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The role of artificial intelligence in shaping strategic business decision-making

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I dedicate this work to the memory of my beloved brother George!
Forever in my heart — this work is for you.

Abstract

This thesis examines the impact of Artificial Intelligence (AI) on business strategic decision processes. The research examines AI technology impacts on organizational practices and data-driven decision support and automation and competitive advantage through a systematic literature review of academic studies from 2018 to 2025. The study uses resource-based view and decision theory frameworks to analyze both positive and negative aspects of AI implementation in strategic processes. The research demonstrates that AI technology improves decision precision while simultaneously boosting operational performance and risk control capabilities. The responsible implementation of AI in strategic decision-making faces two major obstacles: ethical concerns about algorithmic bias and transparency and accountability issues and organizational readiness and cultural resistance. The research demonstrates that ethical frameworks together with governance structures and explainable AI systems create essential conditions for building trust and sustainability in AI-based strategies. The research delivers valuable insights to both academic and business communities regarding AI's effects on strategic management. The research offers organizations specific guidelines to implement AI responsibly while maintaining long-term value creation and resilience and meeting ethical and regulatory standards.

Keywords

Artificial Intelligence (AI), Ethical AI Frameworks, Strategic Decision-Making, Human-AI Collaboration, AICapabilities, Responsible AI Implementation

Ο ρόλος της τεχνητής νοημοσύνης στη διαμόρφωση της στρατηγικής λήψης επιχειρηματικών αποφάσεων

Στυλιανή Τσιτσούλα

Περίληψη

Αυτή η διατριβή εξετάζει τον αντίκτυπο της Τεχνητής Νοημοσύνης (ΤΝ) στις διαδικασίες λήψης στρατηγικών αποφάσεων των επιχειρήσεων. Εξετάζονται οι επιπτώσεις της ΤΝ στις οργανωτικές πρακτικές και στην υποστήριξη αποφάσεων που βασίζονται σε δεδομένα, στον αυτοματισμό και στο ανταγωνιστικό πλεονέκτημα μέσω μιας συστηματικής βιβλιογραφικής ανασκόπησης ακαδημαϊκών μελετών από το 2018 έως το 2025. Η μελέτη χρησιμοποιεί πλαίσια θεωρίας αποφάσεων που βασίζονται σε πόρους για να αναλύσει τόσο τις θετικές όσο και τις αρνητικές πτυχές της εφαρμογής της ΤΝ σε στρατηγικές διαδικασίες. Η έρευνα καταδεικνύει ότι η ΤΝ βελτιώνει την ακρίβεια των αποφάσεων, ενώ ταυτόχρονα ενισχύει την επιχειρησιακή απόδοση και τις δυνατότητες ελέγχου κινδύνου. Η υπεύθυνη εφαρμογή της ΤΝ στη λήψη στρατηγικών αποφάσεων αντιμετωπίζει δύο σημαντικά εμπόδια: ηθικές ανησυχίες σχετικά με την αλγοριθμική προκατάληψη και ζητήματα διαφάνειας και λογοδοσίας, καθώς και οργανωτική ετοιμότητα και πολιτισμική αντίσταση. Η έρευνα καταδεικνύει ότι τα ηθικά πλαίσια, μαζί με τις δομές διακυβέρνησης και τα ερμηνεύσιμα συστήματα ΤΝ, δημιουργούν βασικές προϋποθέσεις για την οικοδόμηση εμπιστοσύνης και βιωσιμότητας στις στρατηγικές που βασίζονται στην ΤΝ. Η έρευνα παρέχει πολύτιμες γνώσεις στις ακαδημαϊκές και επιχειρηματικές κοινότητες σχετικά με τις επιπτώσεις της ΤΝ στη στρατηγική διαχείριση, προσφέροντας συγκεκριμένες οδηγίες για την υπεύθυνη εφαρμογή της ΤΝ, διατηρώντας παράλληλα τη μακροπρόθεσμη δημιουργία αξίας και ανθεκτικότητα και πληρώντας τα ηθικά και κανονιστικά πρότυπα.

Λέξεις – Κλειδιά

Τεχνητή Νοημοσύνη (ΤΝ), Ηθικά Πλαίσια ΤΝ, Στρατηγική Λήψη Αποφάσεων, Συνεργασία Ανθρώπου-ΤΝ, Δυνατότητες ΤΝ, Υπεύθυνη Υλοποίηση ΤΝ

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Introduction

In recent years, Artificial Intelligence (AI) has emerged as one of the most disruptive and transformative technologies in strategic business management. By leveraging advanced algorithms and machine learning, AI enables companies to process vast datasets, detect patterns, and make decisions rapidly and with increased precision. This evolution has redefined the strategic decision-making landscape, offering firms the ability to not only reacts to changes but to anticipate them, thus securing a significant competitive advantage.

Initially, AI's primary role in business was to automate repetitive tasks and support data analysis. Over the past three decades, however, AI has matured from a support tool into an active contributor to strategic thinking and execution. Thanks to developments in data processing and machine learning, AI is now integrated into high-level processes such as forecasting, risk management, and strategic simulations. As noted by Csaszar et al. (2024), new applications such as virtual strategy gaming illustrate the growing depth of AI's involvement in planning and scenario testing.

One of AI's most impactful contributions lies in its ability to analyze large volumes of data and model predictions that guide strategic direction. Organizations now rely on AI to identify trends and evaluate alternative courses of action with greater objectivity. According to Kaggwa et al. (2024), this shift is reshaping the way decisions are made at the executive level. Additionally, AI supports the automation of complex business processes—not merely simple workflows, but operations that previously required significant human resources. By reallocating human effort to more value-generating activities, companies can operate more efficiently and focus on innovation.

Furthermore, AI fuels innovation and enhances organizational competitiveness. Through the use of Generative AI, companies can design new products and explore alternative business models, as highlighted by Doshi et al. (2025). This not only improves strategic differentiation but also supports long-term sustainability in fast-changing markets.

However, despite these benefits, integrating AI into strategic processes poses several challenges. Ethical and regulatory issues are particularly pressing, including concerns over

explainability, algorithmic bias, and the assignment of accountability. Korobenko et al. (2024) emphasize that responsible AI deployment requires strong governance processes, including compliance checks, transparency and explainability, as well as robust privacy and security safeguards for sensitive data. Samara et al. (2024) highlight that AI adoption raises important concerns related to data privacy, data security, and regulatory compliance, while also emphasizing the growing need for transparency, interpretability, and accountability in AI-driven decision-making. Moreover, implementation challenges remain, as firms differ in their ability to adopt and integrate AI capabilities, and effective human–AI collaboration requires new communication protocols to avoid misunderstanding or mistrust (Csaszar et al., 2024).

Nonetheless, the strategic advantages of AI remain considerable. Doshi et al. (2025) show that, although single generative AI evaluations may be inconsistent and biased, aggregated evaluations across multiple LLMs, prompts, and roles can provide useful predictions that support the evaluation of strategic decisions.

AI can enhance organizational agility by enabling faster and more accurate decision-making, helping firms adapt to changing environments and market dynamics. It can also support risk assessment, supply-chain resilience, and operational efficiency. More broadly, Kaggwa et al. (2024) portray AI as a strategic asset and an increasingly central element of modern strategic management.

As AI technologies continue to evolve, their role in strategic decision-making is expected to expand even further, unlocking new possibilities for competitive growth, innovation, and business transformation. However, this evolution must be met with careful attention to ethical, technical, and managerial concerns, to ensure that AI is integrated in a manner that is both responsible and sustainable.

This thesis aims to investigate the influence of Artificial Intelligence on strategic decision-making within business organizations. The primary research question guiding this study is: How does Artificial Intelligence influence strategic decision-making in business organizations?

To address this question, the study explores the types of AI technologies currently employed in strategic contexts, the methods by which these technologies are integrated into decision-making processes, and the impact they have on business performance and competitiveness. Furthermore, the research critically examines the risks, limitations, and ethical concerns associated with the adoption of AI.

Drawing upon a systematic literature review of recent academic studies, the research aims to provide both theoretical insights and practical recommendations. Ultimately, this study aspires to support business leaders and decision-makers in adopting AI responsibly and effectively, thereby enhancing strategic foresight, resilience, and long-term organizational success in an increasingly digital and data-driven environment.

Research Approach

This study adopts a systematic literature review (SLR) approach to explore the role of Artificial Intelligence (AI) in strategic business decision-making. The review draws exclusively on peer-reviewed academic literature, including journal articles, conference proceedings, and review papers, in order to build a rigorous theoretical framework that captures the key themes, methodological approaches, and findings related to the evolving use of AI in business strategy (Snyder, 2019; Moher et al., 2009; Page et al., 2021). In doing so, the study synthesizes prior theoretical and empirical contributions on the interplay between AI and strategic management, including research on organizational transformation, decision-support capabilities, and digital strategy development (Keding, 2021; Kitsios and Kamariotou, 2021; Csaszar et al., 2024). The paper is structured around an Introduction that outlines the research problem and objectives, a Literature Review that synthesizes previous theoretical and empirical work, a Methodology section that explains and justifies the research design, a Findings section that presents the thematic analysis, a Discussion section that connects the findings to broader academic and practical debates, and a Conclusions section that addresses the research questions and proposes directions for future research.

Chapter 1: Literature Review

1.1.AI and Automation: Streamlining processes and reducing errors

Artificial Intelligence (AI) is impacting and changing organizational practices and productivity, and affecting the ethical and security aspects of organizations. This chapter aims to develop a theoretical framework of the effects of AI on the modern business world through a review of the literature. This paper is structured into four sections which focus on different important aspect of the role of AI in organizations. These areas—automation, data-driven decision making, ethical and regulatory issues, and security of data—show where the change is being led by AI and where organizations need to change. This review offers a comprehensive view of the evolutionary impact of AI, which goes a long way in helping the study's purpose of assessing the effectiveness of AI in transforming organizational practices. The first section looks at AI and automation and how it enhances productivity, quality and performance. The second one is on data-driven decision making which explains how AI improves analysis, risk and planning strategies. The third discusses ethical and regulatory issues including transparency, accountability, bias and the emerging responses to them. The last section focuses on the issue of data security and outlines measures that ensure the data integrity, privacy and resilience in the light of the increasing complexity of the digital environment. These sections, therefore, provide a good basis on which to understand the benefits and problems of AI in business, in so far as the study is concerned with assessing the effect of AI on organizational practices in the modern world.

This paper will concentrate its analysis on the impact of Artificial Intelligence (AI) which has gained critical mass in the organization and especially in the realization of automation to increase organizational productivity. Using conversation means that through AI-automated solutions, organizations can minimize human-based interferences and achieve more optimal results in their execution. This section focuses on the benefit of AI to process automation alongside examples and the issues implicated by AI.

Parycek et al. (2023) highlight that AI-enabled automation can improve the efficiency and cost-effectiveness of administrative procedures by streamlining workflows, reducing routine work, and allowing employees to focus on more complex tasks.
It helps organizations to simplify activities and minimize on the use of manpower in day to day running of organizations. For instance, where clerical work takes most of the time and resources, I have found AI to be particularly useful. By being able to perform these tasks while receiving limited supervision from human employees, it not only saves resources, but also increases the level of efficiency, which decreases the occurrence of output errors that can derail important processes.

In addition, AI is not only a tool that automates processes – it frees up human labor to focus on more valuable operations. Parycek et al. (2023) **argue that AI-enabled automation can relieve employees of routine administrative work, allowing them to focus on more complex tasks and improving the cost-effectiveness and quality of procedures.** Besides adding value to the job satisfaction of employees, this change also has added value to the strategy of the organization. For example, in an administrative capacity, the use of the AI technologies has been applied in appointment-making, data input, document retrievals to enhance utilization of human resource on real core tasks such as policy formulation and clients' interaction. This must bring into focus fostering the practice of applying artificial intelligence into organizations in a bid to foster sustainable business growth.

However, like any form of automation with the assistance of Artificial Intelligence there are issues involved. Parycek et al. (2023) argue that the successful implementation of AI and automation requires appropriate framework conditions, including transparency, data quality, continuous monitoring, and competence building for users. They also note that automation can reduce manual errors, improve procedural quality, and relieve employees of routine tasks, allowing them to focus on more complex work. Below this, there is a need to encourage innovation to ensure that potential benefits from the use of AI can be fully realized. Addressing these factors allows organizations not only improve their flow of operation but also competently place themselves within a given market notably in an era where economies are being digitalized.

Pierotti (2024) argues that AI can significantly enhance financial accounting by automating repetitive administrative tasks with limited added value, thereby allowing organizations to reallocate human resources to more complex and higher-value activities. AI-supported tools can improve the efficiency of financial accounting processes in organisations and can reduce the burden of routine, error-prone work. AI can help reduce manual errors and support more consistent accounting practices. At the same time, Pierotti (2024) also highlights that the benefits of these tools should be considered alongside the potential risks associated with their uninformed use.

Due to the high effects of utilizing and adopting AI in the analytics of financial practices within a firm, there is an extra benefit that firms can have an upper hand in developing their financial strategic decisions and policies. Therefore, AI is now recognized as one of the most important developments which revolve around the concept of financial accounting in contemporary business environments. Recent research suggests that the adoption of AI in financial reporting and analytics can enhance organizational decision-making capabilities, create business value, and support more strategic and data-driven managerial choices (Artene et al., 2024; Abbas, 2025). Roy et al. (2025) argue that the adoption of AI in corporate financial strategy can enhance forecasting accuracy, risk assessment, and strategic flexibility, enabling firms to generate real-time insights that support investment decisions and corporate financial planning.

Waduge et al. (2024) specify that IPA resulted from combining Artificial Intelligence (AI) with Robotic Process Automation (RPA). AI refashion is a new technological innovation which combines the analysis and prediction mechanisms of AI with the workflow and process focus of RPA to allow firms to solve multifaceted, unstructured activities which have been out of bounds to routine automation solutions. It is pointed out that this integration also improves work processes, and decision-making, which places IPA at the center of managing complex and unpredictable business contexts. In so doing, the authors substantiate the claim that IPA is a central guide to enhancing organisational sensitization and effective functionality.

One of the key and commendable features identified by the whole study of Waduge et al. (2024) is the creation of a process analysis framework that aimed at helping organizations to starts implementing IPA within their respective environments. In this study, the authors review the existing literature and survey experts to determine essential factors impacting IPA technology implementation. These factors include the aspects of technical, managerial and organizational requirements for IPA implementation and therefore call for a complex approach. This framework presents a set of guidelines that organization can follow in assessing their IPA maturity due to technological and people readiness.

Furthermore, the results of Waduge et al. (2024) extend the understanding of IPA for strategic decision and flexibility. The study shows how IPA is capable of revolutionizing decision-making because of shedding workload in the analysis of data, as well as increasing timely adaptability to prevailing market shifts. This capability is even more important when the industry is volatile due to new innovations and changing customers' needs. However, the authors also consider the implementation issues that arise with the use of IPA, such as the imperative of sound change management processes and organized resistance by interested parties. In sum, the research offers a systematic view of IPA adoption and effects, which are fundamental for organizations to acquire a principal understanding of how to implement this sophisticated automation technology.

Babashahi et al. (2024) show that AI is reshaping work across multiple industries by streamlining workflows, automating routine tasks, and supporting organizational efficiency. Their review highlights applications in sectors such as software engineering, education, accounting, legal services, media, and automation, while emphasizing that the impact of AI varies across domains and depends on sector-specific needs. In software engineering, AI is associated with the automation of routine development tasks and improved productivity, whereas in accounting and legal services it supports selected professional activities and contributes to changing skill requirements. Babashahi et al. (2024) further argue that successful AI adoption requires a balanced combination of technical and soft skills, including adaptability, lifelong learning, communication, and ethical decision-making. They also stress that organizations must address challenges such as skill gaps, resistance to change, job insecurity, infrastructure limitations, privacy

concerns, and cybersecurity risks through tailored training, ethical integration, and strategic alignment with workforce capabilities (Babashahi et al., 2024).

The deployment of AI automation as an innovative revolution brings about critical issues that organizations need to overcome to realize effective integration of AI automation. This implies that one of the biggest challenges that organisations will face while implementing this principle is data protection and cyber security. Since AI systems handle and store large amounts of data, some of which maybe of a sensitive nature, the system itself becomes a point of interest and attack to hackers. In order to secure this data demands higher levels of security as well as policy and legal mandates. Further, dissatisfaction over job loss because the various activities that were carried out with the help of people are now undertaken with the help of technology is inevitable. This disruption necessitates a workforce planning approach adopted right that discusses how AI quadrants should be embraced alongside the protection of employment, thus reducing social and economic imbalances (Patrício et al., 2024).

An important research limitation around AI and RPA adoption is the lack of concrete assessment of social and environmental implications. Patrício et al. (2024) argue that such issues can only be resolved with encompassing frameworks that focus on business performance and these concerns at the same time. The latest research also emphasizes the need to learn how to use technological opportunities and at the same time minimize technological risks that contribute to social inequalities given that AI & RPA contribute to this process. Managers need to embrace models that allow them to attend to both efficiency and welfare of society and the environment. This is in view of the fact that other techniques that may be adopted for the mentioned technologies could include sound practices on inclusion and fair distribution of resources in the processes of adopting such technologies as well as the use of sustainability practices strategies during the adoption of the mentioned technologies.

According to another issue reported by Patrício et al. (2024), organizations are not yet ready to adopt AI and Robotic Process Automation (RPA) suitably. Organizational constraints related to technology include the following: inadequate and dated technology

platform to support such implementations, and lack of experience in implementing some of these technologies. At the same time, there are cultural issues in organizations that make integration of innovation difficult to achieve, for example, cultures that resist change as well as organizational cultures that are not innovation friendly. As such it implies the need to address the barriers by putting in place strategies that will include training of the staff, improvement of the physical facilities and setting up a culture that will encourage the use of technology. This work points to the need forward for responsible adoption strategies that are sustainable about the social and physical environment in this age of digital technologies.

Automation by artificial intelligence has become one of the primary trends in contemporary business management because it contributes greatly to optimization of processes and decrease of potential mistakes. By reducing human efforts to complete repetitive tasks or improve decision making AI helps to optimize resource allocation and adapt more quickly to market forces. Although, for its successful implementation, consideration of the following factors: data privacy, cybersecurity and organizational readiness have to be taken into consideration. By addressing challenges related to privacy, cybersecurity, organizational readiness, and resistance to change, organizations may better realize the operational benefits of AI automation and remain competitive in a rapidly evolving digital environment.

1.2. Data-Driven Decisions: Enhancing analysis, risk management, and planning

Today the application of data management is the vital concept for companies that seek to improve analysis, risk management, and planning in the contemporary business environment. The use of Artificial Intelligence (AI) in these processes has compounded this sentiment by increase the capacity to computerize large data sets, identify subtle patterns, and derive logically sound decisions more effulgent and in record time.

Artificial Intelligence (AI) has increased the efficiency of significant data analysis in organizations and businesses by allowing assessments to be made on large volumes and qualities of data that were not possible using conventional methods. This capability is due in part to AI's algorithms, especially the machine learning type that can analyze data

independently of human direction, in search of and identifying patterns in data that might not be so obvious to a human analyst. Kovari (2024) holds the opinion that moving from regular analytics to AI is one of the biggest leaps toward improving business intelligence. There is no doubt that, one of the main benefits of AI is machine learning for the prediction of trends. Static models of analysis are rule based, while dynamic models in machine learning adjust to new input data and hence offer better and more accurate information as time passes. Kovari (2024) points out that such adaptive algorithm go a long way in reducing the time taken to make forecasts while at the same time improving the decision-making process by providing up to date analyses of changes. Such an iterative capability forms the basis for success here because it helps the business adapt to shifts within the market and the behavior of its consumers in a proactive manner rather than waiting to be reactive.

Real-time analysis and prediction are some of the most important benefits that the usage of AI analytics provides in the modern world. Through fast data analysis, AI systems help organizations make quick decisions on matters affecting their functionality and strategies. Kovari (2024) also notes that decision-related capabilities are especially important in contexts, where time is an important factor, e.g. supply chain management and risk analysis. That being the case, when a certain business applies these technologies, it will have an upper hand over competition because it is applying modifications that come from probabilities concerning returns from a given plan based on the trends evidenced in the data collected.

Kovari (2024) further suggests that AI-based DSS can improve the speed and reliability of decision-making, particularly in time-sensitive and data-intensive environments, while human-in-the-loop and explainable AI approaches remain essential for maintaining trust and responsible use.

Khalid et al. (2024) argue that AI-driven risk management can strengthen sustainable decision-making by enabling organizations to analyze large datasets, identify patterns, predict risks, and support scenario planning and resource allocation. AI-driven systems

offer stronger predictive capabilities and can help managers make more proactive and informed decisions.

Khalid et al. (2024) further suggests that these capabilities are particularly valuable in complex and uncertain environments, where organizations must align risk management practices with sustainability objectives.

In the context of risk management, artificial intelligence guide organizations to manage risks before they occur and bring transformative changes. Overall, Traditional Risk Management approaches rely more heavily on manual data gathering, expert judgment, and subjective assessment, which may limit scalability, response time, and predictive analysis (Khalid et al., 2024). AI, on the other hand, makes use of sophisticated mathematical models to draw conclusions out of very large sets of experience, to look for signs of risks in the making. According to Khalid et al. (2024), AI is effective in risk management because it enhances predictive analysis and scenario modeling, allowing managers to make more informed decisions, mitigate risks, and allocate resources in ways that support sustainability objectives.

Khalid et al. (2024) argue that AI-driven risk management can help organizations anticipate and mitigate risks proactively by analyzing large volumes of data, identifying patterns, and supporting predictive insights and scenario modeling.

Scenarios' modeling is an important part of strategy formulation where AI can help decision makers allocate resources strategically and avoid certain risks that may hinder an organization's progress. Scenario modeling entails the creation of future events with the help of historical and real-time data to provide the organization with a basis for evaluation of the strategic implications of a particular strategy under various conditions. It helps the top management to make better decisions considering risk and the opportunities on one hand and, on the other hand, it helps in achieving organization strategic objectives such as sustainability and ethical operation. Also, AI's inherent characteristic of changing models as new data arrive guarantees organizations can constantly adjust strategies whenever the environment becomes unpredictable. In a similar way that corporations use AI-based

scenario modeling to enhance risk management, they also leverage the tool to understand opportunities for winning in new markets.

Liability and risk management have been enhanced by the introduction of AI to avoid biased assessments and promote the use of numerous algorithms to check high risks without human interference. The previous risk assessment techniques require that several steps be followed, and this is usually a tiresome and sometimes involves overlooking some important steps. Because of the capacity of AI in analyzing large databases at comparatively a very short time, it generates quick alerts in form of patterns or anomalies that point to risk, unlike conventional methods.

Kalogiannidis et al. (2024) show that AI can strengthen predictive risk assessment and business continuity by enabling organizations to process large volumes of structured and unstructured data, identify emerging risks, and improve incident response planning.

AI-enhanced incident response can reduce business disruptions and support faster recovery from unforeseen events. In addition, AI-powered data analytics improve the speed and accuracy of risk identification, while AI-based predictive approaches help organizations respond more proactively to operational threats. Overall, Kalogiannidis et al. (2024) indicates that AI can enhance organizational resilience and business continuity, particularly through better risk detection, faster response, and more effective continuity planning.

Strategic planning is defined as the process of making formal decisions, in advance, that will enable an organization to achieve its goals. AI comes in to ensure this procedure is done with the degree of accuracy that gives strategic influence and direction. When implementing AI, it is possible to make different projections and estimate their results, which can help choose the best approaches for decision-makers. It allows an organization to predict future tendencies in immediate environment, determine proper resource distribution, and respond to new conditions. Also, it can process real-time data that helps organizations be nimble and change its strategy as soon as new information becomes

available in the market. It is especially valuable in the modern business world because the ability to move quickly can be a major selling point.

Leveraging of AI for organizational decision-making brings several advantages, but it opens significant ethical issues. One of the main concerns is algorithmic bias, where the system may reproduce or amplify biases found in the training data. Such biases may result from historical injustice or incomplete information, leading to discriminatory outcomes for certain groups. Guan et al. (2022) highlight algorithmic discrimination as a major ethical risk in AI decision making. To address this challenge, organizations should strengthen bias detection practices, improve data quality, and apply more rigorous data governance when training and deploying AI systems.

This becomes an ethical issue because biased or incomplete data can undermine fairness and transparency in AI-supported decisions. If an AI system relies on deficient or prejudiced data, it may produce harmful or suboptimal outcomes. Guan et al. (2022) show that technological uncertainty further intensifies this problem, especially when organizations do not fully understand the limitations of the AI systems they deploy. This means that organizations should promote greater algorithmic transparency and interpretability so that users can better understand AI-supported decisions. In addition, data validation, quality control, and continuous monitoring should be strengthened to ensure that AI-generated outcomes are as accurate and fair as possible.

The lack of clear responsibility deepens the ethical dilemma of values of AI in decision making. When AI systems produce outcomes that lead to negative consequences, it becomes difficult to determine who is accountable. Guan et al. (2022) also identify management errors and insufficient oversight as major contributors to this problem. These factors point to the need for stronger governance structures that clearly define the roles and responsibilities of human decision makers and AI systems. In this way, organizations can establish accountable frameworks that support the responsible and ethical use of AI and facilitate its safer integration into decision-making processes.

Currently, the utilization of AI in decision making is a distinct hallmark in forming organizational strategic models, but it is a worthwhile commendation that has stirred up critical difficulties, majorly transparency and explainability.

Kovari (2024) also notes that difficulty of adopting AI technologies is primarily hinged on the fact that most algorithms operate like ‘‘black boxes.’’ That is why when it is difficult to understand why an AI system determined what it did; stakeholders may not be able to trust the AI system. This lack of transparency does not only erode trust but also brings up issue of accountability, especially where the issue of health, finance, and deciding on policy is concerned because the population needs to know why something was done.

Those issues can be solved through introducing the Explainable AI (XAI), which aims to give the user more information about the AI’s decision-making process. Kovari (2024) notes that XAI models are built with an aim of presenting explainability of the model outputs so that stakeholders are able to note how certain decisions are arrived at. These models are designed to help reduce the space between AI solutions and consumers, through activities of algorithmic procedures, to provide essential and easy-to-understand information. The same level of clarity is useful to build the trust in stakeholders because they have information that industry solutions correspond to ethical standards and organizational standards. Furthermore, XAI assist organizations in accountability and responsible use by explaining how AI decision making happens.

However, as outlined in this paper, the use of XAI comes with certain difficulties of its own. There is a relationship between interpretability and performance in the current models; increasing the former may negatively impact the latter in several algorithms. According to Kovari (2024), more development is required for XAI methods while promoting satisfactory levels of interpretability without compromising the functionality of the AI models. Moreover, the effectiveness of XAI is conditioned by the readiness of the users to accept, comprehend, and apply the information provided. This means organizations have to put resources into teaching and educating their workers to be able to comprehend and capitalize on the outcomes of the XAI designs. Hence, on the one hand, there is a need to develop new technologies and tools that would support transparency; on

the other hand, citizens need to be empowered with the choice to become more transparent and make decision-support systems more widely adopted.

AI and particularly cognitive systems have already impacted many aspects of analysis, risk management, and strategic planning in organizations enhanced by Big Data. Thus, the application of AI can open new opportunities allowing improving decision-making in businesses and bringing desired improvements into organizational practices. But that should be accompanied by a discussion on the ethical aspect and concern that AI brings in relation to the scope of business applications.

Ethics and Regulation: Addressing transparency, accountability, and bias AI has advanced greatly across the different industries with the integration process and while constructing the stronger benefits, it has brought the essential ethical and regulatory questions and answers related to the problems like transparency, accountability, and bias. The described issues are crucial to defeating when deploying and developing AI systems, thus achieving the population's trust and creating impartiality in the systems' work.

Regarding AI transparency as an important characteristic since it identifies how clear the process of decision making is to the concerned stakeholders. This is because it gives confidence and trust as well as makes people understand how decisions are being arrived at. However, where there is a lack of transparency especially where the AI systems are decision making ones, they result in low trust and ethical issues.

Ayling and Chapman (2022) talk about the 'black box' problem of AI where the explanations of the internal functioning of the models are hidden which gives the models a dilemma. Such organizations could easily fall foul of the law when their algorithms yield unexpected outcomes thus amplified by the fact that when such solutions are used in sensitive contexts such as health, finance, and policing among others–there could be unimaginable moral horrors evident.

In an attempt to solving these challenges, the solution of Explainable AI (XAI) has been developed. Originally, one special purpose of XAI models is to provide transparent explanations of how AI systems arrive at given conclusions to improve user

comprehension and confidence. These models help to avoid an interpretation gap , that separates technically challenging computations based on AI and what can be easily understood by an average user, or the general public . For example, when a loan application was declined or when a particular medical diagnosis was recommended, XAI can explain why this happened. Larsson and Heintz (2020) also argue that while this aspect is strength of the machine learning, making the model as simple as possible and no simpler can lead to this model to be less accurate and highly complex models remain difficult to interpret.

Nevertheless, this approach is not without drawbacks, and its implementation may create challenges for the effective use of XAI. Thalpage (2023) notes that the field is still evolving and that important challenges remain, including the need to balance interpretability and performance, address complex models and big data, and develop standardized evaluation methods.

To address these difficulties, more research and development are required to enhance XAI approaches in order to eliminate well-substantiated obstacles in terms of identifying satisfactory and accurate approaches in pushing the objectives of XAI that covers the two principles of accuracy and transparency alongside the requirements of trust and accountability in artificial intelligence.

The issue of accountability in Artificial Intelligence (AI) is a pivotal concern in the ethical deployment of these technologies. Accountability involves creating frameworks and mechanisms that ensure AI systems and their creators are responsible for the outcomes their algorithms produce. However, the inherent complexity and autonomy of AI systems can obscure the attribution of responsibility. This ambiguity becomes particularly critical when AI systems cause harm, errors, or unanticipated consequences.

According to McDermid et al. (2021), transparency alone is insufficient if it is not embedded within a wider accountability framework. Without such mechanisms, even well-intentioned transparency efforts may fail to build trust or address ethical lapses effectively.

The authors emphasize that XAI methods should be linked to explanations of human decisions made during the development life cycle, so that explainability can better support confidence, contestability, and responsible oversight of AI systems.

Laying down strong accountability systems require formulation of legal framework as well as ethical standards. These should identify all the key players in the deployment, development and management of such structures, that is developers, operators as well as the end users. Legal certainty implies that, whenever there is controversy, responsibility can be correctly afforded. a possible practical application is to use tools and procedures that perform regular checks of the AI systems. Such audits can confirm that the organisation is adhering to ethical and legal guidelines such that the AI systems perform within certain ethical parameters and do not contribute inadvertently to a negative impact or recycling of the biases.

Ayling and Chapman (2022) underscore that ethical guidelines and impact assessments, audits, and independent oversight are critical measures to minimize or avoid the ills of AI adoption. Socially responsible guidelines are not only a guide to ethically manufacture software, but they also support transparency, accountability, and public trust. Consequently, several threats can be revealed and prevented from worsening through close supervision by a third party or through an independent assessment that encourages responsible innovation. Therefore, accountability in AI is not a mere technical task but a multilayered governance challenge. With good policies in place and control measures, such as policies for checks and balances as well as implying responsibilities of the different stakeholders, society can better realize the benefits that come with the use of AI while at the same reducing the negative or undesirable impacts that comes with the use of AI systems.

Prejudice in AI systems is an essential challenge in that case, which indicates that prejudiced results amplify injustices. Such biases result from improper data fed into the algorithms at the time of their creation or design of systems themselves. If left unrealized, such biases can perpetuate existing social inequities, the management of which presents major ethics and social implications.

Parikh et al. (2019) explain that bias has emerged as a major concern in the use of AI in health care. They show that AI systems may reproduce or amplify existing statistical and social biases, particularly when they are trained on data that are unrepresentative, incomplete, or generated through biased processes. Parikh et al. (2019) suggest that reducing such bias requires attention to data quality and representativeness, as well as appropriate training for clinicians in interpreting AI outputs.

The first way of reducing bias is to ensure that machine learning datasets are sufficiently diverse and representative of the intended patient population. Homogeneous datasets may reproduce biases embedded in the data source. With more representative datasets, AI systems are more likely to perform more equitably across different population subgroups. Abràmoff et al. (2023) also emphasize the importance of assessing and quantifying bias through subgroup analysis and stratification of characteristics across different phases of the AI lifecycle. In addition, regular validation, monitoring, and real-world assessment are important for systematically identifying and addressing discriminatory outcomes over time.

Besides the technical measures, diversity of AI developers is crucial. Ferrara (2024) argues that mitigating bias in AI requires a holistic approach involving diverse and representative datasets, enhanced transparency and accountability, and collaboration across multiple perspectives. Such diversity of perspectives can help identify forms of bias that may otherwise go unnoticed and can improve understanding of how bias affects different social groups.

Preventing bias affects the AI thereby requires the consideration of a multilayered approach that entailing the consideration of the technical, the procedural, as well as the organizational layers. According to Crowe and Rodriguez (2024), it is crucial to address dataset- and algorithm-related sources of bias, embed safeguards and bias mitigation strategies in AI design, conduct ongoing testing, evaluation, and post-deployment feedback, and involve multidisciplinary and diverse stakeholders throughout the AI life cycle. Such efforts make it possible to develop more trustworthy AI systems and reduce the risk of unfair outcomes in practice. By adopting such measures, the field can better

ensure that future AI technologies are developed and implemented in ways that support broader social benefit across different communities.

It therefore crucial to discuss and devise response strategies to the ethical and regulatory questions related to transparency, accountability and more importantly bias in AI systems to ensure mitigated integration of the systems into the society. Although advances have already been achieved with actions that strengthen the currently available ethical standards and technical solutions, more continuous work is still required in order to strengthen the full regulative actions for the deployment of new regulation strategies that can support a new sensitive culture from the side of AI developers as well as from the side of the AI users. All the same, by giving emphasis to these ethical issues we ensure that since we know AI has advantages it should be helpful to society and its purposes cannot be malevolent.

It has emerged that the growth of Artificial Intelligence (AI) technologies has advanced at a faster rate than the formulation of extensive regulation to govern these technologies. This is a problem that remains complex when it comes to the regulation of these technologies' deployment particularly in the boundaries of ethics. Various factors such as governments, public bodies and academic institutions, as well as private companies, have proposed ethical principles, governance guidelines and policy recommendations for the use of AI. This broader governance landscape is reflected in the work of Jobin et al. (2019), who analyzed ethical guidelines for AI, and Corrêa et al. (2022), who reviewed 200 AI governance guidelines and recommendations worldwide.

While such guidelines have become common, their practical value depends on whether they are translated into workable governance processes and tools. Ayling and Chapman (2022) critically assess current AI ethics tools and question whether they are fit for purpose in addressing the complex ethical challenges posed by contemporary AI systems. They argue that, although ethical principles provide an important starting point, they are not sufficient on their own unless they are accompanied by practical mechanisms that can operationalize concerns such as bias, accountability, and transparency. Their study therefore shifts attention from abstract principles to the "how" of applied AI ethics, especially through tools related to impact assessment, audit, and governance. Overall, the

paper highlights the continuing challenge of developing mature, practical, and context-sensitive frameworks that can translate ethical principles into effective practice.

1.3. Data Security: Ensuring data integrity, privacy, and mitigating vulnerabilities

With the globalization and liberalization of organizations the protection of data or information has become one of the crucial pillars of organizational credibility. Having integrity in data, maintaining privacy and eradicating risks are some of the qualities of good data security. These are the critical areas that this literature review seeks to explore with references to the most up to date peer-reviewed articles. Data integrity in the other hand can be defined as the coherence and the precision of data at different times.

Data consistency, security and privacy is important for accurate decisions making and productivity as well as for the reliable use of data in organizations. According to Sargiotis (2024), robust protective measures help safeguard sensitive information in the digital era and support trust and safety in data handling. Measures like encryption, access controls, and data masking can protect data from unauthorized access and potential breaches.

Data privacy refers to the appropriate management of personal information in ways that protect individuals' identity and sensitive data. As larger volumes of information are collected and processed, privacy concerns have become increasingly important. In this context, Sargiotis (2024) provides a systematic discussion of data security and privacy as core components of data governance, with particular emphasis on encryption, access control, and data masking as measures that help prevent unauthorized access and potential breaches.

Renuka et al. (2025) discuss data privacy and protection as legal and ethical challenges in the digital era and note that emerging technologies such as AI and IoT raise important privacy concerns. They also highlight the need for privacy-preserving methods, including approaches such as anonymization and secure multi-party computation, in order to support responsible data use while protecting sensitive information.

Thus, identifying potential threats is important in order to reduce the risk of personal data leakage and cyber-attacks. Ramteke et al. (2024) examine the security landscape of chat bots in the travel, tourism, and hospitality industry, identifying threats to user privacy and system integrity and proposing targeted countermeasures to safeguard customer data.

Also, the threats have never been static, and cyber threats are becoming more sophisticated over time demanding constant upgrade of security mechanisms. Regarding this crisis, it is necessary to perform security audit and assessment continually to determine the security gaps and verify the effectiveness of all the applied security controls to safeguard current and future threats.

Implementation of data protection laws is a prerequisite for data protection. Nowadays there are standards for data handling, like GDPR from the EU or HIPAA from the USA.

Momani (2025) underlines the critical need for robust safeguards and regulatory compliance in order to preserve the privacy and confidentiality of sensitive health information in AI-driven healthcare environments.

Failure to do so can lead into harsh penalties as well as negatively affect an organization's image. Hence why it is compulsory that these organizations embrace these regulations and obey them so that they can gain the trust needed and do not face any legal consequences.

New opportunities for the improvement of data protection are opening in connection with the use of innovative approaches such as the block chain. In this regard, Ramahlosi et al. (2024) propose a block chain-based model for securing data pipelines in heterogeneous information systems, showing how block chain's decentralized and immutable structure can support data integrity, confidentiality, and authenticity.

Gill et al. (2024) identify Edge AI as a rapidly evolving research field with significant potential for real-time, distributed intelligent processing, while also emphasizing important challenges related to security vulnerabilities, resource limitations, and scalability. These concerns indicate that the deployment of AI-driven security solutions must be accompanied by appropriate privacy and protection safeguards.

Conservation of data, protection of privacy and management of risks have always been integral parts of the data security management. It is worth noting that the literature emphasizes that one must fulfill the implemented technical precautions, as well as the observed legislation, and monitor innovative technologies to protect personally significant data. Nevertheless, the increasing cyber threats' complexity makes organizations stay alert and engaging in consistent data protection measures for ensuring the trust and stability of the businesses.

1.4.Abstract and research gap

This last section provides a summary of the major findings of the literature review in relation to the impact of AI on automation, decision making, ethics and data security. It also reveals the opportunities and risks of AI in the contemporary organizations, and how it can be used to improve performance, risk control and regulatory and ethical issues. Nevertheless, there is a major gap in the literature regarding the long-term implications of AI for strategic decision making, organizational adaptability, and cybersecurity resilience. Current research is mainly concerned with technological progress and short-term benefits, but there is almost no attention to how organizations can adopt AI in a sustainable way so as to face increasing threats and legal issues. This study therefore seeks to bridge this gap by evaluating critically the effectiveness of AI in changing organizational behaviors, so that its adoption is in harmony with long term business sustainability and security goals.

1.5.Key points of the literature review

This summary consolidates the key points of the literature review while highlighting a crucial gap that our study aims to address. The reviewed research indicates that AI-driven automation significantly improves organizational efficiency by streamlining processes, reducing human error, and reallocating human resources to strategic tasks. Additionally, the integration of advanced algorithms and real-time data processing has enhanced data-driven decision making, risk management, and strategic planning. The literature also emphasizes the importance of tackling ethical and regulatory challenges—such as ensuring transparency, accountability, and mitigating bias—alongside the critical need for robust data security measures. However, despite these substantial insights, there is a

notable gap: few studies have offered an integrated analysis of the long-term effects of AI on organizational culture, workforce dynamics, and sustainable growth. While the immediate technical benefits and operational improvements of AI are well documented, the interplay between ethical considerations and enduring organizational performance remains underexplored. Addressing this gap is essential, as our study seeks to provide a holistic evaluation of AI's role in modern business practices, thereby contributing valuable insights into strategies that balance innovation with ethical responsibility and long-term organizational resilience.

To achieve the study's objectives, the following research questions have been formulated:

1. **What is the current state of using AI in particular, in strategic business decisions?**

As it regards the nature of this question, it can be understood as an attempt to explore the role of AI in strategic settings and concerns, such as data analytics, prediction, and automation. Knowledge of these applications enables a starting point of evaluating the implications of artificial intelligence for decision making. For example, A has been used to improve decision making through performing analysis tasks and presenting information (Trunk et al., 2020).

2. **What are the advantages that organizations get to accrue when adopting the use of AI when making strategic decisions?**

The following research question focuses on the benefits that organizations and industries realize from adopting AI: When such advantages are established quantitative appreciations of benefits arising from these AI applications can assist organizations in explaining the value of investments in these technologies. The literature review suggests that AI has the potential to create substantial business value by helping organizations to make better decisions and develop new strategies (Kitsios & Kamariotou, 2021).

3. **What are the problems of organizations that try to integrate artificial intelligence into their strategic management?**

This question is related to the challenges that may limit the implementation of AI such as; ethical issues, data privacy, and required or specialized talents. It is critical to understand these difficulties in order to prevent possible risks and to create approaches for their

avoidance. Some of the factors which have been noted to cause problems due to the adoption of AI are; Ethical questions to ask are; Data privacy; (Keding, 2021).

4. **In what way does the integration of AI impact the structural and organizational aspects of the firm in the strategic decision-making process?**

They ask questions about the changes in the organization structure necessitated by AI such as changes in decision-making processes and powers, changes in roles and responsibilities associated with AI, and new roles that arise from AI implementation. This review provides knowledge of these effects when implementing the transition and thus the success of AI. AI combined with strategic management creates chances of shifts in organizational structures and processes (Keding, 2021).

5. **What are the questions that AI will ask in terms of strategic business management and decisions, and what should organizations expect next?**

The purpose of this work is to forecast some characteristics of the future evolution of AI and its impact on decisions. When analyzing these unexplored capability consequences, organizations can effectively get ready for innovations in AI and use the new openings to their profit. This shows that AI is on-going and what transpires is given back in a way as benefits and risks that organizations must pay in other to exist (Perifanis & Kitsios, 2023).

This body of knowledge indicates that there is considerable need to comprehend the application of AI in supporting strategic decision-making for organizations that would like to succeed in the current digital environment. In this research, the knowledge gap relating to the effects of AI on strategic decisions is filled, the phenomenon is discussed in depth, recommendations for managers and organizations are provided, and avenues for future research are outlined. To this end, investigating in response to the outlined research questions this study is expected to provide organizations with the right knowledge that would facilitate the integration of AI into their strategic frameworks for improved decision making for sustainable competitive advantages.

This research aims at contributing to the understanding of the interaction between AI and strategic business decision. This paper aims to offer a complete analysis of the current and potential use of artificial intelligence in organizations tackling both the advantages and the disadvantages of this approach, the problems that may be encountered in the

implementation of the presented ideas and further perspectives for development of the artificial intelligence utilization in organizations with the purpose of providing detailed guidelines for strategic management of its application.

There is no doubt that in exploring the impact of Artificial Intelligence in strategic business decision making; to offer a wider and more efficient perspective of AI effects on business strategies, this present study adopts the research method. The empirical approaches used combine a systematic review of the literature with qualitative work to understand the dynamics between AI and strategic management.

1.6.Connection of the goals and objectives with the research questions

The first chapter presented an analytical review of the literature on Artificial Intelligence (AI) and its strategic business planning, with particular emphasis on decision-making and the identification of both the advantages and the challenges in automation, data-driven decision-making, ethical issues and data protection. Nonetheless, it was found that the current literature is mainly focused on the short-term benefits and technical aspects of AI, while there is a lack of integrated studies that investigate in detail the long-term impacts of AI on strategic management, organizational flexibility and the risk resilience of businesses and organizations.

This finding reveals a significant deficiency in the literature: While we know a great deal about the technical benefits, the potential applications in several sectors of activity in the broader market and industry, and also the ethical risks of AI, a comprehensive assessment of how artificial intelligence affects strategic decisions at the business level in a holistic and long-term manner is lacking.

This is where the purpose of this study comes in: to address this gap by conducting a systematic literature review to determine the real and sustainable effects of AI on strategic decision-making, the challenges that organizations face when adopting it, and how practical innovative and responsible AI integration strategies can be developed.

In order to accomplish this, certain research questions were formulated that directly emanated from the results of the literature review. For instance:

• The question “What are the advantages of AI in strategic decision-making?” is derived from the findings of sections 1.1 and 1.2 on automation and data-driven decisions.

• The question “What problems do organizations face when integrating AI?” is connected to sections 1.3 and 1.4 that examine ethical, organizational and technical challenges.

• The question “How does AI affect the structure and strategy of businesses?” is a reflection of the need for more macroscopic, organizational analyses that are still scarce in the existing literature.

The generation of the questions and keywords for the systematic review was therefore done in order to answer the gaps in the literature that were identified in the first chapter. In this way, the use of the selected methodology with a systematic literature review and the keywords that are directly related to the questions (e.g. “AI strategic decision-making”, “AI benefits and limitations”, “AI organisational impact”) will explore how AI is transforming the core of strategic management and what this means for the businesses of the future.

Chapter 2: Methodology

2.1 Introduction

The research methodology employed in this study includes a Systematic Literature Review (SLR) alongside multiple case study analysis which uses qualitative research methods. The research methodology follows academic standards by using guidelines from Yin (2018) for qualitative research and from Moher et al. (2009) and Page et al. (2021) for systematic reviews. The Systematic Literature Review (Snyder, H., 2019) follows the PRISMA 2020 framework (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) to guarantee transparency and replicability during the identification and screening and analysis of academic literature. The study uses this structured method to discover recurring patterns and developing challenges and benefits of Artificial Intelligence (AI) in strategic business decision-making processes. Through the SLR the researcher can both combine insights from multiple peer-reviewed sources and evaluate research gaps to present a unified understanding of AI effects on organizational strategy. The study aims to contribute to academic discourse about AI in business through its methodologically sound and unbiased literature review while providing valuable insights that help organizations achieve evidence-based decision-making and competitive advantage in real-world contexts.

2.2 Definition of the research questions and objectives

The review aims to synthesize existing knowledge on the role of Artificial Intelligence (AI) in strategic decision-making, focusing on effectiveness, challenges, and implementation practices. The literature review that follows will provide valuable insights into the current state of Artificial Intelligence in business environments, which will then guide the formulation of specific research questions that will further refine the objectives of the study. These questions will be incorporated into the methodology section to ensure a focused investigation of the impact of Artificial Intelligence on decision-making processes. The aim of the study is to analyze the role of Artificial Intelligence in enhancing the strategic decision-making capabilities of business organizations. In addition, the key benefits, challenges and risks associated with the application of Artificial Intelligence in strategic decisions will be identified. As Artificial Intelligence can

contribute to achieving a sustainable competitive advantage in a rapidly evolving digital environment, this will also be an area that will be explored. Within the framework of the study, a key objective is to provide actionable recommendations for businesses seeking to integrate Artificial Intelligence into their decision-making processes. Finally, the ethical, organizational and technological barriers to the successful adoption of Artificial Intelligence in business strategies will be assessed.

2.3 Search strategy and database selection

A well-defined search strategy was used to conduct a comprehensive literature review, ensuring that all relevant sources were identified and analyzed. The search strategy for this study involved a multi-database approach to collect a broad and diverse range of academic and professional literature, addressing the main topics of Artificial Intelligence in strategic decision-making. The search was performed by looking for the search strings in abstracts, titles, and keywords. The keywords used in the search were: "Artificial Intelligence in strategic management" "Adoption of AI in business strategy" "AI decision-making in organizations" These keywords were selected to cover various aspects of the role of AI in organizational strategy, from its application in strategic management to its adoption and influence on decision-making processes. Additionally in order to incorporate emerging developments we selected additional keywords such as generative AI, innovation culture, and organizational values. This extension was necessary to ensure that the review reflects both the established literature and the latest research trends related to AI integration in business strategy and innovation processes. Databases were selected to ensure a comprehensive and diverse review of the existing literature. Among the databases selected was Scopus, which provides access to a wide range of sources in business, technology and management. It is particularly valuable for identifying established research and global trends in the adoption of AI in business. Additional key data sources have been drawn from the Web of Science. This database includes a variety of academic journals and conference proceedings focused on technological and management innovations, ensuring that the review includes both fundamental and cutting-edge research. Elsevier is particularly useful for accessing articles on the impact of Artificial Intelligence on

business processes and strategic decisions. Last but not least ACM Digital Library provides access to computing and business-related AI research.

2.4 Keyword and Boolean search strategy

The study used a combination of keywords and Boolean operators (AND, OR) to retrieve relevant literature. The keywords were grouped into four categories to fully cover the intersection of Artificial Intelligence and strategic business decision-making.

1st category: Terms related to Artificial Intelligence. This category included key terms related to Artificial Intelligence, such as Artificial Intelligence, Machine Learning, Deep Learning, and Ethical Frameworks of Artificial Intelligence. These terms ensure that the search captures a wide range of studies that focus on the technological foundations and ethical parameters of Artificial Intelligence. The purpose of selecting these keywords is to understand not only how the technology works, but also how ethical frameworks influence its development and use. This aligns with the study's goal of exploring how AI impacts strategic decision-making, creating a fundamental understanding of the technology and its ethical implications.

2nd category: The second group of keywords addressed the business and strategic dimensions of AI, incorporating terms such as Strategic Decision Making, Business Strategy, Corporate Decision, Management Decision Making, Human-AI Collaboration, and Responsible AI Implementation. These terms refer to studies that explore how AI technologies are applied to support or transform decision-making processes in organizational contexts. The aim here is to focus on the practical applications of Artificial Intelligence in organizational and management environments, directly serving the study's objective of examining the role of Artificial Intelligence in improving decision-making processes and creating strategic advantage in business organizations.

3rd category: Finally, it focused on concepts related to impact and trends, using keywords such as Impact, Challenges, Benefits, Adoption and Trends. This set aimed to identify research that evaluates the outcomes, trends shaping the future of Artificial Intelligence in business, emerging patterns and the broader implications of the adoption of Artificial

Intelligence on business strategy. These keywords ensure that the study not only examines how AI is currently being used, but also anticipates future trends and challenges, directly supporting the study's goal of providing comprehensive recommendations on AI adoption.

4th category: This thematic category incorporates emerging developments such as the generative AI, innovation culture, and organizational values, in order to explore the ethical aspect in depth. This expansion was necessary to ensure that the study reflects both the established literature and the latest research trends related to the integration of AI into business strategy and innovation processes. This included terms such as “Generative Artificial Intelligence”, “Gen AI”, “Innovation Process”, “Organizational Values”, “Data Privacy” and “Transparency”.

2.5 Inclusion criteria for literature

The research study used specific inclusion criteria to evaluate literature quality and relevance. The research period spanned from 2018 to 2025 to include the most significant recent advancements of AI integration in business environments. The research analysis included only English-language studies to maintain linguistic consistency and ensure reliable interpretation. The research analyzed only peer-reviewed academic sources which included journal articles and conference proceedings and review papers because they represent the most rigorous methodologically and scholarly valuable sources. The research included only studies which directly studied Artificial Intelligence affects on business decision-making processes because they directly addressed the research question while excluding general AI discussions.

The selection of literature published between 2018 and 2025 is a deliberate methodological decision, designed to ensure the inclusion of studies that are not only contemporary but also reflective of the rapidly advancing and increasingly sophisticated field of Artificial Intelligence in strategic business decision-making. Prior to 2018, research on the application of AI within organizational strategy predominantly focused on conceptual frameworks or preliminary explorations, often characterized by a lack of substantial empirical evidence and limited practical integration into real-world business contexts. These early studies primarily offered theoretical insights that did not

comprehensively address the tangible impacts or operationalization of AI in strategic management practices (Borges et al. 2020; Keding, 2021; Yang et al., 2024).

In contrast, the period from 2018 onwards has witnessed a profound transformation in AI research, driven by a surge in applied studies, methodological advancements, and an expanding body of case studies and data-driven analyses. This shift is indicative of the growing convergence between AI theory and practice, as industries increasingly adopt cutting-edge AI technologies — such as machine learning, deep learning, and generative AI — to address complex business challenges.

As demonstrated in recent studies the application of these technologies has significantly enhanced decision-making efficiency and accuracy in various sectors (Al-Surmi et al. 2022, Doshi et al., 2025).

Moreover, a critical review of the literature reveals that a considerable proportion of post-2018 publications either extend or reaffirm foundational theories established in earlier research. Consequently, incorporating studies published prior to 2018 would have resulted in significant overlap, offering limited additional analytical insights. By focusing on the 2018–2025 timeframe, this study ensures a comprehensive exploration of the most recent and impactful advancements in the field, thereby capturing the evolution and maturation of AI integration into strategic decision-making processes. This focused approach not only enhances the relevance and credibility of the review findings but also ensures that the analysis remains aligned with the study's objective of providing actionable, evidence-based recommendations for contemporary business practice.

2.6 Exclusion criteria

The systematic review needed further refinement through specific exclusion criteria development. The analysis excluded non-peer-reviewed sources because they lacked academic validation and presented potential subjectivity through editorials and blog entries and opinion articles. The review excluded studies about AI applications in non-business domains unless the research explicitly linked to business strategy or decision-making processes. The analysis excluded publications which failed to demonstrate

research methodology or present insufficient empirical findings because they did not fulfill the required standards of methodological transparency and analytical depth.

2.7 Systematic selection process based on PRISMA 2020

The study implements the PRISMA 2020 framework (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) as described by Page et al. (2021) to achieve a clear and consistent and reproducible literature selection process. The PRISMA framework functions as a standard methodological approach for systematic reviews across health and social science disciplines to guide the identification and screening and selection of academic sources through a structured multi-phase process.

The process unfolds in four key stages. The first step involves an initial search, during which selected academic databases are queried using predefined keywords and Boolean operators to generate a comprehensive pool of potentially relevant studies. The screening phase evaluates titles and abstracts to check for thematic relevance and research scope alignment. The eligibility check follows the preliminary relevance criteria so full texts are thoroughly examined against pre-established inclusion and exclusion criteria. The selection stage requires researchers to keep only those studies which fulfill every methodological and topical requirement.

The systematic approach reduces bias while making results more transparent and improving both credibility and reproducibility of the review findings. The literature supports PRISMA implementation in interdisciplinary fields such as business and technology (Moher et al., 2009; Page et al., 2021) for maintaining methodological rigor and producing high-quality evidence synthesis.

2.8 Thematic analysis

The research uses thematic analysis as its qualitative synthesis method to properly combine findings from chosen studies. A systematic data extraction tool helped maintain data consistency and enabled effective study comparison through standardized collection processes. Through this method researchers can exceed basic data accumulation to identify substantial conceptual patterns which exist between studies. The analysis of each study

required evaluation across five fundamental dimensions. The initial analysis required researchers to document the publication information which included the title together with author names and publication year and academic outlet selection between journals or conferences. The study established a base for researchers to understand the time-based distribution of AI business research and its academic fields. The second analysis focused on studying research methods implemented within each study. This included information on the methodological framework (qualitative, quantitative, or mixed methods), sample size, and data collection techniques. The documentation of these elements enabled researchers to evaluate the research quality alongside its diverse approaches to understand the leading research perspectives within this field. The analysis of this study examined the AI approaches implemented in each research project. The implementation of machine learning together with deep learning and expert systems and predictive analytics as core AI tools remains vital for strategic management and business decision-making according to Duan et al. (2019) and Oppioli et al. (2025). The established classifications enabled the research to understand the technical basis of discovered results. A thorough evaluation of essential findings emerged from each study made up the fourth step of the analysis. The analysis included evidence about AI's impact on business decisions alongside documented advantages (accurate and fast results and cost savings) and difficulties (data quality issues and interpretability problems and ethical problems) and new developments such as AI's integration into strategic planning and human-AI team collaboration. The research performed comparative thematic analysis to discover regular patterns between studies after inductive coding and theme development processes. The interpretive process adopted the Braun and Clarke (2006) framework which provided flexibility through strict analytical methods. Through analysis the study identified fundamental themes that show how organizations understand AI deployment and assess AI implementation in modern organizational environments. The thematic analysis method enabled researchers to turn separate individual studies into a unified knowledge base which exposed fundamental patterns together with discursive tensions and knowledge gaps in academic research.

2.9 Categorization of findings

Research studies underwent data extraction followed by initial analysis to form general thematic categories from the results. The thematic synthesis principles of Thomas and Harden (2008) led to a structured interpretation of diverse research outputs about Artificial Intelligence (AI) applications in strategic business contexts. The initial thematic category explores how AI functions within strategic organizational decision systems. AI serves both operational automation needs and higher-level organizational planning and resource allocation needs according to the literature. Research indicates that organizations integrate AI into their decision-support frameworks which provide data-based solutions for market prediction and investment optimization and risk evaluation tasks (Duan et al., 2019). The second thematic area highlights essential advantages AI delivers during business decision processes. Research identifies four key advantages of AI in business decision-making: better accuracy of decisions, rapid processing of complicated data sets, cost reduction and real-time capability to deliver actionable insights. AI serves as an essential business asset because it improves strategic agility and sustains competitive advantage in unpredictable business environments (Al-Surmi et al. 2022). This thematic area examines the problems together with ethical issues that arise. AI adoption brings substantial data privacy risks while introducing algorithmic biases and decision logic opacity alongside human judgment replacement. Several experts highlight ethical AI frameworks together with governance models as essential components for managing risks while implementing AI responsibly (Jobin et al., 2019; Floridi and Cowls, 2021). Business strategy encompasses the fourth emerging AI trend category. Human-AI collaboration along with explainable AI (XAI) and enterprise-wide digital transformation through AI capabilities represents current business strategy developments. The new trends indicate organizations are moving from independent AI systems toward broader organizational implementation of intelligent technologies across different functions. The thematic classification demonstrates both convergence and divergence between scholars and practitioners regarding AI's changing strategic management role while synthesizing existing knowledge.

2.10 Quality assessment

The study implemented the Critical Appraisal Skills Programme (CASP) framework to ensure methodological rigor and reliable synthesized findings. The CASP framework presents a set of evaluation criteria which assesses the strength of qualitative and quantitative studies through essential dimensions (CASP, 2018). The assessment of each selected study evaluated its research objectives clarity together with its methodological appropriateness and data collection and analysis transparency. The analysis focused on verifying the reported findings' credibility and reliability through methodological soundness assessment of included studies. The application of CASP standards maintained evidence quality throughout the review process which resulted in more trustworthy research outcomes. Studies that fail to meet quality standards may be excluded or considered with limitations.

2.11 Ethical considerations

The development of this literature-based study used an extensive assessment of Artificial Intelligence (AI) research ethics. The ethical side remains vital even though this research project did not perform primary studies with human participants but when investigating AI application cases.

All public data from case study analysis served as the reference material to keep personal and confidential data protected. Data protection functions as an essential rule during research projects because AI technologies present significant risks to privacy and security of information.

Research protocols that involve human participants should provide participants with unrestricted withdrawal rights since this study excluded direct participants. The right enables participants to maintain control over their actions while sustaining research quality at an ethical level.

The central subject in contemporary research today is AI ethics because researchers focus discussions on algorithmic bias alongside transparency and accountability concerns. Radanliev (2025) outlines how AI system implementations create important social and

economic advantages while also introducing new ethical and governance risks. Specific scrutiny focused on evaluating AI applications for transparency elements along with fairness standards and bias-free operation within the case analysis framework. The research evaluated both accountability systems responsible for AI decisions and their potential for auditing. These ethical principles incorporated throughout research creation processes produce reliable investigation findings which lead to sustainable responsible AI development.

2.12 Limitations and challenges

The research follows a systematic review process yet specific limitations need to be recognized. The publication bias represents a significant concern because studies showing positive AI adoption results receive greater publication and indexing opportunities which distorts the overall effectiveness assessment. Publication bias remains a potential limitation, as studies reporting positive findings are more likely to be published, and published more quickly, than studies with negative or null results (Hopewell et al., 2009). The fast-moving nature of Artificial Intelligence technology development produces findings that may become obsolete because new tools and models and applications keep appearing (Yang et al., 2024; Keding, 2021). The fast-evolving nature of AI in strategic decision-making creates temporal limitations because of ongoing technological advancements. Database coverage restrictions might lead to the exclusion of important studies that appear in specialized journals or grey literature or unindexed academic databases. The study identifies research gaps in its findings while conducting a critical assessment of all results based on its specific time frame and research methodology. The review benefits from transparent reflection which maintains both its integrity and balance.

2.13 Conclusion

This study follows the PRISMA 2020 guidelines to present a methodical and clear and thorough investigation of Artificial Intelligence in strategic business decision-making. The research uses systematic synthesis and thematic categorization to advance knowledge about AI's impact on organizational decision-making processes. The research results provide both theoretical and practical knowledge about AI-driven strategies which benefits

academic researchers and industry practitioners who want to understand intelligent data-informed decision-making. The study reveals current research deficiencies which create a foundation for upcoming investigations that will advance AI development in business environments. The study connects empirical data with thematic analysis to help create strategic planning approaches that are adaptable and responsible and forward-thinking regarding AI integration.

Chapter 3: The Role of AI in Strategic Business Decision-Making: A Systematic Thematic Analysis

3.1 Introduction

The ever-increasing penetration of Artificial Intelligence (AI) in business activities creates the need for a deeper understanding of how these technologies shape strategic decision-making and affect overall organizational performance. This chapter focuses on the systematic analysis of existing studies that examine the role of AI in business strategy formulation, with an emphasis on both the opportunities and the challenges that arise. Following the PRISMA methodological flow for the selection of research material and utilizing thematic analysis, the aim of the chapter is to capture the main trends, highlight critical issues and support in an evidence-based manner the discussion around the strategic integration of AI in businesses and the way they may make decisions based on artificial intelligence.

3.2 Data selection and analysis methodology

3.2.1 Search stage and identification

The search for research material and studies was carried out in reputable scientific databases as analyzed in the previous chapter. Indicatively mentioned are: ACM Digital Library, Elsevier (Science Direct), Scopus, Web of Science. Keyword combinations with Boolean operators (AND, OR) were used to ensure the completeness and accuracy of the results. Indicatively mentioned are search queries such as “Artificial Intelligence” AND “Strategic Decision-Making” and “Responsible AI” AND “Business Strategy”. In order to ensure a comprehensive and targeted search aligned with the research objectives set, a structured Boolean query approach was adopted. The search queries were constructed using multiple combinations of thematic keyword clusters, developed based on the research questions outlined in Chapter 1 and the keyword strategy defined in Chapter 2.

The queries aimed to capture three key dimensions of the topic:

- Artificial Intelligence (covering the technology level)

- Strategic decision-making (covering the application level)
- Impact and adoption (covering the evaluation level)

The following are examples of the most representative search string queries used in the selected databases:

- Block 1 - Artificial Intelligence & Strategy to identify how AI are used in strategic decisions: ("Artificial Intelligence" OR "Machine Learning" OR "Deep Learning") AND ("Strategic Decision Making" OR "Business Strategy" OR "Corporate Decision Making")
- Block 2 - Ethical AI deployment and trust: ("Responsible AI" OR "Explainable AI" OR "Ethical AI") AND ("Organizational Strategy" OR "Decision-making" OR "Business Ethics") AND (“AI ethics” OR “Digital Ethics”)
- Block 3 - Human collaboration and impact on business performance or structural change: ("Human-AI Collaboration" OR "AI Integration") AND ("Management Decision Making" OR "Strategic Planning" OR "Business Transformation")
- Block 4 - AI’s effectiveness, challenges, adoptions, limitations, and critical success factors for strategic use: ("AI Adoption" OR "AI Challenges" OR "AI Benefits") AND ("Strategic Decision Making" OR "Organizational Impact") AND (“Generative artificial intelligence” OR “GenAI”) AND (“Innovation management” OR “Innovation Process”) AND (“Organizational Values” OR “Efficiency”) AND (“transparency” OR “Data Privacy”)

Time period (2018–2025) and language filters (English publications only) were also applied. During the identification stage the total records identified: n = 771 through the selected data bases where as following:

ACM Digital Library (n)= 72 Results

Elsevier (Science Direct) (n)= 231 Results

Scopus (n)= 207 Results

Web of Science (n) = 261 Results

3.2.2 Duplicate removal

In the next stage and after a thorough review of all the data collected, duplicate records were removed, both through automatic free reference manager tools (EndNote, Mendeley) and by manual review**.** This process aimed to avoid duplication of studies and more correct management of the material. From the initial 771 total records, 421 duplicate records were removed, resulting in 350 unique publications remaining for further analysis.

3.2.3 Preliminary screening of titles and abstracts

The preliminary screening was based on specific inclusion and exclusion criteria. The inclusion criteria included a clear reference to the use of Artificial Intelligence for strategic decision-making or organizational transformation, publication in peer-reviewed journals or conferences, writing in English, and publication within the period 2018–2025. Accordingly, studies that focused exclusively on technical applications without a strategic or organizational dimension, articles without a peer-reviewed process, or papers with insufficient primary analysis were excluded. After screening of titles and abstracts, 285 articles were excluded and 65 were selected for full evaluation.

3.2.4 Selection based on full text

When reading the full text, the relevance of each study to the research topic was assessed. Particular emphasis was placed on the presentation of strategic processes related to AI and on the differentiation from purely technical approaches. At this stage, 15 additional studies were excluded due to insufficient completeness or ambiguity in the topic.

3.2.5 Final selection of studies

The use of the PRISMA 2020 protocol contributed significantly to ensuring the scientific validity and transparency of this study.

The study selection followed the PRISMA 2020 framework, which includes the four main phases: Identification, Screening, Eligibility, and Inclusion.

During the Identification phase a total of 771 studies were retrieved from the selected databases. The records were collected using multiple Boolean combinations of the keywords (e.g., Artificial Intelligence AND Strategic Decision-Making).

On the next stage, the Duplication phase using reference managers, such as Mendeley, EndNote, as well as manual review, 421 duplicate records were removed. The result was 350 studies for final screening. The titles and abstracts of the studies were assessed by using the inclusion and exclusion criteria, as defined in chapter 2.

During the 3rd phase, the Screening 285 records were excluded due to insufficient relevance (e.g. mostly the technical oriented to AI without business strategic context).

The full texts of 65 studies were ready for review during the Eligibility phase. After reviewing, 15 studies were excluded due to lack of clarity.

The final set of studies included 50 publications, which formed the body of data for the thematic analysis and met all the criteria. The selection process was diagrammatically captured through the PRISMA flow template, as follows, recording all intermediate stages of the research process.

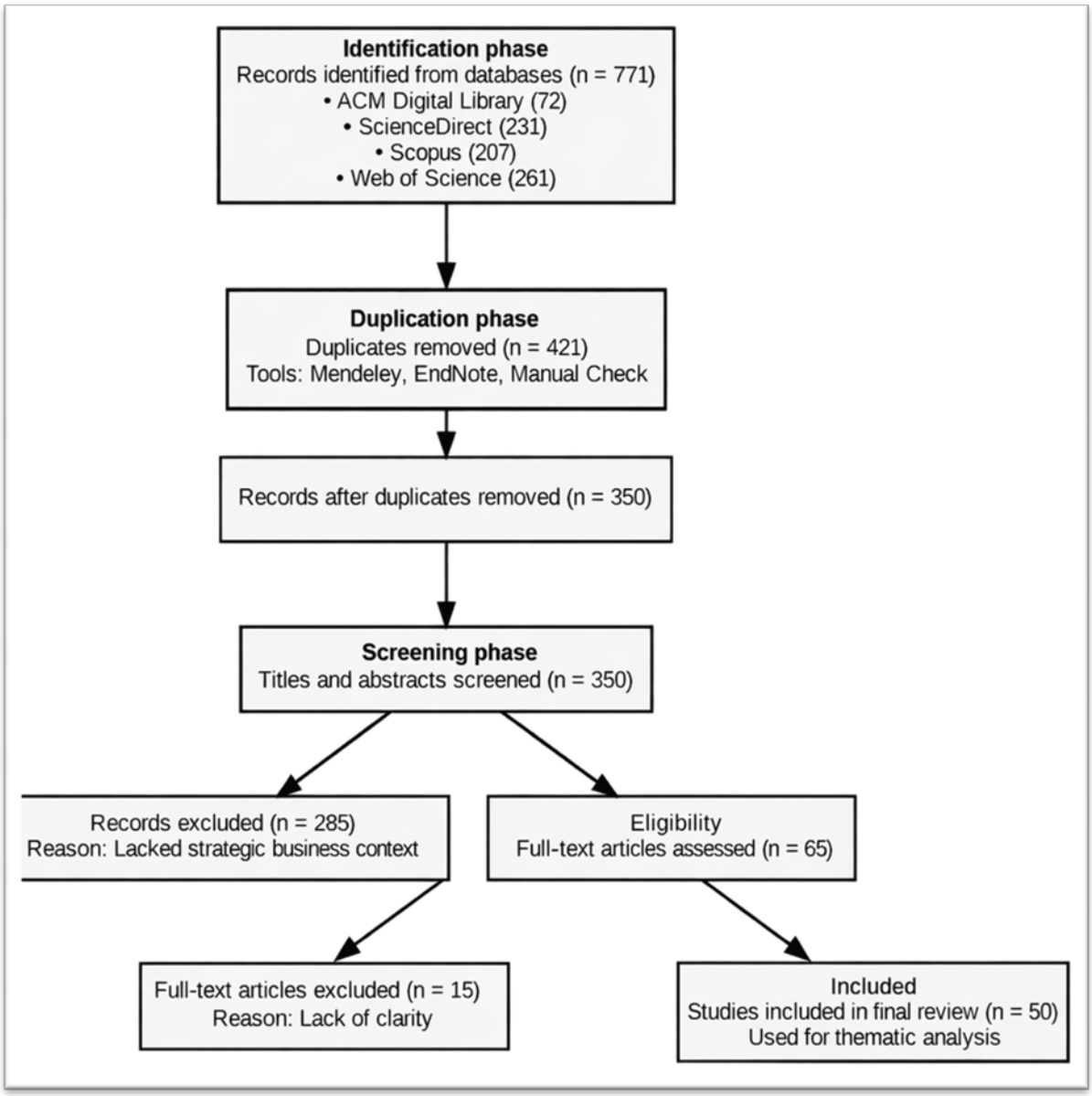

Diagram 1: Study Selection Flow according to the PRISMA standard

Chapter 4: Thematic topic analysis

4.1 Introduction

Artificial Intelligence (AI) adoption in business operations reveals the necessity to create structured frameworks which explain its effects on strategic planning and organizational sustainability. This chapter addresses the research void by evaluating 50 valid research studies (see Appendix: Research studies) through thematic analysis of their qualitative data. Thematic analysis functions through identifying and interpreting recurring patterns which researchers systematically record from their data set. Braun and Clarke (2006) presented a methodological approach for thematic analysis through six stages that begin with data familiarization followed by initial coding then theme searching then theme review before final naming and interpretive analysis. The research evaluated each article separately before synthesizing the findings to discover commonalities and disagreements between them. The analysis depended on predefined key terms combined with research inquiries and theoretical structures including Decision Theory alongside Resource-Based View and Explainable AI.

4.2 Purpose of the chapter

The main purpose of Chapter 4 is to identify significant themes in related literature and determine their responses to the research questions we established in this study. The analysis extends beyond basic finding presentation to evaluate both positive and negative trends and obstacles and possibilities that emerge from AI adoption in strategic management and decision-making. The researchers established separate goals to understand AI's impact on strategic decision-making procedures. The main research objectives included studying the positive effects of AI on business operations together with its impact on competitiveness. We conducted thorough research to understand the organizational challenges organizations encounter when implementing AI systems at technical and ethical and organizational levels. The study documented the changes that AI implementation brought to organizational structures and roles and cultural frameworks. The research objectives included predicting upcoming developments and specifying areas for additional investigation on AI effects on strategic management.

4.3 Link to research questions

The thematic analysis aims to answer the five research questions that chapter 2 presented.
The thematic section "AI in Strategic Decision Support" discusses the existing state of AI implementation which responds to research question 1.
The sections "Benefits of AI Integration" and "Trends and Innovation" provide information about the advantages and possibilities of the technology (answering the corresponding research questions 2 and 5).
The sections Integration Challenges and Ethics - Regulatory Framework focus on the implementation difficulties and ethical risks (answering the corresponding research question 3).
The section Organizational Impacts focuses on the changes in the structure and culture of businesses (answering the corresponding research question 4).
The analysis sections work together as a unified system which answers the question about AI's strategic decision lever capabilities in business planning through specific conditions.

4.4 Article analysis, coding process and tools

The 50 research articles came from Systematic Literature Review (SLR) methodology which is described in Chapter 2. The scientific databases retrieved all studies within the time period from 2018–2025 to maintain relevance and timeliness for contemporary business AI developments. Research articles from peer-reviewed journals and conferences were included if they used AI strategically and addressed business or organizational or ethical matters.

The thematic coding process consisted of two stages which started with initial reading and topic annotation. The researchers noted recurring terms and main concepts such as “strategic decision-making”, “AI adoption”, “ethical concerns”, “generative AI”, “risk management”, etc. during their review of each article. These concepts established the fundamental elements of thematic analysis.

Each article received systematic thematic categorization through content analysis which placed articles into one or multiple thematic sections. Research articles about predictive

analytics and decision-support systems received categorization in the thematic "AI in strategic decision support" section and articles addressing ethical dilemmas were placed under the "Ethics" section.

The research articles received their thematic grouping through application of the following evaluation standards.

- Content: Central arguments, concerns and research questions of each article.
- Focus: Whether the article focused on AI implementation, organizational impact, strategic application or ethical issues.
- The application of AI in the business context: decision support tool, innovation, regulation or structural change.
- Methodological approach: theoretical papers, empirical studies, reviews.
- The thematic areas of this study allowed articles to fit into multiple sections because AI research involves multiple disciplines and dimensions. The analytical method produces valid results through its approach which links thematic areas to the research questions investigated in this study.

The articles underwent thematic categorization through a combination of digital tools and systematic qualitative analysis which resulted in accurate and objective thematic categorization and analytical valid findings.

Microsoft Word and Excel were used to track and assign labels and coding to articles. Researchers used article-topic area mapping tables to track frequencies and detect patterns. The researchers applied keyword tagging through verbal pattern filtering techniques for grouping purposes. Automated tables were developed to detect multi-topic articles while statistical topic frequency analysis was conducted. Additional visualization tools including pivot tables enabled the researchers to create main thematic axis mappings to detect recurring topics.

Table 1: Thematic analysis overview: Occurrence and Key Studies
(source: Styliani Tsitsoula)

a/a	Topic	Description	Number of articles	Occurrence Rate (%)	Related Article
1	AI-Driven Automation	Automation through AI that reduces human error and increases efficiency	12/50	24	Al-Surmi et al. (2022), Csaszar et al. (2024), Doshi et al. (2025), Kitsios & Kamariotou (2021), Koliousis et al. (2024), Kovari (2024), McDermid et al. (2021), Parycek et al. (2023), Perifanis & Kitsios (2023), Suhag et al. (2024), Waduge et al. (2024), Boussioux et al. (2024)
2	Data-Driven Decision-Making	AI for data analysis, trend forecasting, strategic planning and decisions	15/50	30	Al-Surmi et al. (2022), Chaturvedi et al. (2025), Csaszar et al. (2024), Doshi et al. (2025), Duan et al. (2019), Haenlein and Kaplan (2019), Kalogiannidis et al. (2024), Kar et al. (2021), Khalid et al. (2024), Kim and Kim (2022), Kitsios and Kamariotou (2021), Kovari (2024), Larsson and Heintz (2020), López-Solís et al. (2025), Trunk et al. (2020).
3	Ethical & Regulatory Challenges	Issues of ethics, bias, transparency and accountability in AI systems	18/50	36	Ashok et al. (2022), Ayling & Chapman (2022), Bankins (2021), Ferrara (2024), Floridi and Cowls (2021), Guan et al. (2022), Jobin et al. (2019), Kaplan and Haenlein (2019), Madanchian and Taherdoost (2025), McDermid et al. (2021), Radanliev (2025), Rana et al. (2024), Renuka et al. (2025), Samara et al. (2024), Shrestha et al. (2019), Thalpage (2023), Varma et al. (2023), Wamba et al. (2025)
4	Data Security & Privacy	Integrity, protection and management of sensitive data in an AI environment	6/50	12	Khan et al. (2024), McDermid et al. (2021), Renuka et al. (2025), Sargiotis (2024), Samara et al. (2024), Ferrara (2024)
5	Organizational & Structural Impact	Changes in structure, roles and administrative decision-making due to AI	8/50	16	Borges et al. (2020), Csaszar et al. (2024), Jarrahi (2018), Kitsios & Kamariotou (2021), Krakowski et al. (2023), McDermid et al. (2021), Shrestha et al. (2019), Trunk et al. (2020)

6	Innovation & Competitive Advantage	The contribution of AI to strategic innovation and the creation of competitive advantage	9/50	18	Doshi et al. (2025), Kaggwa et al. (2024), Krakowski et al. (2023), Kovari (2024), Kulkov (2023), Liu et al. (2025), Nguyen et al. (2025), Roberts & Candi (2024), Singh et al. (2024)

The following section presents an in-depth thematic analysis after the initial mapping process. The analysis of each theme includes an evaluation of its theoretical basis and empirical evidence and its connection to research questions and final conclusions.

4.5 Analysis of thematic topic 1: AI driven automation

4.5.1 Theoretical foundation and description

The practical application of artificial intelligence in modern business environments reaches its highest maturity through AI-driven automation. Organizations can achieve operational transformation through the implementation of machine learning and robotic process automation (RPA) and intelligent decision-support systems to enhance productivity and minimize downtime and increase strategic agility. The advanced concept of Intelligent Process Automation (IPA) goes beyond basic workflow automation through its implementation of sophisticated prediction algorithms and adaptive optimization capabilities. AI-driven automation serves as a strategic catalyst beyond its role as a technological tool to achieve cost reduction and resource optimization and intelligent human capital reallocation.

4.5.2 Literature-based documentation

An overview of the key studies and their contributions to this thematic area (Top no1 is summarized in Table 1 (under 4.4). The thematic area was identified in 12 out of the 50 analyzed articles, representing 24% of the sample. These studies collectively provide both empirical and theoretical support regarding the effectiveness and impacts of AI-driven automation. The literature repeatedly emphasizes key dimensions such as technological efficiency, strategic adaptability, and organizational readiness as critical success factors for integrating AI into the automation of essential business processes. Al-Surmi et al.

(2022) investigate AI based decision-making strategies within operational performance frameworks, demonstrating how AI strategies contribute to enhanced operational effectiveness. Csaszar et al. (2024) explore how AI and large language models (LLMs) can support strategic decision-making by investors and entrepreneurs, providing insights into AI's applicability within agile business contexts. Doshi et al. (2025) argue that generative AI systems support the evaluation of strategic choices through AI-generated predictions about the value of alternatives. Kitsios and Kamariotou (2021) emphasize that AI adoption is not only a technological advancement but also an organizational and strategic phenomenon, linked to value creation, alignment with organizational strategy, and decision-making capabilities. Koliousis et al. (2024) analyze AI applications in local government, highlighting AI-based strategic policymaking and digital transformation in a small municipality context. Kovari (2024) examines explainable AI (XAI) and its role in fostering transparency and trust in AI-based decision support systems across sectors. McDermid et al. (2021) underline the importance of explainability, assurance, and the wider accountability ecosystem in critical AI systems. Parycek et al. (2023) discuss the challenges and opportunities inherent in public sector automation, focusing on transformation and governance. Perifanis and Kitsios (2023) review how AI integration into business and IT strategy contributes to business value and digital transformation. Finally, Waduge et al. (2024) present the IRPA model as a fusion of AI and RPA, examining its application in supply-chain process transformation and proposing implementation guidelines. Similarly, Suhag et al. (2024) shows that AI-driven chatbots in the hospitality industry can streamline customer-service operations, enhance guest experience, and improve customer satisfaction. Boussioux et al. (2024) demonstrate how human-guided generative AI can augment creative problem-solving, outperforming human crowdsourcing in strategic viability, value, and overall solution quality while offering a scalable and cost-effective approach.

4.5.3 Link to research questions

This further underscores the strategic role of AI in enabling responsive, transparent, and efficient decision-making systems. The theme directly responds to the second research question of the study by showing the various benefits of automation using AI for strategic

decision-making. These include reducing operational costs, increasing accuracy, improving transparency, and the ability to respond faster and more reliably to changes in the environment. At the same time, the theme is also related to the third research question, as it highlights challenges such as the need for organizational readiness, managing change, maintaining accountability in automated systems, and the need to combine technological implementation with administrative and ethical vigilance.

4.5.4 Conclusions of the thematic analysis

The achievement of AI-driven automation depends on both technological capabilities and successful integration within organizational structures and ethical guidelines. The analysis of AI-driven automation demonstrates how artificial intelligence transforms business operations. The reviewed literature demonstrates that automation success depends on three factors: organizational strategic alignment, cultural context and responsible innovation integration. Strategic agility emerges from automation as an organizational enabler rather than a single technological solution which requires a complete approach that integrates technological and organizational and ethical aspects.

4.6 Analysis of thematic topic 2: Data-driven decision-making

4.6.1 Theoretical foundation and description

The implementation of Artificial Intelligence (AI) in business operations leads to better decision-making through advanced data analysis capabilities and scenario modeling and outcome prediction. Data-driven decision-making involves using systematic data analysis to solve complex problems while creating alternative solutions to select the most suitable strategic actions. AI technologies process extensive amounts of diverse data types including structured and unstructured information through machine learning and deep learning and natural language processing and predictive analytics to generate useful insights. The advanced models provide both analysis of complex conditions and real-time decision-making capabilities which enhance organizational adaptability and resilience.

4.6.2 Literature-based documentation

An overview of the key studies and their contributions to this thematic area (Top no2 is summarized in Table 1 (under 4.4). The theme of "Data-Driven Decision-Making" was identified in 15 out of the 50 articles analyzed, representing 30% of the total sample. The literature consistently underscores the critical role of AI in supporting strategic decision processes.

Haenlein and Kaplan (2019) establish the foundational AI classification framework—analytical, human-inspired, and humanized, which informs modern data-driven decision-making systems. For instance, Al-Surmi et al. (2022) investigate the integration of various AI strategies to optimize operational performance, demonstrating that data-driven decision-making yields measurable improvements. Chaturvedi et al. (2025) examine the role of AI–human synergy, adaptability, and AI involvement in strategy formulation, highlighting their influence on strategic decision-making. Csaszar et al. (2024) present empirical evidence from investors and entrepreneurs regarding the use of intelligent systems in risk and opportunity assessment. Doshi et al. (2025) focus on generative AI as a tool for supporting strategic choices through the evaluation of strategic alternatives.

Duan et al. (2019) identify emerging trends and challenges in AI-driven decision-making in the era of Big Data, emphasizing the necessity for explainable, flexible, and reliable models. Kalogiannidis et al. (2024) link AI-enabled decision-making to predictive risk management business continuity, providing relevant case-based evidence. Kar et al. (2021) explore facilitators and barriers to AI adoption in strategy, emphasizing data as a critical input. Khalid et al. (2024) investigates how AI-driven risk management supports sustainable decision-making, highlighting the role of perceived environmental responsibility in managerial decision processes. Kim and Kim (2022) propose an AI-based decision-making model for reinforcing digital transformation strategies, based on organizational, environmental, resource, and mechanism-related factors.

Kitsios and Kamariotou (2021) highlight organizational capabilities and the cultivation of digital culture necessary for effective data-driven decision-making. Kovari (2024) discusses the imperative for strategic transparency and explainability in AI-based decisions, advocating explainable AI (XAI) methodologies. López-Solís et al. (2025),

through a systematic review, synthesize the role of generative AI in improving strategic decision-making in business contexts. Trunk et al. (2020) identify both benefits and pitfalls of AI in strategic planning, arguing for the integration of data insights with managerial judgment. Finally, Borges et al. (2020) provide a critical literature review on the integration of AI into business strategy, offering a framework that helps explain how organizations leverage AI and data in strategic decision-making.

4.6.3 Link to research questions

The approach creates concerns about algorithmic logic dependence which makes human oversight and hybrid judgment models essential. The theme addresses the first research question about artificial intelligence implementation in strategic decision-making systems. The evidence demonstrates that data-driven methods improve decision quality because they provide more informed and objective decisions that adapt well to uncertain environments. The theme supports the second research question by showing that AI implementation brings substantial benefits which include better predictability and reduced errors and faster environmental change responses and customized strategy implementation for specific situations. The implementation of AI systems faces ongoing challenges because of poor data quality and unexplained model behavior and the potential dangers of depending too heavily on automated output.

4.6.4 Conclusions of the thematic analysis

Organizations that implement data-centric strategies develop decision environments which become more agile and evidence-based and context-sensitive. The analysis of "Data-Driven Decision-Making" topic, demonstrates how artificial intelligence transforms organizational strategic thinking. Organizations use AI to base their decisions on data which establishes a new decision-making approach that improves or replaces traditional experience-based and intuitive decision-making through advanced predictive and analytical models. The transformation represents a basic shift toward evidence-based strategy development in contemporary business operations.

4.7 Analysis of Thematic Topic 3: Ethical and Regulatory Challenges

4.7.1 Theoretical foundation and description

The implementation of artificial intelligence (AI) systems creates numerous ethical problems together with social issues and regulatory challenges. The systems operate as "black boxes" because they lack transparency about their decision-making processes which creates essential concerns about accountability and explainability and trustworthiness. AI algorithms that lack proper design may continue existing biases and inequalities which appear in the data or decision-making processes.

The urgent need for complete regulatory frameworks exists at international and national levels to establish principles for ethics and rights protection and transparency and security. The ethical use of AI requires organizations to implement fundamental principles which include fairness alongside non-discrimination and privacy protection and human supervision and responsibility. The regulatory framework for AI continues to transform because new guidelines and laws and standards emerge persistently throughout different jurisdictions. Organizations need to handle the changing legal framework with care because the dynamic regulatory environment results from technological progress and public discussions about AI.

4.7.2 Literature-based documentation

The theme of topic 3, "Ethical and Regulatory Challenges" was identified in 18 out of the 50 articles analyzed, constituting the most consistently recurring topic among the thematic sections (36%). The literature provides diverse theoretical and empirical perspectives on the ethical implications of AI deployment. Madanchian and Taherdoost (2025) investigate the dual nature of AI adoption in HR, balancing efficiency gains through time/cost savings, streamlined processes, data-driven decisions, against critical ethical concerns (data privacy, algorithmic bias, transparency requirements), proposing a framework for ethical AI implementation aligned with organizational values. Ashok et al. (2022) propose an ethical framework for AI and digital technologies that highlights accountability, intelligibility, fairness, autonomy, and privacy as major ethical implications. Ayling and

Chapman (2022) critically examine whether current AI ethics tools are fit for purpose, emphasizing the need to operationalize transparency, accountability, and auditability in practice. Bankins (2021) addresses AI applications in human resource management, advocating for ethical decision-making frameworks that respect employee rights. Ferrara (2024) discusses fairness and bias in AI, including how data, algorithmic, and user biases can reproduce structural inequalities and stereotypes. The unified framework developed by Floridi and Cowls (2021) includes five ethical principles: beneficence, non-maleficence, autonomy, justice, and explicability. Guan et al. (2022) analyze ethical risk factors in AI decision-making, stressing technological uncertainty, incomplete data, management errors, and the importance of risk governance. Jobin et al. (2019) map the global landscape of AI ethics guidelines, revealing considerable heterogeneity and the pressing need for harmonization. Kaplan and Haenlein (2019) further propose the model of Confidence, Change, and Control, which helps explain the internal and external organizational implications of AI adoption in terms of trust, organizational transformation, and managerial oversight. Haenlein and Kaplan (2019) provide a nuanced conceptualization of AI and discuss its organizational implications, including issues of confidence, change, and control. McDermid et al. (2021) highlight the importance of explainability and assurance in AI applications used in critical domains. Rana et al. (2024) explore the ethical dimensions of generative AI in relation to organizational performance, emphasizing institutional pressures, ethical principles, and organizational innovativeness. Renuka et al. (2025) discuss broader legal and ethical challenges related to data privacy and data protection in digital environments. Samara et al. (2024) provide a broader discussion of how AI can enhance business decision-making processes, while also noting implementation-related challenges. Shrestha et al. (2019) show how organizations can combine human and AI decision-making through different structural arrangements, thereby foregrounding the need for human oversight when AI augments or substitutes judgment. Jobin et al. (2019) and Ashok et al. (2022) emphasize that AI governance should be grounded in ethical principles such as fairness, accountability, transparency, and respect for human autonomy. Thalpage (2023) discusses explainable AI (XAI) as a means to improve trust, transparency, and responsible deployment of AI systems. Varma et al. (2023) apply a critical ethical lens to AI in human resource management, highlighting risks of inequity and misuse. Finally, Wamba et al. (2025) frame generative AI as a source

of value creation and resilience, while stressing the ethical, regulatory, and operational challenges that organizations must address. The literature also identifies converging ethical principles for AI, including beneficence, non-maleficence, autonomy, justice, and explicability (Jobin et al., 2019; Ashok et al., 2022). These diverse perspectives are synthesized and summarized in Table 1 (see under 4.4).

4.7.3 Link to research questions

The third research question investigates organizational challenges during AI technology implementation because this topic directly relates to it. The adoption of AI faces significant delays because organizations must overcome ethical issues together with limited transparency and inconsistent regulatory standards. The literature emphasizes the need for unified ethical governance alongside internal compliance culture and effective ethical risk assessment tools. The first research question connects to this topic because ethical considerations determine how AI integrates into decision-making systems. The implementation of sound ethical principles remains essential for users to trust AI systems and stakeholders to accept them and AI technologies to gain legitimacy. The research demonstrates that ethical considerations function as essential components which enable trustworthy AI adoption rather than acting as limitations.

4.7.4 Conclusions of the thematic analysis

AI development requires ethical integration as its core foundation to achieve long-term societal acceptance and legal compliance and organizational legitimacy. The research of AI faces ethical and regulatory challenges which extend beyond technical aspects to address social responsibility and technological stewardship. Organizations need to maintain a careful equilibrium between innovation development and regulatory compliance by implementing AI systems that protect human values and rights and dignity. The development of ethical AI represents a fundamental requirement for achieving sustainable responsible technological progress.

4.8 Analysis of Thematic Topic 4: Data Security & Privacy

4.8.1 Theoretical foundation and description

The deployment of artificial intelligence systems has raised essential worries about protecting data privacy. AI applications need large amounts of data which creates important questions about safeguarding personal information and stopping data breaches and maintaining GDPR and AI Act compliance. Machine learning and generative AI systems that depend on extensive databases create elevated risks of unauthorized access and accidental data exposure and system tampering. The process of training models with personal data presents substantial challenges for consent management which demands strong anonymization methods and risk management systems. AI systems that integrate deeper into organizational decision-making processes require organizations to maintain adaptable protection mechanisms because data security risks continue to evolve. The regulatory framework for data security and privacy remains dynamic because AI system and application vulnerabilities require continuous updates to existing policies and standards.

4.8.2 Literature-based documentation

Data Security & Privacy emerges as a thematic focus in twelve percent of the fifty articles analyzed through this systematic review. The studies' focus and contributions appear in Table 1 under 4.4. The topic stands as a fundamental subject in AI research although it receives less attention than other themes. The available studies offer significant relevant findings despite their small number.

Khan et al. (2024) examine the relationship between artificial intelligence and cybersecurity in the context of geopolitical risk, showing that this interaction becomes particularly significant during periods of increased automation, more sophisticated cyberattacks, and heightened geopolitical tension, thereby underlining the need for balanced innovation and security policies. McDermid et al. (2021) examine explainability and assurance in critical AI systems, linking trustworthy deployment to justified confidence and broader accountability structures. Renuka et al. (2025) discuss broader legal and ethical challenges related to data privacy and data protection in digital environments. Sargiotis (2024) discusses core data-protection controls, including

encryption, access control, and data masking, as mechanisms for protecting sensitive information and reducing exposure to breaches. Samara et al. (2024) provide a broader discussion of how AI can enhance business decision-making, while also noting implementation-related challenges and the need for responsible deployment. Ferrara (2024) further discusses fairness and bias in AI, showing how data, algorithmic, and user biases can produce discriminatory or unsafe outcomes unless mitigation strategies are applied.

The analyzed literature demonstrates that organizations need complete security approaches which unite design-based privacy principles with regulatory data governance and continuous risk evaluation. The establishment of trust in AI systems demands these principles to be integrated into both technical systems and organizational operational frameworks.

4.8.3 Link to research questions

Secure-by-design principles and proactive threat modeling are emerging as best practices in overcoming these barriers. The topic "Data Security & Privacy" is primarily linked to research question three, as it addresses essential technical and regulatory barriers organizations face when deploying AI systems. Organizations that fail to anticipate data security risks or lack proper infrastructure risk damaging their legitimacy, user trust, and compliance with international regulations. The existence of robust security guarantees enables enterprises to adopt AI technologies in high-risk sectors such as healthcare, public administration, and finance, thus enhancing their strategic readiness and acceptance.

4.8.4 Conclusions of the thematic analysis

The responsible deployment and implementation of AI is fundamentally dependent on considerations of data security and privacy. While the systematic review includes six articles on this topic, representing 12% of the total, these articles demonstrate substantial value due to their high quality and relevance to the broader discourse. Organizations operating in a digitally connected environment must establish comprehensive data governance frameworks and deploy AI-based security architectures, while also implementing preventive privacy measures. Data security must be treated as a strategic priority, not merely a technical specification, in every organization utilizing AI.

Ultimately, a culture of cybersecurity awareness must be embedded across all organizational levels to ensure AI integrity and resilience.

4.9 Analysis of Thematic Topic 5: Organizational & Structural Impact

4.9.1 Theoretical foundation and description

The implementation of artificial intelligence (AI) brings about fundamental changes in organizational operations, directly affecting internal structures, employee roles, and overall functions. AI systems transform human resource management, power distribution, organizational culture, and leadership approaches, thereby highlighting the critical need for organizational adaptability. Organizations that adopt AI must reevaluate their decision-making systems, governance structures, and perspectives on human-machine collaboration. The emergence of new hybrid human-AI collaboration models establishes reciprocal effects that reshape both organizational responsibilities and corporate identity, leading to more dynamic organizational frameworks.

4.9.2 Literature-based documentation

The thematic category of "Organizational & Structural Impact" is present in eight out of the fifty articles included in this systematic review, representing 16% of the total sample. The studies reviewed in this thematic area are summarized in Table 1, topic 5, under 4.4. These articles provide valuable insights into how AI implementation leads to significant structural transformations within organizations. The research shows that AI adoption requires organizations to continuously evolve from static structures to dynamic systems that support innovation and adaptability. Csaszar et al. (2024) examine how AI can augment strategic decision-making processes; showing that large language models (LLMs) can generate and evaluate strategies at a level comparable to entrepreneurs and investors, with implications for organizational search, representation, and aggregation processes. Jarrahi (2018) develops a symbiotic model of human-machine collaboration, illustrating how organizational decision-making can benefit from the complementary strengths of humans and AI in uncertain and complex environments. Kitsios and Kamariotou (2021)

emphasize the development of organizational capabilities that enhance AI effectiveness, underscoring the importance of building innovative cultures and robust change management processes. Krakowski et al. (2023) explore how AI disrupts traditional competitive advantages, suggesting that organizations must adapt internal capabilities and managerial arrangements to remain aligned with evolving technological demands. McDermid et al. (2021) investigate explainability and assurance in critical AI systems, emphasizing that trustworthy deployment depends on justified confidence and a wider accountability ecosystem. Shrestha et al. (2019) propose that organizational decision-making structures evolve through different configurations of human and AI involvement, including full delegation to AI, hybrid sequential decision-making, and aggregated human–AI decision-making. Trunk et al. (2020) discuss the integration of AI into organizational decision-making under uncertainty, highlighting how the division of tasks and the definition of roles in the human–machine relationship require reconsideration.

4.9.3 Link to research questions

The third research question is directly addressed by this thematic area, as organizational and structural changes represent significant barriers to the successful integration of AI. The shift from technological adoption to functional transformation requires cultural maturity, managerial support, and ongoing evaluation of organizational performance. The reorganization of power systems and the establishment of human-machine collaboration frameworks directly impact decision-making processes, which also ties to the first research question. AI integration redefines decision-making authority, decision-making standards, and accountability mechanisms, fundamentally altering operational systems and introducing new ethical and epistemological bases for organizational decision-making processes.

4.9.4 Conclusions of the thematic analysis

AI's impact extends beyond enhancing productivity; it transforms the entire organization through its influence on structural elements, operational dynamics, hierarchical systems, governance frameworks, and internal data flow. While this thematic area is addressed in

only 16% of the reviewed articles, it holds significant conceptual value, as it demonstrates the profound changes that AI induces in modern enterprise operations.

Organizations that aim to harness AI effectively must transition to dynamic systems that learn and adapt, while simultaneously establishing collaborative partnerships with intelligent machines. AI should be viewed not merely as a technological tool, but as a catalyst for organizational transformation, fundamentally reshaping how businesses operate and make decisions. Embracing this transformation enables organizations to unlock new performance frontiers and maintain relevance in an AI-augmented economy.

4.10 Analysis of Thematic Topic 6: Innovation & Competitive Advantage

4.10.1 Theoretical foundation and description

Artificial Intelligence (AI) is intrinsically linked to the generation of innovation and the enhancement of organizational competitiveness. Organizations adopting AI technologies are empowered to redesign products, develop new services, automate innovation processes, and improve customer experiences—all contributing to the establishment of a sustainable competitive advantage. AI serves not merely as a supportive tool, but as a strategic driver of differentiation. It enables organizations to respond more swiftly to market shifts, achieve operational excellence, and explore new market opportunities. When integrated into business strategy, AI facilitates both the exploration of new opportunities and the exploitation of existing ones, aligning technological capabilities with organizational goals.

4.10.2 Literature-based documentation

The theme of "Innovation & Competitive Advantage" is present in 9 out of the 50 reviewed articles (18%), illustrating the critical role of AI in driving innovation, developing new business models, and reinforcing strategic positioning. The studies reviewed in this thematic area are summarized in Table 1, topic 6, under 4.4. Doshi et al. (2025) argue that generative AI can support the evaluation of strategic alternatives, thereby improving the assessment of strategic choices. This perspective is complemented

by Kaggwa et al. (2024), who discuss how AI reshapes strategic decision models and enhances business agility in organizational contexts. Kovari (2024) emphasizes the importance of transparency, accuracy, and trust in AI-based decision support systems, highlighting explainability as a condition for user acceptance. Krakowski et al. (2023) explore how AI changes the sources of competitive advantage, showing that AI adoption reshapes firms' competitive capabilities and requires new managerial capabilities to remain strategically relevant. Further exploring the practical impact of AI, Kulkov (2023) examines next-generation business models for AI startups in the healthcare industry, showing how AI can support value creation and business model innovation in a sector-specific context. Liu et al. (2025) investigate the connection between strategic flexibility, decision-making performance, and innovation, suggesting that AI fosters both adaptability and creativity within organizations. Nguyen et al. (2025) provide a review of human–AI augmentation in the workplace and propose future research directions regarding its nature, impacts, and challenges. Roberts and Candi (2024) document how AI transforms innovation management, pointing out new approaches in product and service design that are enabled by AI capabilities.

The increasing relevance of AI in innovation is witnessed by the production of several studies on topics such as strategic uses of AI (Borges et al. 2020). Borges et al. (2020) synthesize AI's strategic integration proposing a framework of four value creation sources—decision support, customer/employee engagement, automation, and new products/services—that enhance business value and competitive advantage.

Lastly, Singh et al. (2024) examine the relationship between AI, exploratory and exploitative innovation, and organizational performance, noting the moderating influence of ethical dilemmas and the external environment on the innovation process.

Overall, the literature consistently underscores that innovation is significantly enhanced when AI is strategically embedded in organizational processes. AI is not merely a technological tool but a core element of business differentiation, shaping both the creation of new value and the evolution of business models.

4.10.3 Link to research question

This theme primarily addresses the second research question, as it illustrates how AI shapes innovative strategies and strengthens organizational competitiveness. AI functions not only as a decision-support mechanism but also as a catalyst for redefining business models, enabling firms to reinvent how they create and deliver value. There is also a strong connection to the first research question, as the strategic use of AI in innovation directly impacts decision-making—particularly through structured forecasting, scenario planning, and risk modeling. The integration of AI enables more accurate and timely decision-making processes, which further strengthens the competitive advantage of organizations.

4.10.4 Conclusions of the thematic analysis

When creatively and strategically integrated, AI acts as an innovation multiplier. The theme of "Innovation & Competitive Advantage," represented in 9 articles (18% of the sample), reflects evolving trends in business design, competitive positioning, and technological leadership. Achieving competitive advantage through AI extends beyond the mere adoption of technological tools—it necessitates organizational agility, a culture of experimentation, and ongoing strategic reflection. Innovation, in this context, becomes the result of a synergistic relationship between technology, strategy, and ethical awareness—an essential condition for sustainable success in the digital age.

Chapter 5: Conclusions

5.1 Introduction

This chapter summarizes the main findings of the study, addressing the research questions while examining both theoretical and practical implications. In addition, the limitations of the methodology are analyzed and directions for future research are proposed.

5.2 Synthesis of thematic findings in relation to the research questions

The study analyzed 50 selected scientific publications (see Appendix: Research Studies) selected from the period 2018–2025, which were considered contemporary and representative of developments in the field of Artificial Intelligence (AI) and strategic management. Six main research areas/topics (see Table 1, under paragraph 4.4) emerged from the thematic analysis, which systematically answer the research questions of this study.

Regarding the first research question, which concerns the integration of AI into strategic decision processes, the findings demonstrate that AI decisively enhances data analysis, scenario prediction and outcome modeling. Through techniques such as machine learning, generative AI and predictive analytics, organizations are moving to a new, evidence-based decision-making model that goes beyond the traditional empirical approach.

Regarding the second research question, which concerns the benefits of adopting AI, the findings indicate that this technology offers strategic flexibility, operational efficiency and enhanced innovation. The findings show that organizations that consistently integrate AI, develop new value models and gain competitive advantage through differentiation, speed and personalization of their strategies.

Regarding the third research question, which concerns limitations and challenges, critical issues emerge, such as the lack of transparency (e.g., black-box models), regulatory compliance demands, ethical ambiguity, and cultural resistance within organizations.

Regarding the fourth research question, which concerns the structural and organizational impact of AI integration, the findings show that AI influences decision-making hierarchies, role distribution, governance mechanisms, and human–AI collaboration models. Organizations increasingly need to redesign structures, redefine responsibilities, and strengthen internal capabilities in order to integrate AI effectively into strategic processes.

Regarding the fifth research question, which concerns future developments and what organizations should expect next, the findings suggest that AI will continue to expand its role in strategic planning, innovation, and governance. Future organizational success will depend not only on technological adoption, but also on explainability, ethical oversight, regulatory alignment, and the development of adaptive, human-centered decision-making frameworks.

Successful integration of AI requires not only technical infrastructure, but also institutional maturity, organizational adaptability and leadership that embodies principles of responsibility and accountability. Overall, AI does not function simply as a technological tool, but as a multiplier of cognitive capacity, strategic foresight and transformation of organizational decision-making.

5.3 Practical applications of findings in business practice

The results of the study offer useful conclusions for the operational application of AI at a strategic level. In the area of decision support, AI enables the prediction of future developments and scenario modeling. Organizations can evaluate strategic options and assess likely consequences under uncertain conditions through advanced methods including machine learning, predictive analytics, and generative AI (Duan et al., 2019; Doshi et al., 2025). Generative AI, in particular, can support the evaluation of strategic alternatives and improve the quality of strategic assessment, especially when combined with human judgment (Doshi et al., 2025; López-Solís et al., 2025).

AI functions as a driving force that accelerates innovation. Companies that implement AI for market analysis and product design as well as strategic positioning can improve

innovation processes, strategic agility, and value creation by using AI-enabled systems to support product and service development, decision quality, and responsiveness (Roberts and Candi, 2024; Liu et al., 2025). This strengthens business differentiation not only through efficiency, but also through new forms of value creation, decision support, and innovation management (Borges et al., 2020; Krakowski et al., 2023).
Organizations need to invest in employee up skilling, job role description and redesign, and human–AI collaboration models (Jarrahi, 2018; Trunk et al., 2020; Nguyen and Elbanna, 2025). In addition, they need to create a work environment that supports the effective combination of human judgment with algorithmic outputs through technical training, organizational learning, and cultural development (Krakowski et al., 2023).

The implementation of AI decision systems creates new challenges for corporate governance regarding responsibility distribution. Organizations need to redefine their accountability systems and auditability protocols and oversight mechanisms when AI systems perform autonomous decision functions (Martin, 2019). Organizations need to establish specific governance systems which define how decision authority gets delegated to algorithms particularly when decisions have significant impact or ethical implications.

The essential factor for responsible AI adoption involves implementing regulatory compliance together with ethical safeguards. The General Data Protection Regulation (GDPR) and the Artificial Intelligence Act (AI Act) require organizations to provide transparency while protecting data and making algorithms accountable (European Union, 2016; European Commission, 2024).

Organizations need to implement explainable AI (XAI) alongside algorithmic audits and risk assessments to fulfill both regulatory standards and stakeholder requirements (Gunning and Aha, 2019).

The implementation of algorithmic governance serves both as a mandatory compliance measure and a strategic tool for organizations. It provides organizations with structures for responsible AI deployment, accountability, traceability, and oversight, which can strengthen stakeholder trust and institutional legitimacy (Martin, 2019; Busuioc, 2021; König and Wenzelburger, 2021).

5.3.1 Managerial implications

The implementation of the findings carries significant responsibility for managers. Strategic decision-making in the era of AI is not just a technological matter, but represents a fundamental shift in the nature of leadership, affecting all senior executives at the C-level. Their role evolves from being simple data users to becoming AI-enabled leaders who must combine technological literacy with critical judgment, governance awareness, and cross-functional coordination (Jarrahi, 2018; Trunk et al., 2020; Nguyen and Elbanna, 2025).

The Chief Executive Officer (CEO) must lead the cultural transition towards an AI-aware leadership model, effectively balancing technological capabilities with human-centered values.

The Chief Strategy Officer (CSO), in turn, must not only understand what the data indicates, but also how it is generated, evaluate its accuracy, identify potential biases, and recognize which algorithms influence its processing. Essentially, the CSO must interpret algorithmic outcomes with critical thinking and translate them into actionable and reliable strategic direction.

At the same time, the Chief Information Officer (CIO) is expected to ensure technical readiness while acknowledging the human and organizational implications of AI. The CIO must also integrate principles of transparency, ethical use, and cross-sectoral collaboration into the organization's broader AI governance framework.

Beyond these core executive roles, the contribution of other C-level positions is equally vital in shaping an AI-driven strategic environment.

The Chief Data Officer (CDO) plays a central role in ensuring the integrity, governance, and strategic utility of data. This role oversees the quality and lifecycle of organizational data, promotes a data-driven culture, and facilitates the alignment of data architecture with ethical AI practices.

The Chief Risk Officer (CRO) is responsible for identifying and mitigating the risks introduced by algorithmic decision-making. This includes evaluating risks related to bias, lack of transparency, model drift, regulatory non-compliance, and reputational impact. The CRO must collaborate closely with both technical and strategic leaders to ensure that AI systems are aligned with the organization's risk tolerance and regulatory obligations.

5.4 Methodological limitations and future research directions

This study relied exclusively on secondary data obtained from peer-reviewed scientific literature. Although the analysis was rigorous, the absence of empirical investigation constrains the ability to validate the findings within real-world business environments. In addition, the exclusive reliance on English-language sources and the omission of grey literature may have excluded valuable local or regional case studies and context-specific insights.

The selection of the 2018–2025 time frame was driven not only by the relevance of recent developments but also by a critical evaluation of the scientific maturity of the field. Earlier studies were not necessarily irrelevant, but the literature before this period was more fragmented and comparatively less empirically consolidated, whereas more recent research shows clearer thematic convergence and stronger links to contemporary organizational practice (Keding, 2021; Yang et al., 2024).

Nonetheless, the use of secondary analysis introduces inherent methodological constraints. Despite the breadth and quality of the reviewed sources, the data was limited to published academic studies, thereby excluding applied business insights, industry reports, market surveys and data analysis, unpublished findings (grey literature), and organizational realities that are not explicitly documented. Moreover, the language restriction may have overlooked domestic and non-English-speaking applications of AI.

Another notable limitation lies in the absence of a cross-sectional empirical framework capable of capturing variation in AI integration across organizational types, industry sectors, enterprise sizes, and levels of digital maturity. While the thematic analysis provides synthetic comparative knowledge, the lack of quantitative or mixed-methods approaches limits the generalizability and statistical verification of observed trends.

In light of these limitations, the following future research directions are proposed:

- The adoption of mixed-methods approaches that combine qualitative content analysis with quantitative measurement of AI's impact on organizational decision-making. Such studies could employ survey-based instruments or AI maturity assessment tools (Sadiq et al., 2021).

- The development of comparative case studies across diverse industries and geographies to identify the contextual factors that facilitate or hinder AI-driven strategic transformation.
- The construction of conceptual and evaluative frameworks—such as "AI Readiness for Strategy" models—that incorporate leadership dynamics, data culture, institutional support, and technological maturity. These models could be integrated into strategic assessment processes and could build on AI maturity-model research and strategy-oriented AI frameworks (Sadiq et al., 2021; Borges et al., 2020).
- A cross-disciplinary inquiry into the role of ethical leadership is required, focusing on how leaders mediate between technological capabilities and normative imperatives. The concept of algorithmic governance is emerging as a critical research field, especially in relation to accountability, social legitimacy, and co-design with stakeholders. (Martin, 2019; Busuioc, 2021; König and Wenzelburger, 2021).
- Ultimately, future research is called upon to bridge the gap between academic theory and practical implementation, by developing multi-dimensional strategic models centered on AI—models capable of informing new paradigms of organizational behavior in the age of algorithmic decision-making.

5.5 Contribution to business research and practice

This study contributes to the expansion of theoretical understanding linking artificial intelligence to the strategic functions of enterprises. It introduces a multidimensional model of interpretation, demonstrating that AI goes beyond its role as a support tool and actively shapes strategic r***e***asoning. Moreover, the study offers practical recommendations for business leaders aiming to leverage algorithmic tools not only for operational efficiency but also for strategic realignment and differentiation. The concept of algorithmic governance emerges as a critical lever in the evolving landscape of management science.

Algorithmic governance establishes structures for accountability, transparency, and ethical compliance in data-driven decision-making processes. As organisations increasingly rely on complex machine learning models—often described as "black boxes"—the need for

explainable AI (XAI) becomes essential to justify and interpret outcomes at a strategic level (Gunning and Aha, 2019).

Algorithmic governance addresses key risks such as algorithmic bias, which may reinforce existing inequalities or generate unethical outcomes if not properly managed. It also supports alignment with regulatory frameworks such as the GDPR and, progressively, the EU AI Act, through mechanisms including impact assessments, audit trails, and model validation protocols (Veale and Edwards, 2018; Martin, 2019). Importantly, algorithmic governance can enhance stakeholder trust by institutionalising fairness, traceability, accountability, and responsible AI use across the enterprise (Martin, 2019; Busuioc, 2021; König and Wenzelburger, 2021). Strategically, it transforms AI from a simple operational tool into a governed, value-aligned capability, requiring leadership that balances innovation with ethical imperatives and cross-functional oversight. In this context, algorithmic governance is not only a compliance necessity but a strategic enabler of sustainable, trustworthy, and human-centric AI integration.

The findings confirm that AI serves as a foundational element in the digital transformation of modern enterprises. Successful implementation, however, requires more than technical expertise—it necessitates organizational adaptability, leadership competence, critical thinking, and institutional readiness. For companies seeking to remain competitive in an algorithmically driven business environment, understanding and integrating these dimensions is imperative.

This study also serves as a point of departure for further academic inquiry and applied assessments into the strategic implications of AI. In becoming truly data-driven organizations, businesses must embrace not only technological solutions but also cognitive, educational, and managerial transformations.

Key takeaways

- *AI provides strategic foresight, contingent upon institutional maturity, investment in data infrastructure, and the development of analytical capabilities.*
- *Organizational design must foster human–machine collaboration, supported by a renewed corporate culture and AI governance mechanisms.*

- *Strategic innovation is enhanced when AI is embedded within learning-oriented cultures and data-driven leadership. This necessitates continuous training and human–machine partnership.*
- *Compliance and ethics function as accelerators of trust and differentiation, establishing both strategic credibility and sustainable competitive advantage.*

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