

# DATA DRIVEN MANAGEMENT AND ARTIFICIAL INTELEGENGE: A SYSTEMATIC LITERATURE REVIEW ON THE TRANSFORMATION OF MANAGERIAL THINKING

Diah Permata Sari, Ni Komang<sup>1</sup>; Bagas Adi Suputra, I Made<sup>2</sup>; Intan Nathasa Pratiwi, Kadek<sup>3</sup>; Pradana, Riyan Priyambodo<sup>4</sup>; Istri Anom Bintang Pramawati, Anak Agung<sup>5</sup>; Primawardani Endy, Ni Made<sup>6</sup>

<sup>1,2,3,4,5,6</sup>Universitas Udayana

\*) email : [permataaaa999@gmail.com](mailto:permataaaa999@gmail.com)<sup>1</sup>, [bagassuputra01@gmail.com](mailto:bagassuputra01@gmail.com)<sup>2</sup>, [intan.nathasa100@gmail.com](mailto:intan.nathasa100@gmail.com)<sup>3</sup>, [riyanpriyambodopradana@gmail.com](mailto:riyanpriyambodopradana@gmail.com)<sup>4</sup>, [bintangpramawati10@gmail.com](mailto:bintangpramawati10@gmail.com)<sup>5</sup>, [nimadeenyprimawardani@gmail.com](mailto:nimadeenyprimawardani@gmail.com)<sup>6</sup>

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## Abstract

Digital transformation exerts a profound and far reaching impact across various organizational domains, encompassing work dynamics, organizational structures, and business models. It plays a pivotal role in fostering innovation and enhancing operational efficiency within organizations. This study employs a Systematic Literature Review (SLR) methodology, as it facilitates a comprehensive and systematic analysis of relevant literature. Furthermore, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework was applied to guide the literature selection process.

The findings reveal that Artificial Intelligence (AI) and Big Data have disrupted conventional managerial thinking, shifting traditional approaches toward modern, analytics-driven strategies. Evidence suggests that the implementation of AI within management significantly bolsters operational efficiency and effectiveness. Consequently, it is imperative for organizations to conduct regular audits and evaluations of their underlying algorithms. Adopting a hybrid management approach emerges as an ideal solution to navigate current challenges, ultimately enhancing organizational effectiveness and ensuring informed decision making.

**Keywords:** *Digital Transformation, Artificial Intelligence, Big Data*

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## 1. INTRODUCTION

Digital transformation has emerged as a pervasive global phenomenon, fundamentally reshaping various sectors of human life, particularly organizational management. This transformation has precipitated fundamental shifts in how decisions are made and how organizations are governed. Such conditions indicate that conventional management paradigms are increasingly being supplanted by data-driven methodologies and predictive analytics. Technologies such as Machine Learning (ML), Big Data, the Internet of Things (IoT), and Artificial Intelligence (AI) have become the primary catalysts in revolutionizing how organizations formulate business strategies and process information. These technologies enable organizations to move beyond a reliance on historical data, incorporating sophisticated algorithmic predictions instead.

McAfee and Brynjolfsson (2017) posit that companies adopting data-driven strategies consistently outperform those relying on intuition. Furthermore, Davenport

and Ronanki (2018) emphasize that approximately 90% of executives leveraging AI for decision making processes report enhanced accuracy in strategic decisions and improved operational efficiency. This underscores the pivotal role of digital transformation in fostering innovation and optimizing operational excellence within organizations.

However, the advantages offered by the adoption of AI are accompanied by significant challenges. O'Neil (2016) argues that algorithms can reinforce biases inherent in historical data; consequently, the resulting decisions are not always equitable or objective. In this context, data privacy and ethical considerations have become paramount concerns in the application of AI within the business world. These shifts exert a broad impact, encompassing diverse organizational dimensions such as work dynamics, organizational structures, and business models. Ultimately, a data-driven approach is increasingly becoming the norm in modern management, replacing traditional methods that are often less measurable and less precise.

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## 2. METHODOLOGY

This study utilizes a Systematic Literature Review (SLR) methodology, as it enables a comprehensive and structured analysis of relevant literature. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework was adopted to guide the literature selection process. The application of PRISMA aimed to evaluate and filter articles pertinent to the research topic, ensuring that only high-quality and valid academic sources were included. The process encompassed four primary stages: identification, screening, eligibility, and inclusion, all based on predefined criteria.

Literature for this study was retrieved from several prominent academic databases, including Web of Science, Scopus, Google Scholar, and IEEE Xplore. To ensure the relevance of the sources, the search strategy employed keywords such as "AI in Management," "Digital Management," "Data-Driven Decision Making (DDDM)," "Business Analytics," and "AI Strategy." Subsequent articles were evaluated based on their relevance to the research objectives, while concurrently considering their scientific contribution and methodological rigor.

To maintain research quality, a selection process was conducted using specific inclusion and exclusion criteria. The inclusion criteria comprised articles published within the last 10–20 years that specifically addressed the research topic and had undergone a rigorous peer-review process. The selected body of work included empirical studies, robust literature reviews, and theoretical frameworks. Following the selection phase, the chosen articles were analyzed based on key indicators: major trends in AI implementation across various managerial domains, shifts in management paradigms, and the philosophical and ethical implications of these changes. Finally, findings from these various studies were categorized to provide an in depth

understanding of how AI and data are transforming contemporary management approaches.

### 3. FINDINGS AND DISCUSSION

#### 3.1 Data-Driven Management Transformation and AI

Based on the article search conducted using the Publish or Perish (PoP) application with the keywords "AI in Management," "Data-Driven Decision Making," and "Business Analytics" a total of 200 articles were retrieved. During the initial identification phase, 98 article titles were found to contain these keywords, while the remaining 102 articles did not. Subsequently, from the 98 articles identified in the first stage, only 15 were deemed directly relevant to the core objectives of this research.

Table 1. Data-Driven Management Transformation and AI

Aspect	Traditional Management	Data-driven and AI based management
<b>Decision Making</b>	<b>Experience and Intuition based</b> Decision making rooted in intuition or subjective feelings is inherently prone to bias and external influence. While intuitive decisions offer certain advantages, they also possess significant limitations (Zahara, 2019).	<b>Data-driven &amp; predictive analytics</b> Research by Al-Zahrani et al. (2024) demonstrates that AI implementation enhances decision making efficiency, thereby reducing reliance on intuition and increasing precision. Furthermore, Ibeh et al. (2024) emphasize that business analytics techniques empower organizations to facilitate more informed strategic choices
<b>Organizational Model</b>	<b>Hierarchical and Bureaucratic</b> Hierarchical and bureaucratic structures prioritize a clear division of duties and responsibilities. This model allows for rigorous control over processes and facilitates centralized governance. However, it often leads to a lack of flexibility and hampers innovation. Furthermore, the implementation of this model frequently deviates from Max Weber's ideal principles, potentially resulting in inefficient and less controlled	<b>Agile and Digital Platform based</b> Research by Komolafe et al. (2024) indicates that organizations adopting business analytics can adapt more rapidly to market volatility. More flexible organizational models foster enhanced collaboration and ensure faster responses to customer needs. Additionally, Mohammad et al. (2025) demonstrate that the integration of technologies such as blockchain and AI significantly bolsters operational efficiency.

Aspect	Traditional Management	Data-driven and AI based management
	administrative actions (Dewi, 2017).	
<b>Risk Management</b>	<p><b>Historical Analysis</b> Risk management through historical analysis frequently relies on retrospective data and past experiences to identify and mitigate potential organizational risks. By examining historical datasets, managers can discern trends and patterns affecting human resources. However, this approach is constrained by its inherent limitations; a heavy reliance on historical data often results in diminished responsiveness to unforeseen challenges (Wibisono et al., 2023).</p>	<p><b>Real-time risk assessment with AI</b> Studies by Kristian et al. (2024) demonstrate that AI models provide precise predictions for real-time risk identification, enabling organizations to implement proactive mitigation strategies. Furthermore, Tuboalabo et al. (2024) underscore the necessity of ethical considerations in data-driven decision making to minimize unintended risks.</p>
<b>Leadership</b>	<p><b>Charismatic and Visionary</b> Charismatic and visionary leadership styles are complementary paradigms that exert a significant impact on organizational success. Charismatic leadership is characterized by the leader's ability to captivate and inspire subordinates through personal charm and charisma. Conversely, visionary leaders possess the capacity to establish a clear organizational direction and long-term objectives while formulating the requisite strategies to attain them. Furthermore, visionary leadership necessitates systemic, holistic, integrative, and comprehensive thinking</p>	<p><b>AI-augmented leadership</b> Research by Raizada (2023) indicates that the integration of AI within management education enhances leadership capabilities. AI assists leaders in optimizing decision making processes and provides personalized feedback mechanisms. This augmented approach enables leaders to prioritize team development and innovation. Furthermore, Gatrell et al. (2024) emphasize the critical importance of transparency and accountability in the deployment of AI within leadership roles.</p>

Aspect	Traditional Management	Data-driven and AI based management
	to effectively manage diverse organizational facets (Firdaus et al., 2023).	

Based on Table 1, data driven and AI driven management transformations have transformed the way organizations operate in various aspects, including decision-making and organizational models. Meanwhile, risk management has also undergone significant changes with the implementation of AI technology, which enables real-time risk assessment.

### 3.2 The Role of AI in Decision Making

Decision Support Systems (DSS) integrate data from diverse sources, including business analytics and AI technologies, to provide nuanced insights. By offering a platform that facilitates information sharing and collaborative analysis, DSS enhances communication and coordination among team members. Meanwhile, AI-driven automation is emerging as a pivotal force in optimizing operational efficiency and human capital management across various organizations.

However, AI-driven automation also presents significant challenges that organizations must navigate. A primary concern is the risk of technological dependency, where an over-reliance on automated systems may erode human oversight. AI has become an invaluable instrument for analyzing market trends and consumer behavior, providing organizations with profound strategic advantages. By leveraging data analytics, firms can identify latent patterns in consumer behavior that were previously imperceptible.

Nevertheless, the application of AI in behavioral analysis raises critical concerns regarding consumer data privacy and security paramount issues in the digital era. While AI can offer exceptional insights, it remains essential for organizations to maintain a "human-in-the-loop" approach to ensure that ethical judgment and qualitative context remain integral to the decision-making process.

### 3.3 Challenges and Ethical Implications of AI-Based Management

Algorithmic bias can emerge from various sources, including non representative training data or algorithms designed based on erroneous assumptions. When the data used to train AI models contains inherent biases, the resulting outputs inevitably reflect these systemic prejudices. Consequently, organizations must engage multidisciplinary teams comprising data scientists, ethicists, and business stakeholders to proactively identify and mitigate potential biases.

Furthermore, organizations are obligated to ensure that data collection and utilization processes do not infringe upon individual privacy. It is imperative that employees possess adequate skills and literacy to manage data securely and effectively. By establishing robust data governance, organizations can build trust with consumers and bolster their reputation within the digital business ecosystem.

### 3.4 Hybrid Management Model: Integrating Intuition and Data Driven Strategy

The integration of AI within agile management frameworks enables organizations to respond to market shifts with greater speed and precision. By leveraging AI capabilities, teams can identify relevant trends and patterns in real time, facilitating more informed and evidence-based decision-making a critical component of agile management.

Leaders who effectively utilize AI to augment their decision-making can significantly enhance team performance. AI provides leaders with profound insights into team dynamics and individual developmental needs. Moreover, this synergy fosters innovation, as AI can generate recommendations derived from deep data analysis.

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## 4 CONCLUSION

Artificial Intelligence and Big Data have disrupted traditional managerial thinking, precipitating a paradigm shift toward modern, analytics driven strategies. This transformation empowers organizations to leverage data for more informed and evidence based decision making. Research indicates that the implementation of AI within management significantly enhances operational efficiency and effectiveness.

Contemporary decision making has become increasingly data driven, predictive, and real time, offering managers deeper strategic insights. Nevertheless, ethical challenges and algorithmic bias remain paramount concerns in the deployment of these technologies. Evidence suggests that data biases can skew analytical results and subsequent decisions. Therefore, it is essential for organizations to conduct regular audits and evaluations of their underlying algorithms.

A hybrid management model combining human intuition with artificial intelligence emerges as the ideal solution to current challenges. This approach allows organizations to harness the computational power of AI while retaining the essential human element in decision-making. Collaboration between humans and AI can bolster creativity and innovation within the organization. Ultimately, leaders who embrace AI-augmented approaches can significantly optimize team effectiveness and strategic outcomes.

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