decision-making transparency, effectiveness, discomfort, and trust intersect in a complex web. These findings echo the message conveyed by Prasanth et al. (2023), who recognize the value of AI as a tool to enhance decision-making without supplanting human decision-makers. The in-depth analysis here is that AI-human synergy is not a matter of technology alone but a complex dance involving perception, experience, and trust.

The crux of the matter is that creating a harmonious AI-human relationship is not solely reliant on the technical capabilities of AI; it is deeply entwined with how AI systems are perceived and experienced by employees. The inference is that for AI to be embraced as a valuable ally in decision-making, organizations must foster a comfortable and trusting environment. The discussion here raises questions about the emotional quotient of AI, suggesting that successful AI integration necessitates a user-centric approach that delves into the nuanced human psyche.

Challenges and Methodological Improvements

The trajectory of AI-enabled decision-making hinges on rigorous methodologies and research practices. Steyvers, Kumar (2023) cast a critical spotlight on the limitations of existing empirical research in AI-assisted decision-making. They emphasize the need for continual evaluation and methodological improvements. This theme of addressing challenges and improving research methodologies is interwoven with Schmitt (2023) study, which highlights the talent shortage in AI/ML and suggests automated machine learning (AutoML) as a pragmatic solution.

The pivotal role of methodological advancements in AI-enabled decision-making research is underscored. This entails refining data quality, delving deeper into the intricacies of human behaviour, and the continual evolution of research processes. Furthermore, the discussion extends to the heart of democratizing AI capabilities within organizations. The democratization of AI, notably through AutoML frameworks, becomes a pressing necessity for organizations to adapt to the talent shortage and ensure the accessibility and comprehensibility of AI systems.

Conclusion

In the course of the study the multifaceted landscape of AI-enabled business decision-making is traversed, uncovering a profound and intricate tapestry of insights that will

undoubtedly shape the future of organizations in a technologically driven world. The integration of artificial intelligence into decision-making processes has indeed proven to be a transformative force across various industries, challenging us to comprehend its profound implications while navigating a complex web of ethical considerations, human involvement, business transformation, uncertainty management, AI-human synergy, and methodological advancements.

Ethical considerations have emerged as a central and intricate facet of AI adoption, demanding transparency, privacy preservation, accountability, and trustworthiness. The papers we've examined emphasize the ethical tightrope organizations must walk as they integrate AI into decision-making, underscoring the necessity of establishing robust ethical frameworks to govern AI utilization. The implication is clear: the adoption of AI in decision-making is not a mere technical exercise; it is a complex and ethical endeavour, one that carries a moral responsibility that organizations must take seriously.

Human involvement remains at the core of decision-making, even in the era of AI. The importance of responsible AI, where human judgment and AI operate in tandem, cannot be overstated. It raises essential questions about the extent to which organizations are willing to cede control to AI while preserving the critical role of human judgment. The harmonious interplay of AI and human involvement becomes paramount in fostering a comfortable and trusting environment in which AI can thrive.

AI's impact on business value and transformation transcends the superficial. AI serves as a catalyst for reshaping organizations and unlocking novel opportunities. It underscores that organizations must not merely adopt AI as a technical novelty but strategically align their business goals with AI capabilities, creating a symphony of innovation, value creation, and competitive advantage.

The spectre of uncertainty in decision-making introduces a novel dimension with the advent of AI. Managing unpredictability is essential, as highlighted in our exploration, and maintaining sustainability in AI decision-making is crucial. It underlines that businesses must not only ensure transparency and accountability in AI decision-making but also establish mechanisms for dealing with uncertainty and a plan for the sustained application of AI over time.

The intricate interplay of AI and human involvement is not solely reliant on technical capabilities but delves into the emotional quotient of AI. The success of AI-human synergy depends on fostering a comfortable and trusting environment, acknowledging that AI is not just a tool but a complex interplay of perception, experience, and trust.

Challenges and the need for methodological improvements in AI-enabled decision-making research have been highlighted. Refining research practices and methodologies is pivotal to the trajectory of AI adoption. Furthermore, the democratization of AI, notably through frameworks like automated machine learning (AutoML), becomes a necessity for organizations to address the talent shortage and ensure accessibility and comprehensibility of AI systems.

In conclusion, organizations that effectively navigate this complex landscape will be best poised to unlock the full potential of AI in their decision-making processes, fostering innovation, growth, and responsible practices in the dynamic realm of AI-enabled business decision-making. As we stand at the precipice of a new era in decision-making, it is imperative that organizations heed these insights and embark on the path of responsible and innovative AI adoption.

References

- BAO Y., GONG W., YANG K., 2023. A literature review of human-ai synergy in decision making: From the perspective of affordance actualization theory. *Systems*, **11**(9), 442. <https://doi.org/10.3390/systems11090442>
- DUAN Y., EDWARDS J. S., DWIVEDI Y. K., 2019. Artificial intelligence for decision making in the era of Big Data – evolution, challenges and research agenda. *International Journal of Information Management*, **48**, 63–71. <https://doi.org/10.1016/j.ijinfomgt.2019.01.021>
- ENHOLM I.M., PAPAGIANNIDIS E., MIKALEF P. *et al.* 2022. Artificial intelligence and business value: a Literature Review. *Inf Syst Front* **24**, 1709–1734. <https://doi.org/10.1007/s10796-021-10186-w>
- FRANKE F., FRANKE S., RIEDEL R., 2022. AI-based improvement of decision-makers' knowledge in production planning and control. *IFAC-PapersOnLine*, **55**(10), 2240–2245. <https://doi.org/10.1016/j.ifacol.2022.10.041>
- GOMES P. C., VERCOSA L. F., DE MELO F. J. C., SILVA V. F., BASTOS-FILHO C. J. A., BEZERRA B. L. D., 2022. Artificial intelligence-based methods for business processes: A systematic literature review. *Applied Sciences*, **12**(5), 2314. <https://doi.org/10.3390/app12052314>
- GÓMEZ-CAICEDO M. I., GAITÁN-ÁNGULO M., BACCA-ACOSTA J., TORRES C. Y. B., DÍAZ J. C., 2022. Business analytics approach to artificial intelligence. *Frontiers in Artificial Intelligence*, **5**. <https://doi.org/10.3389/frai.2022.974180>
- HAGENDORFF T., 2020. The ethics of AI ethics: An evaluation of guidelines. *Minds and Machines*, **30**(1), 99–120. <https://doi.org/10.1007/s11023-020-09517-8>
- Harvard Business Publishing Education*. (n.d.). <https://hbsp.harvard.edu/product/H07VKZ-PDF-ENG>
- HUANG A. H., YOU H., 2022. Artificial intelligence in financial decision making. *Handbook of Financial Decision Making, Forthcoming*, HKUST Business School Research Paper No. 2022-082. Available at SSRN: <https://ssrn.com/abstract=4235511>
- LEHNER O. M., ITTONEN K., SILVOLA H., STRÖM E., WÜHRLEITNER A., 2022. Artificial intelligence based decision-making in accounting and auditing: ethical challenges and normative thinking. *Accounting, Auditing & Accountability*, **35**(9), 109–135. <https://doi.org/10.1108/aaaj-09-2020-4934>
- MADHAVI M., VIJAY D., 2020. Artificial intelligence in business decision making. *Institute of Scholars (InSc)*, 2020. Available at SSRN: <https://ssrn.com/abstract=3668836>
- PERIFANIS N., KITSIOS F., 2023. Investigating the influence of artificial intelligence on business value in the digital era of strategy: A literature review. *Information*, **14**(2), 85. <https://doi.org/10.3390/info14020085>
- PRASANTH A., VADAKKAN D. J., SURENDRAN P., THOMAS B., 2023. Role of artificial intelligence and

business decision making. *International Journal of Advanced Computer Science and Applications*, **14**(6). <https://doi.org/10.14569/ijacsa.2023.01406103>

PRAVEENRAJ D. D. W., VICTOR M., VENNILA C., ALAWADI A. H., DIYORA P., VASUDEVAN N., AVUDAIAPPAN T., 2023. Exploring explainable artificial intelligence for transparent decision making. *E3S Web of Conferences*, **399**, 04030. <https://doi.org/10.1051/e3sconf/202339904030>

RUIZ-REAL J. L., URIBE-TORIL J., TORRES J. A., 2020. Artificial Intelligence in business and economics research: trends and future. *Journal of Business Economics and Management*, **22**(1), 98–117. <https://doi.org/10.3846/jbem.2020.13641>

SCHMITT M., 2023. Automated machine learning: AI-driven decision making in business analytics. *Intelligent Systems With Applications*, **18**, 200188. <https://doi.org/10.1016/j.iswa.2023.200188>

STEYVERS M., KUMAR A., 2023. Three challenges for ai-assisted decision-making. *Perspectives on Psychological Science*. <https://doi.org/10.1177/17456916231181102>

THAYYIB P. V., MAMILLA R., KHAN M., FATIMA H., ASIM M., ANWAR I., SHAMSUDHEEN M. K., KHAN M. A., 2023. State-of-the-Art of artificial intelligence and big data analytics reviews in five different domains: A bibliometric summary. *Sustainability*, **15**(5), 4026. <https://doi.org/10.3390/su15054026>

TORRE C., GUAZZO G. M., ÇEKANI V., BACCO V., 2022. The relationship between big data and decision making. A systematic literature review. *Journal of Service Science and Management*, **15**(02), 89–107. <https://doi.org/10.4236/jssm.2022.152007>

WU J., SHANG S. S. C., 2020. Managing uncertainty in AI-Enabled decision making and achieving sustainability. *Sustainability*, **12**(21), 8758. <https://doi.org/10.3390/su12218758>

YU L., LI Y., 2022. Artificial intelligence decision-making transparency and employees' trust: The parallel multiple mediating effect of effectiveness and discomfort. *Behavioral Sciences*, **12**(5), 127. <https://doi.org/10.3390/bs12050127>

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