

Final Project 1

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The Impact of Artificial Intelligence Adoption on the Speed of Organizational Decision-Making

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1. Chapter 1: Introduction

1.1. Research Background

The contemporary business environment is characterized by rapid technological transformation, increasing global competition and growing uncertainty. Organizations across industries are required to respond quickly to market changes, customer demands, and competitive pressures. In such a dynamic context, decision-making speed has become a critical factor that determines organizational competitiveness and long-term sustainability. Companies that fail to respond in a timely manner risk losing opportunities, market share, and strategic positioning.

Historically, managerial decision-making relied heavily on human judgment, professional experience, and manually prepared reports. Although these traditional approaches were effective in relatively stable environments, they are often insufficient in today's data-intensive landscape. Modern organizations generate vast amounts of structured and unstructured data from digital platforms, customer interactions, supply chains, financial systems, and operational processes. Processing this data manually requires significant time and effort, which may delay critical decisions.

Artificial Intelligence (AI) has emerged as a transformative technological solution capable of addressing these challenges. AI refers to advanced computational systems that simulate human cognitive functions such as learning, reasoning, pattern recognition, and problem-solving. Through machine learning algorithms, predictive analytics, data mining and intelligent automation, AI systems can process large datasets efficiently and generate actionable insights in real time. These capabilities provide organizations with the potential to enhance both the quality and speed of decision-making.

The adoption of AI technologies has expanded significantly across sectors such as banking, healthcare, logistics, telecommunications, manufacturing, and retail. In the banking sector, AI supports fraud detection and credit risk assessment. In healthcare, it assists in diagnostic analysis and treatment planning. In logistics and supply chain management, AI enables demand forecasting and route optimization. Across these industries, AI-driven tools increasingly function as decision-support systems that augment managerial capabilities rather than replace human judgment.

One of the primary expectations associated with AI adoption is the acceleration of organizational processes. By automating repetitive analytical tasks and providing predictive insights, AI reduces the time required to interpret data and evaluate alternatives. Faster access to reliable information allows managers to respond more effectively to emerging opportunities and potential threats. In competitive markets, even small improvements in response time can translate into substantial strategic advantages.

However, while existing research widely acknowledges the positive relationship between AI adoption and organizational performance, limited attention has been devoted specifically to decision-making speed as a distinct outcome variable. Most studies emphasize productivity, cost reduction, or innovation outcomes without isolating the temporal dimension of decision processes. Decision speed plays a crucial role in organizational agility, yet empirical evidence regarding its direct association with AI adoption remains insufficient. Furthermore, the implementation of AI systems is not free from challenges. Organizations must ensure data quality, technological infrastructure readiness,

employee training, and alignment with strategic objectives. In some cases, resistance to change or insufficient technical expertise may slow down the integration process. Therefore, the assumption that AI automatically accelerates decision-making requires empirical validation.

Given the increasing investment in AI technologies and the strategic importance of rapid decision-making, it is essential to examine whether AI adoption genuinely enhances managerial responsiveness. This study seeks to explore the impact of artificial intelligence adoption on the speed of organizational decision-making, thereby contributing to both academic knowledge and managerial practice in the era of digital transformation.

Recent studies have further emphasized the growing strategic role of artificial intelligence in enhancing managerial decision processes. For example, research highlights that AI-driven analytics improves the timeliness and accuracy of executive decisions, particularly in dynamic and uncertain environments (Dwivedi et al., 2023). Similarly, contemporary management research suggests that AI-enabled systems contribute to organizational agility by accelerating information processing and supporting real-time strategic responses (Berente et al., 2021). These developments reinforce the need to empirically examine the specific impact of AI adoption on decision-making speed.

1.2. Research Problem

Despite the growing integration of artificial intelligence technologies within organizations, there is limited empirical clarity regarding their direct impact on decision-making speed. While AI systems are often promoted as tools that

accelerate analytical processes, it remains uncertain whether their adoption consistently leads to faster managerial responses in practice.

1.2.1. Theoretical Gaps

Existing literature primarily focuses on the influence of AI adoption on organizational performance, innovation, operational efficiency, and competitive advantage. However, fewer studies isolate decision-making speed as an independent measurable outcome. Moreover, research often examines AI capabilities at a strategic level without deeply analyzing how AI-supported systems affect managerial responsiveness in time-sensitive decision contexts. This indicates a theoretical gap in understanding the specific temporal implications of AI adoption.

1.2.2. Practical Gaps

From a practical perspective, organizations investing in AI technologies frequently face implementation challenges such as data integration issues, system complexity, skill shortages, and employee resistance. In some situations, these challenges may delay decision processes rather than accelerate them. Managers therefore require empirical evidence to determine whether AI adoption genuinely improves decision speed or introduces additional operational complexities.

Accordingly, the main research question of this study is:

How does the adoption of artificial intelligence technologies affect the speed of organizational decision-making?

1.3. Research Significance

This study is important at both the theoretical and practical levels. As artificial intelligence continues to reshape organizational processes, understanding its specific impact on decision-making speed becomes increasingly relevant. By examining this relationship, the study contributes meaningful insights to both academic research and managerial practice.

1.3.1. At the theoretical level

At the theoretical level, this study contributes to the expanding body of knowledge on artificial intelligence adoption and technology-enabled decision-making. While previous research has extensively examined the relationship between AI and organizational performance, innovation, and operational efficiency, fewer studies have focused specifically on decision-making speed as a measurable outcome variable. By isolating decision speed as the dependent variable, this research provides a more precise understanding of how AI influences managerial processes.

Additionally, the study enriches theoretical discussions related to organizational agility and digital transformation. Decision-making speed is closely linked to strategic responsiveness and adaptability in dynamic environments. Therefore, investigating the relationship between AI adoption and decision speed extends current theoretical frameworks that explore how emerging technologies enhance organizational capabilities. The findings may also support future research examining mediating or moderating variables within technology–decision relationships.

1.3.2. At the practical level

At the practical level, this study offers valuable insights for managers, executives, and decision-makers who are considering or currently implementing artificial intelligence systems within their organizations. As organizations invest significant financial and strategic resources in AI technologies, it is essential to evaluate whether these systems effectively accelerate decision-making processes or create additional complexity.

The findings of this research may help organizations assess the real benefits of AI adoption in terms of improving managerial responsiveness. Furthermore, the study may assist leaders in identifying potential implementation challenges such as resistance to change, lack of technical expertise, or data integration issues. By understanding these practical implications, organizations can make more informed strategic decisions regarding digital transformation initiatives and optimize the integration of AI systems into their decision-making frameworks.

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