# Artificial intelligence-driven management: Bridging innovation, knowledge creation, and sustainable business practices

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## ABSTRACT

The rapid evolution of artificial intelligence (AI) from expert systems and fuzzy logic to sophisticated technologies such as deep learning and big data analytics has transformed modern management practices. This study explores how AI-driven management practices can effectively bridge innovation, knowledge creation, and sustainable business practices, thereby contributing to long-term organizational growth and the achievement of the Sustainable Development Goals (SDGs). By employing a comprehensive review research technique and analyzing 1,377 articles from the Scopus database, this study uncovers critical themes, sub-themes, variables, and their interlinkages. The findings demonstrate AI's transformative potential across diverse domains, including human resource management, consumer service management, strategic leadership, operational efficiency, and customer experience enhancement. This paper addresses the role of AI governance frameworks that prioritize ethical considerations such as accountability, transparency, privacy, and cybersecurity, while fostering innovation-oriented knowledge creation. Despite significant advancements, knowledge gaps remain in integrating AI with innovative business models to achieve sustainability objectives. The study concludes by offering research and policy recommendations to promote AI-driven innovations that are ethically sound, operationally efficient, and socially responsible. This work contributes to the discourse on AI's role in enhancing knowledge systems and innovation processes, providing valuable insights for scholars, practitioners, policymakers, and business leaders.

## Introduction

The legacy of artificial intelligence (AI) can be traced back to the growth of expert systems and fuzzy logic, which further matured with the advent of big data, deep learning, and the widespread use of graphics processing units (Pournader et al., 2021). Since 2010, the global pace of AI implementation has promised significant transformations, alongside concerns regarding business management and the future of work (Bughin & Manyika, 2019). The contribution of AI to improving business processes, promoting innovation, designing sustainable applications, and strengthening competitiveness is giving rise to new forms of human–AI collaboration that are transforming traditional management practices (Chang, 2020).

A substantial body of research explores the integration of AI into sustainable business models, particularly in areas such as management, digital transformation, service operations, decision-making, leadership, customer experience, governance, and supply chain systems (Aldoseri et al., 2024). Yet, the suitability of AI for addressing specific management challenges, especially when combined with innovative business methods and knowledge creation, still demands greater scholarly and policy attention. Current research on the interaction between functional domains, knowledge management, digital transformation, and sustainable business models remains limited. Existing studies nonetheless emphasize the need for a deeper understanding of how AI-driven organizational development can address the roots of unsustainable practices, such as inefficient resource allocation, weak stakeholder engagement, and short-termism. Structured syntheses of knowledge using rigorous approaches can expand the scope of inquiry and provide valuable

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insights for the field. This review contributes to one such synthesis by highlighting that knowledge is a primary catalyst of organizational innovation and growth. Knowledge creation extends from idea generation to the successful embedding of advanced processes within organizational systems (Olan et al., 2022). Machine learning, a core subset of AI, facilitates this by enabling systems to generate knowledge from data that informs strategic decision-making (Kalasani, 2023). The linkage between AI and knowledge absorption is particularly compelling, as recent advances in AI are transforming how organizations learn and apply knowledge across functions.

AI applications such as chatbots uncover hidden patterns in customer data, creating more authentic engagement and deeper insights into consumer behavior. Such cognitive interactions not only improve customer experience but also generate tangible business value through automation (Kalasani, 2023). Empirical evidence further demonstrates that AI integration enhances operational efficiency and customer satisfaction, thereby boosting overall business productivity. Tailored dashboards, for instance, provide organizations with real-time insights for improved decision-making. However, adoption remains uneven, with only about one-third of supply chain executives actively deploying AI to transform their operations (Agrawal et al., 2021). Similarly, in human resource management (HRM), AI streamlines functions such as workforce planning and task allocation, improving efficiency (Votto et al., 2021). Despite these benefits, widespread AI adoption continues to face challenges. Effective integration requires addressing both technological and social factors influencing acceptance. Resistance often arises from limited expertise, financial barriers, and mistrust of emerging technologies. Human involvement therefore remains vital in overcoming these obstacles. Rather than perceiving AI as a mere cost, organizations need to recognize its capacity to amplify human capabilities. Yet, as human–AI interaction deepens, ethical implications grow more pressing. AI-driven decision-making has been associated with bias and accountability gaps, underscoring the need for strong governance frameworks (Walter, 2024).

The body of literature on AI remains fragmented and peripheral, with little consensus on how to embed AI effectively within managerial functions (Gama & Magistretti, 2025; Fadhel et al., 2024). To address this shortcoming, this study systematically maps the interlinkages between AI, innovation, and sustainability, and proposes a framework that aligns AI adoption with long-term business and societal goals. Beyond identifying gaps, the paper advances a comprehensive research and policy agenda to guide businesses in leveraging AI for sustainable practices. Methodologically, we employ a structured review approach (Chopra et al., 2023; Sharma et al., 2020) analyzing 1,377 Scopus-indexed articles. This systematic review uncovers critical themes, sub-themes, and variable interactions, generating insights that inform both future scholarship and practical policymaking. The knowledge gaps motivate the following research questions:

*RQ1: Which sub-themes, key themes, and variables indicate the intersection of six major functional domains and AI leading to organizational performance?*

*RQ2: Which theoretical frameworks highlight the advantages of integrating AI into business systems to create knowledge, drive innovation, and attain a sustainable business model?*

*RQ3: What are the benefits and key challenges in embedding AI across functional domains such as operations, HRM, strategic leadership, customer service, and supply chain?*

*RQ4: What is the most suitable framework for integrating the key functional domains in the context of AI leading to a sustainable business model?*

The remainder of this paper is structured as follows. Section 2 presents the theoretical background, offering a detailed discussion of relevant theories that form the foundation for integrating AI into innovation and knowledge management. Section 3 outlines the review strategy, describing the methodological approach employed in this study, including the criteria for selecting and analyzing 1,377 articles from the Scopus database. Section 4, titled Results, presents the key themes, sub-themes, variables, and interlinkages identified through the review, followed by Section 5, titled Discussion, which synthesizes the findings and their implications. Section 6 concludes the study by outlining future research directions, policy implications, and study limitations.

## Theoretical background

The application of AI in management is a rapidly growing field that has the potential to revolutionize various aspects of business operations. To understand the conceptual foundations and theoretical underpinnings of AI in management, it is essential to explore the existing literature and research in this area.

One of the most important theoretical frameworks for deciding technological resources that businesses should consider when allocating their expenditures in the organizational context is the resource-based view (RBV; Wade & Hulland, 2004). This perspective holds that not all resources have the same potential to produce value; rather, the competitive positions that enterprises can attain through the utilization of their resources are contingent upon specific attributes of those resources (Lockett et al., 2009). Since gaining a sustainable competitive advantage (SCA) mostly depends on knowing what AI-specific resources a company must manage, the RBV offers a suitable theoretical foundation. Additionally, the RBV is a compelling method for elucidating the business value resulting from IT expenditures due to its ability to link the frameworks with other theoretical viewpoints such as dynamic capabilities and absorptive capacity (Mikalef & Gupta, 2021). The RBV anticipates benefits from AI if it enhances human cognitive capacities as a generally applicable technology.

An extension of RBV is proposed as the dynamic capabilities theory (DCT), which propounds that some capabilities are purposefully built in organizations to accomplish specific corporate actions, empowering organizations to sense opportunities, seize them, and reconfigure existing strategies to build SCA (Teece et al., 1997). These three prominent capabilities enable organizations to break shackles enroute sustainable development. Sensing involves exploring and scanning the right opportunities in the external environment, seizing entails the internal potential that an organization possesses to transform the seized opportunities for creating value for stakeholders, and reconfiguration comprises the ability of the organization to mobilize and exploit the resources for generating knowledge (Wang & Hou, 2025). However, just scanning and procuring the right technology is not enough; an organizational level integration is also required. Full-scale assimilation entails how the concerned organization can effectively transform its operations and processes to fully integrate the technology in response to evolving situational dynamics, and how AI must complement the functional systems (Chatterjee et al., 2024). The emerging AI trends pose a promising opportunity for agile organizations to adopt digitalization at breadth. Along with this sensing, developing the capabilities to integrate these AI-powered modules will further empower organizations to ascend the exploitation of resources. It has been further suggested that upon successful integration, AI tends to create value for organizations and all stakeholders by enacting dynamic capabilities (Mikalef & Gupta, 2021). The transformation of existing capabilities to dynamic capabilities is done through learning, which is built upon knowledge within the system. According to Argote and Fahrenkopf (2016), knowledge serves as a critical driver of enhanced organizational performance. The knowledge-based view (KBV) builds upon foundational management frameworks and is regarded as an extension of the RBV (Kogut & Zander, 2003). The knowledge-based view offers a robust theoretical framework for aligning digitalization with organizational capabilities, thereby transforming technological potential into sustainable competitive advantage (Dey et al., 2024). The KBV emphasizes that knowledge generated within an organizational setting represents a vital strategic

asset, essential for achieving a sustainable competitive advantage in dynamic business environments. This is attributed to three key characteristics: (1) knowledge is socially complex and deeply embedded within organizational routines and culture; (2) it is difficult for competitors to replicate/imitate; and (3) it is continually evolving and co-created within the firm (Chowdhury et al., 2020). Consequently, businesses are increasingly adopting strategies aimed at fostering continuous innovation across all operational levels, thereby enriching employee collaboration and overall performance. In this context, AI offers a valuable platform that enables decision-makers to facilitate knowledge creation and knowledge sharing (KS) initiatives, ultimately benefiting both employees and the organization at large (Argote & Fahrenkopf, 2016). The KBV is employed to examine how appropriate knowledge-sharing strategies, formulated by managers to cultivate AI-related skills, competencies, and expertise, can foster employees' trust in AI systems and enhance clarity regarding human roles, expectations, and responsibilities (Chowdhury et al., 2020).

Furthermore, few studies have endorsed AI absorption by utilizing certain frameworks in multiple contexts. In the domain of *risk and governance*, Žigienė et al. (2022) proposed a conceptual framework for commercial risk assessment and management based on elements of AI. This framework aims to provide small and medium enterprises (SMEs) with a solution that deploys AI to assess and manage commercial risks effectively. By incorporating AI technologies such as machine learning (ML) and knowledge management, this framework can help SMEs make informed decisions and mitigate potential risks. Similarly, Velev and Zlateva (2023) analyzed the challenges of AI application for disaster risk management. The study highlights the potential of AI technologies such as data analysis, risk assessment, and emergency management systems to improve disaster preparedness, response, and recovery. In the related context, Cui et al. (2022) analyzed the theoretical mechanism of AI affecting corporate governance and empirically examined its intermediary effect on Chinese A-share listed companies. The study highlights the potential of AI to improve corporate governance practices by enhancing decision-making processes, increasing transparency, and reducing information asymmetry.

In the *knowledge-oriented and human-centered* functions, Tapalova & Zhiyenbayeva (2022) presented a theoretical framework for the application of AI in education, specifically in the context of personalized learning. The framework explores how AI can transform educational content and delivery methods to meet the individual needs of learners, enhancing student engagement. In HRM, Islami & Sopiah (2022) conducted a systematic literature review to examine the applications of AI in HRM and its impact on businesses and employees. The review highlights the potential of AI to automate routine human resources (HR) tasks, improve recruitment and selection processes, enhance employee training and development, and enable data-driven decision-making in HRM. Similarly, in the marketing domain, Paschen et al. (2019) conceptualized the impact of AI on market knowledge in business-to-business (B2B) marketing. The study highlights how AI can enhance knowledge management in the era of big data, such as data analytics and ML.

The theoretical foundation suggests that integration of AI, which is the most critical part of transforming business systems, initiates from building internal capabilities that are rare, inimitable, valuable, and non-substitutable in nature. These capabilities foster knowledge creation and the sharing of expertise, further making the companies gain a sustainable competitive advantage.

## Methodology

Review research differs from other types of research, such as empirical inquiries and conceptual research, in that it draws on existing knowledge to inform the creation of new information (Ameen et al., 2022; Kunisch et al., 2023; Mahendru et al., 2022). This section summarizes our strategy with respect to the data and methods employed.

### Data

We use a standard procedure comprising identification, screening, and combining references to create the dataset. This technique is designed to enable other researchers to replicate, update, or duplicate the methods. Fig. 1 is a summary of the technique, which consists of a set of clearly defined steps. We use the Scopus database and search for publications and reviews published up to September 2024 using AI keywords. A thorough search that ended on September 30, 2024, yielded 230,176 documents. To further refine the dataset, we apply criteria to narrow down the types of documents (articles and reviews), the language (English), and the subject areas relevant to the study (business, management, and economics), yielding 5,697 documents. In the next step, to maintain the standard of our review, we applied the ABS (Academic Journal Guide), ABDC (Australian Business Deans Council Journal Quality), and impact factor filter. We only include the papers ranking 3 or above in ABS, or ranking A or A* in ABDC, or having an impact factor greater than 5. With the application of this filter, we are left with 1,702 papers. These filters were applied as the quality control measures to ensure that only high-quality, peer-reviewed, and widely acknowledged publications were included in the final analysis. Moreover, these journal ranking systems are widely recognized and used across the academic community to differentiate between scholarly and non-scholarly outlets, thus improving the methodological robustness of systematic reviews (Mrva-Montoya, 2021). Finally, we excluded 325 more articles based on their title, abstracts, and keywords. This step aimed to eliminate studies that were not relevant to the core scope of our review, which focused specifically on "Artificial intelligence-driven management and sustainable business practices." Also, the entire screening was conducted independently. Finally, we rigorously narrowed down the dataset by removing any papers that did not relate to AI in management. This rigorous refining process ultimately resulted in a final dataset comprising 1,377 articles.

### Methods

We analyzed 1,377 papers to shed light on thematic evolution, topic modeling, and variable modeling. The thematic evolution is the result of an extensive manual literature review, which led to the development of constructs. The constructs are understood as higher-order conceptual themes or dimensions that emerge from the systematic analysis of the literature. These constructs represent recurring patterns and theoretical concepts rather than simple keywords. To identify these constructs, we employed a two-step approach. First, we used Python package tools to generate thematic clusters. Second, we conducted a detailed manual review of key articles within these clusters to interpret the context and theoretical significance of the grouped terms. Constructs were then formed by grouping closely related thematic elements based on their semantic relevance, frequency, and conceptual coherence across the literature (Dev et al., 2025). This approach ensured that the constructs reflect meaningful thematic areas that synthesize both empirical findings and theoretical perspectives. Thereafter, we divided the paper among all four authors (344 papers each) to manually review them and derive findings and discussions. This approach allowed us to maintain both rigor and practicality in handling a large dataset while ensuring that the core thematic insights were derived from carefully read and analyzed publications, which took a total of eight months. After the development of constructs, we clustered similar constructs supported by the literature under one head known as themes. Therefore, this clustering of constructs provided us with six themes that are useful to support the intellectual structure: AI-driven HRM, AI in consumer and service management, ML in management decision-making, AI in strategic management and leadership, AI in operational and supply chain management, and AI in enhancing customer experience. These themes are further explored from the correlational point through a co-occurrence heat map, variable modeling, and exploratory topic
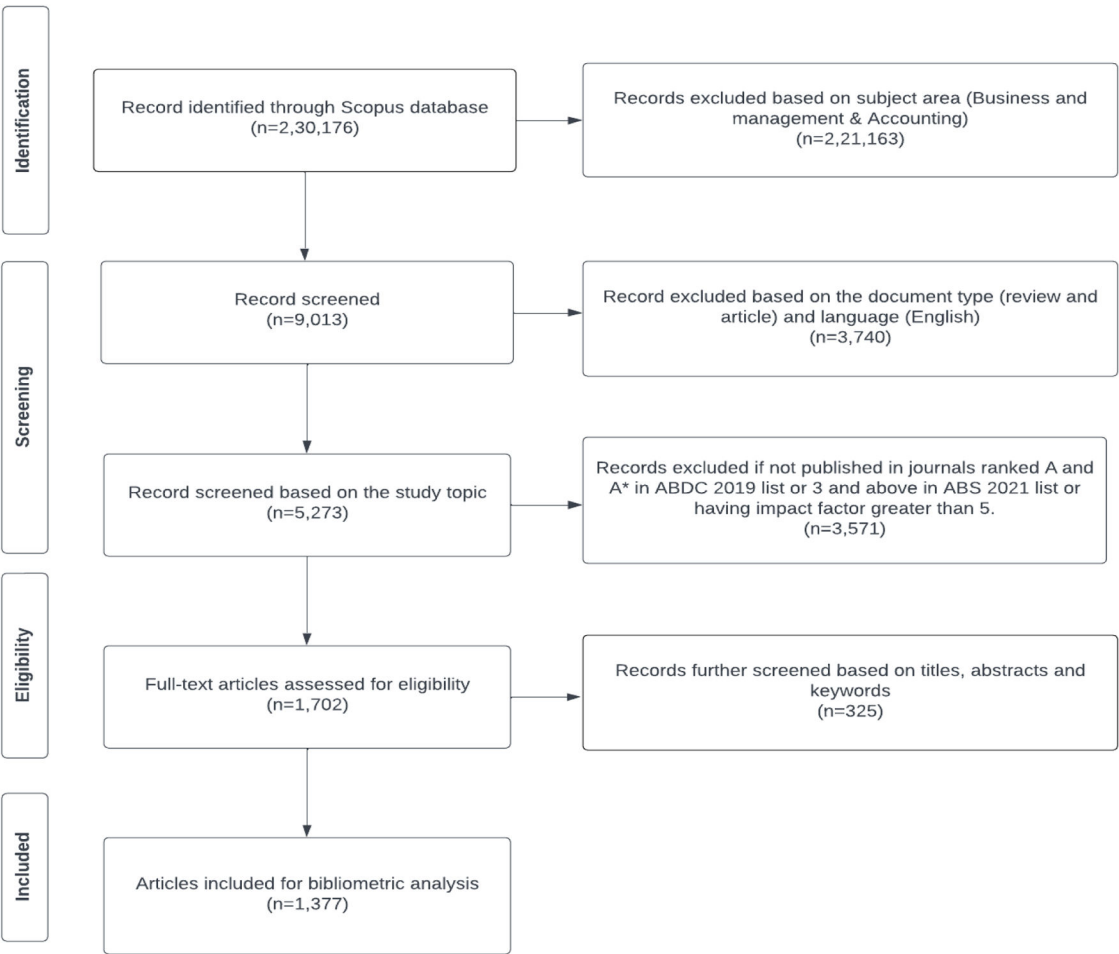
**Fig. 1.** PRISMA flowchart.

analysis (ETA) for visualizing data in the matrix form by aesthetically representing the association through different colors and variables used in relation to AI and management. We have further developed a section focusing on the future research agenda and policies. This helps researchers gain a more comprehensive understanding of their research topic and identify opportunities for further investigation. Also, the last section includes implications catering to almost ten different sectors (retail, manufacturing, healthcare, finance, etc.) and the impact of AI in business globally. This study adopts a hybrid review method that combines systematic analysis with a manual literature review. This dual strategy enables us to map large-scale publication trends and perform an in-depth synthesis of key themes and constructs in the field. The analysis was conducted using R package to capture quantitative patterns, while the structured review contextualizes and interprets the thematic findings. The justification for using this hybrid approach is grounded in established methodological literature, PRISMA, which collectively supports the rigor, transparency, and reproducibility of the review process (Nangia et al., 2023).

## Findings

Our thematic analysis leads us to six primary themes (Table 1): AI-driven HRM, AI in consumer and service management, ML in management decision-making, AI in strategic management and leadership, AI in operational and supply chain management, and AI in enhancing customer experience. Using keywords from the titles, we identify potential sub-themes by analyzing recurring concepts and topics within the dataset. We thoroughly organize the keywords into coherent sub-themes

under each primary theme to ensure that each sub-theme encapsulates a unique aspect of the overarching theme (Sharma et al., 2020). Further, Table 2 depicts the variables identified across these sub-themes to present a collated synthesis of the studies concerned.

### AI-driven HRM

Individuals view HRM as an integrated whole rather than a compilation of separate components. AI-powered HR systems can transform routine and monotonous tasks into knowledge-driven processes. Employee onboarding, performance, and engagement are affected by an AI-driven human resources information system (HRIS), which facilitates performance monitoring, engagement tools, automated feedback, and training programs. Mediating elements such as employee happiness, skill development, and motivation, alongside moderators such as job position, work environment, and leadership, influence these interactions. Further sub-themes explore the specific functions.

### AI in recruitment & talent management

AI is revolutionizing the recruitment process by automating portfolio evaluation, conducting first interviews through chatbots, and utilizing algorithms to match individuals with job roles based on their skills and qualifications (Prikshat et al., 2025). This approach expedites the recruitment process while also reducing human biases. Additionally, human capital theory asserts that investing in suitable individuals can significantly impact organizational performance, and AI facilitates enhanced talent identification (Malik et al., 2022). Managers need to strategically utilize talent administration to rapidly and effectively

**Table 1**
Thematic analysis.

| Theme | Sub-Theme | Description | Relevant Studies |
|---|---|---|---|
| AI-driven HRM | AI in recruitment and talent management | The use of AI in recruiting processes, talent identification, and retention strategies. | (Hunkenschroer & Luetge, 2022; Mendy et al., 2024; Prikshat et al., 2025) |
| | AI-enhanced employee performance monitoring | How AI is utilized to monitor and enhance employee performance and productivity. | (Dash & Roy, 2020; Shankar & Kulkarni, 2024; Papananias et al., 2022; Li et al., 2022) |
| | AI for employee engagement and well-being | Exploring the role of AI in enhancing employee engagement and ensuring their well-being. | (Alabed et al., 2024; Aulia & Lin, 2025; Lee & Allen, 2025; García-Navarro et al., 2024) |
| AI in consumer and service management | AI-driven customer interaction | Applications of AI in improving customer interaction and engagement through chatbots, virtual assistants, etc. | (Kalaiyarasan et al., 2023; Al-Oraini, 2025; Castillo et al., 2021) |
| | Personalization of services with AI | Using AI to tailor services and products to individual customer preferences. | (Venkateswaran, 2023; Gao & Liu, 2023; Lim & Zhang, 2022; Mende et al., 2024; Volkmar et al., 2022) |
| | AI in service operations management | How AI optimizes service operations, improving efficiency and customer satisfaction. | (Alnsour et al., 2023; Braganza et al., 2022; Mariani & Borghi, 2024; Spring et al., 2022) |
| ML in management decision-making | Predictive analytics in decision-making | How ML enables predictive analytics to inform management decisions. | (Khan, 2024; Fan et al., 2023; Pereira et al., 2022; Pietronudo et al., 2022) |
| | Risk management with ML | Leveraging ML to assess and mitigate risks in management processes. | (Paltrinieri et al., 2019; Carmona et al., 2022; de Blasio et al., 2022; Ngai & Wu, 2022) |
| | Optimization of business processes | Using ML to optimize various business processes for better efficiency. | (Kulkov et al., 2024; Rodgers et al., 2023; Trocin et al., 2023; van Dun et al., 2023) |
| AI in strategic management and leadership | AI-driven strategic planning | Incorporating AI into strategic planning to forecast trends and guide business strategy. | (Spaniol & Rowland, 2023; Wilson & van der Velden, 2022; Biloslavo et al., 2024) |
| | AI in leadership decision support | How AI tools support leadership in making informed and timely decisions. | (Pereira et al., 2022; Rodgers et al., 2023; Romanov et al., 2023; Zhdanov et al., 2022) |
| | AI for competitive advantage | Using AI to gain a competitive advantage through strategic insights and data-driven decisions. | (Ameye et al., 2023; Behera et al., 2023; Krakowski et al., 2023; Climent et al., 2024) |
| AI in operational and supply chain management | Supply chain optimization with AI | AI applications in optimizing supply chain logistics and operations. | (Fosso Wamba et al., 2022; Kumar et al., 2025; Detwal et al., 2023; Qi et al., |

**Table 1** (*continued*)

| Theme | Sub-Theme | Description | Relevant Studies |
|---|---|---|---|
| | | | 2023; Singh et al., 2025) |
| | AI for operational efficiency | Enhancing operational efficiency through AI-driven process improvements. | (Alnsour et al., 2023; Calabrese et al., 2023; Zirar et al., 2023; Ali et al., 2024) |
| | AI in inventory management | The role of AI in automating and optimizing inventory management processes. | (Qaffas et al., 2023; Preil & Krapp, 2022; Albayrak Ünal et al., 2023; Praveen et al., 2019) |
| AI in enhancing customer experience | Personalized customer experiences | Using AI to create personalized customer journeys and experiences. | (Chen & Prentice, 2025; Liu-Thompkins et al., 2022; Rizomyliotis, 2022; Sheth et al., 2022) |
| | AI in customer feedback analysis | Leveraging AI to analyze customer feedback and improve service quality. | (Cao et al., 2020; Rožanec et al., 2023; Adak et al., 2022) |
| | AI for proactive customer support | How AI can anticipate customer needs and provide proactive support. | (Kalla, 2024; Noor et al., 2022; Rizomyliotis, 2022; Wang & Hou, 2025) |

capture their ideas and implement them in management practices, hence improving team performance and optimizing management value.

*AI-enhanced employee performance monitoring*

Along with locating suitable talent for organizations, AI tools can track the performance of existing employees. These tools analyze metrics such as work output, time management, and even employee engagement levels to provide insights into productivity, generating valuable knowledge for decision-makers (Papananias et al., 2022). For instance, Microsoft's workplace analytics uses AI to analyze communication patterns within organizations, helping managers understand collaboration trends and improve team productivity. The incursion of AI into the domain of performance management heralds a significant shift from a retrospective, ratings-focused approach to a more dynamic, developmental, and data-enriched strategy (Li et al., 2022).

*AI for employee engagement and well-being*

AI applications in HR aim to enhance employee loyalty and well-being. AI may be able to identify issues related to job satisfaction and provide interventions based on employee feedback analysis (Alabed et al., 2024). Elevated occupational expectations and inadequate resources predominantly induce stress by establishing a disparity between the effort expended by employees and the rewards they obtain. This discrepancy leads to discontent, increased stress, and challenges for mental health. The incidence of mental health issues in the workplace has increased, highlighting the necessity for effective interventions. The integration of AI-powered mental health applications offers the opportunity to tap into this gap and enhance support systems, especially for a diverse and multilingual workforce (Mende et al., 2024). With AI's capacity to analyze complex patterns of employee interaction and engagement, future performance management systems can be attuned to the well-being and satisfaction of the workforce.

*AI in consumer and service management*

AI enhances business–consumer connections through digital assistants and robot customer service solutions in the service industry (Castillo et al., 2021). These AI systems may handle routine inquiries,

**Table 2**
Variables across themes.

| Topic | Dependent variables | Independent variables | Mediating variables | Moderating variables | Control variables |
|---|---|---|---|---|---|
| **AI-driven HRM** | Employee productivity, Employee engagement levels, Job satisfaction, Task completion rates, Absenteeism, Turnover intentions | AI-driven performance monitoring, AI tools for engagement, Automated feedback systems, AI-based training programs | Employee satisfaction, Feedback frequency, Skill development, Motivation, Job involvement | Job role, Work environment, Organizational culture, Leadership style, Management support, Work-life balance | Employee age, Experience, Gender, Job tenure, Industry, Company size, Sector, Education level, Employment type |
| **AI in customer service management** | Customer satisfaction, Service quality, Customer retention, Customer loyalty, Net promoter score (NPS), Customer lifetime value (CLV), Response time | AI-driven customer interaction, AI-enabled personalization, Chatbots, Virtual assistants, AI-powered CRM systems, Data-driven marketing, Predictive analytics | Personalization of services, Customer engagement, Perceived value, Trust, Emotional connection | Customer demographics, Technology adoption, Digital literacy, Marketing strategies, User experience (UX), Cultural topics, Socioeconomic status | Industry type, Service complexity, Market competition, Product/service type, Marketing budget, Company reputation, Brand image |
| **ML in management decision-making** | Market share, Competitive positioning, Business growth, Profitability, Return on investment (ROI), Innovation index, Market penetration | AI-driven strategic planning, AI for competitive advantage, Market intelligence tools, Forecasting models, Scenario analysis, AI-enhanced decision-making | Organizational agility, Innovation capability, Strategic alignment, Knowledge management, Learning culture | Industry trends, Regulatory environment, Market dynamics, Technological advancements, Economic conditions, Political topics | Company size, Strategic focus, Financial resources, Market conditions, Organizational structure, Leadership style, Risk appetite |
| **AI in strategic management and leadership** | Recruitment efficiency, Talent retention, Time-to-hire, Quality of hire, Candidate experience, Employee onboarding success, Workforce diversity | AI-driven recruitment tools, AI for talent management, Applicant tracking systems (ATS), Predictive hiring models, AI-powered assessments, Automated screening | Candidate experience, Job fit, Employer branding, Perceived fairness, Organizational commitment | Industry requirements, Job market conditions, Company reputation, Economic conditions, Legal compliance, Technological integration | Organization size, HR practices, Employee turnover rates, Sector, Recruitment budget, Geographical location, Workforce size |
| **AI in operational and supply chain management** | Operational efficiency, Risk mitigation, Cost reduction, Process automation, Error rates, Production output, Lead time, Supply chain resilience | AI-driven process optimization, ML for risk Assessment, Predictive maintenance, AI-based inventory management, Automated workflow systems | Process automation, Risk awareness, Decision speed, Flexibility, Data accuracy | Operational complexity, Industry regulations, Economic conditions, Technological integration, Supply chain complexity, Market volatility | Production volume, Market demand, Company size, Operational structure, Resource availability, Workforce skills, Supplier relationships |

provide product recommendations, and enable technical support. For instance, Amazon's Alexa serves as an AI-driven assistant that interacts with consumers, providing product recommendations and overseeing tasks such as delivering reminders or managing smart home devices (Kalaiyarasan et al., 2023). AI tools such as chatbots and customer relationship management (CRM) systems enhance satisfaction, retention, and loyalty by leveraging personalization, engagement, and trust mechanisms. These effects are moderated by factors such as consumer demographics and user experience, while control variables like industry type and market competitiveness further influence the outcomes. Further sub-themes under this primary theme explore different dimensions.

*AI-driven customer interaction*

Generating a positive customer experience is a critical motive for every business organization. The integration of AI-driven technologies into client support offers a profound impact on corporate–client interactions (Mende et al., 2024). Extant literature analyzes the progression of AI, detailing its historical development and modern innovations, with a focus on significant achievements including ML, sentiment analysis, robotic process automation, and AI ethics (Al-Oraini, 2025). Voice identification, real-time translation of languages, and client input analysis have effectively integrated these technologies, providing thorough insights into customer demands and preferences. The integration of AI into client service has numerous opportunities for enhancement across the service industry.

*Personalization of services with AI*

The current cohort of consumers prefer tailored recommendations, and AI enables businesses to customize their products to meet these unique customer needs. AI may suggest products, customize marketing messaging, and provide personalized shopping experiences through the analysis of client data (Gao & Liu, 2023). To illustrate, Netflix's recommendation system uses AI to analyze watching trends and suggest content that aligns with individual preferences. Several organizations

have a common goal of tailoring every facet of their products and interactions with clients (e.g., marketing mix components and user experiences). While this target was primarily aspirational in the past, the last decade has seen significant advancements in the practical feasibility of real-time and large-scale customization (Volkmar et al., 2022).

*AI in service operations management*

AI improves service operations by forecasting demand, managing inventory, and scheduling personnel (Mariani & Borghi, 2024). These improvements yield heightened service efficiency and cost savings. As an example, Domino's pizza uses AI to predict peak ordering times, ensuring sufficient workforce and product availability to meet demand. Consumer involvement with mechanical AI has an unequal influence on operational service satisfaction; positive interactions with service robots significantly improve overall customer contentment, whereas negative interactions do not significantly diminish satisfaction levels (Spring et al., 2022).

*ML in management decision-making*

ML facilitates predictive analytics, empowering leaders to make educated choices by anticipating patterns, customer behaviors, and variations in the market (Fan et al., 2023). This predictive capability enables firms to maintain a competitive advantage. Target's predictive analytics enable the company to foresee client requirements—such as anticipating a customer's expectation of a baby—and tailor marketing strategies accordingly. The ongoing digitalization of the global economy has led to a heightened demand for specialists in ML and AI (Pereira et al., 2022), which results in a skills deficit, hence impeding the integration of ML methodologies in business analytics. Auto ML frameworks possess the capacity to mitigate the existing skills deficit and may also expedite the predictive analytics procedure. The sub-themes delve deeper into individual insights.

*Predictive analytics in decision-making*

ML is employed to enhance diverse commercial operations, including supply chain management and production (Khan, 2024). ML models can detect inefficiencies and propose enhancements through processing information analysis. For example, GE Digital's Predix platform employs ML to enhance the operation of industrial machinery, minimizing downtime and increasing efficiency. Business process reengineering (BPR) encourages the examination and reconfiguration of workflows to improve performance. ML enables this by delivering data-driven insights beforehand for process optimization (Pietronudo et al., 2022). The available knowledge empowers decision-makers to make alert decisions, making organizations agile.

*Risk management with ML*

ML models are employed to evaluate and alleviate risks by examining previous data and recognizing potential future threats (Carmona et al., 2022). This is especially advantageous in financial management, where risk prediction can avert substantial losses. JPMorgan Chase uses ML to identify fraudulent transactions and mitigate financial risks by analyzing transaction patterns and detecting anomalies. Historically, financial firms have utilized conventional linear, logit, and probit regression analyses to model credit risk (Ngai & Wu, 2022). There is a growing interest among institutions in employing AI and ML methodologies to improve credit risk management methods, partly due to the shortcomings identified in traditional techniques. Evidence suggests that utilizing AI and ML approaches can substantially enhance credit risk management capabilities due to their proficiency in semantically interpreting unstructured data. The extensively researched domains encompass fluctuation projections, credit assessment, bankruptcy prediction, and fraud detection (de Blasio et al., 2022). These tasks have extensively employed advanced machine-learning models, particularly deep-learning architectures. The availability of appropriate data is the most important factor. Despite the capability of ML packages for Python and R to efficiently read various data types from Excel to SQL, as well as perform natural language processing and image processing, the rapid development of ML solutions has not aligned with firms' capacity to effectively organize their internal data.

*Optimization of business processes*

The incorporation of ML techniques into company operations is fostering a transformative age of efficiency, personalization, and adaptability (Kulkov et al., 2024). As enterprises navigate the intricacies of the contemporary business landscape, the analytical capabilities of ML serve as a guiding force, illuminating the road to optimized operations and improved customer experiences (Trocin et al., 2023). The continual learning capability of ML algorithms ensures that automation adapts to the dynamic nature of business processes, contributing to sustainable efficiency gains. The integration of ML and customization enhances client experiences to unparalleled heights (Rodgers et al., 2023). Starting with e-commerce recommendations and progressing to personalized content delivery, ML algorithms optimize businesses to tailor their services to individual preferences, fostering deeper connections and loyalty.

*AI in strategic management and leadership*

The dynamic realm of strategic management highlights the significant promise and complex obstacles of incorporating AI-driven tactics into corporate operations (Wilson & van der Velden, 2022) coupled with ethical governance mechanisms. As top management embarks on this transformative path, the effective implementation of AI is not solely a technical endeavor but a complex undertaking that requires meticulous attention to lawful, societal, and technological factors (Spaniol & Rowland, 2023). The identified problems, including data privacy issues, algorithmic biases, and the changing regulatory environment, underscore the necessity for a diligent and flexible strategy. Maintaining a competitive advantage necessitates a commitment to knowledge creation, continuous upgrade, a willingness to adopt new technology, and a dedication to adhering to ethical standards that correspond with changing society's expectations.

*AI-driven strategic planning*

Strategic planning incorporates AI to assess market data, forecast future trends, and inform long-term business strategy (Biloslavo et al., 2024). This enables organizations to be nimbler and more responsive to market fluctuations. IBM's Watson assists organizations in strategy execution by examining extensive datasets to deliver facts about market trends and consumer behaviors. AI improves strategic planning by delivering practical insights from intricate datasets. AI-driven planning and market intelligence influence market share, profitability, and growth. Organizational agility and innovation mediate these impacts, whereas market dynamics and laws serve as moderators. Controlling variables such as firm size and financial resources guarantees a reliable study.

*AI in leadership decision support*

AI solutions assist leadership in making educated and timely decisions through data analysis, simulation provision, and scenario-based advice. Enhanced decision-making platforms such as Qlik furnish leaders with visualizations of data and statistical analysis to facilitate decision-making processes (Pereira et al., 2022). AI technologies and methodologies continue to undergo swift updates. Managers should persist in learning and adopting new AI tools to utilize the latest technology for team management and strategic direction setting (Romanov et al., 2023).

*AI for competitive advantage*

Employing AI helps to make smarter strategic decisions, increase productivity, and develop capabilities more quickly than rivals, giving businesses a competitive edge (Krakowski et al., 2023). Google's AI initiatives, encompassing search engines and AI-enhanced advertising, have conferred a competitive advantage in the digital economy. To enhance competitiveness with AI, business leaders must assess the organization's preparedness for the technology (Ameye et al., 2023). This necessitates securing executive endorsement, discerning the organizational requirements for AI, assessing data and skill set availability, evaluating modeling proficiency and risk tolerance, and determining infrastructure preparedness (Climent et al., 2024). A three-phase strategy is advised for implementing AI without fundamentally restructuring the organization. The initial introductory phase encompasses promoting the competitive benefits of AI, assessing commercial potential, investing in minimal infrastructure, educating key stakeholders, and initiating pilot proof-of-concept projects. The second phase, applying AI, encompasses the following steps: formulating the application strategy, pinpointing AI-related business challenges, assigning requisite resources, addressing multiple identified issues, and assessing the outcomes. The third step, leveraging AI, illustrates the maturity level and business prospects for sustainable value creation by applying AI across several business sectors.

*AI in operational and supply chain management*

AI is revolutionizing supply chain management by improving logistical efficiency, minimizing waste, and refining demand forecasting accuracy. This results in enhanced operational efficiency and cost reductions (Fosso Wamba et al., 2022). For instance, Amazon employs AI to enhance its supply chain, encompassing warehouse management and delivery routes, ensuring prompt and effective product delivery. Just-in-time (JIT) prioritizes efficiency and responsiveness. AI helps achieve these objectives by improving supply chain procedures. AI in supply chain optimization provides avenues for improving efficiency and robustness in supply chain operations (Qi et al., 2023). Moreover,

smart manufacturing has become a tangible reality. Nonetheless, numerous modifications are necessary to fully harness the advantages of AI; moreover, these changes will necessitate that many organizations, particularly in retail and manufacturing, adopt new tactics such as redesigning plant layouts, restructuring their industrial footprints, and developing innovative supply chain models.

*Supply chain optimization with AI*

By utilizing AI methodologies, including ML, evolutionary methods, training by repetition, and ensemble learning, enterprises may create sophisticated optimization solutions that tackle the intricacies and ambiguities of contemporary supply chains (Singh et al., 2025). AI-driven optimization methods facilitate demand forecasting, inventory management, production scheduling, and logistics planning, empowering organizations to make data-informed decisions, enhance operational efficiency, and respond to evolving market dynamics (Detwal et al., 2023). Utilizing all of AI's potential in supply chain optimization requires overcoming some challenges such as poor data quality, integration issues, and a lack of skilled workers. By adopting hybrid methodologies, improving data quality and integration, promoting cooperation and information exchange, and committing to talent development, enterprises may surmount these difficulties and harness the revolutionary potential of AI in supply chain management (Fosso Wamba et al., 2022). As AI technologies advance, firms that strategically utilize AI for supply chain optimization can attain a competitive advantage by expanding efficiency, minimizing costs, improving agility, and bolstering resilience in their supply chain operations.

*AI for operational efficiency*

AI-powered operations enhance productivity by automating repetitive jobs, streamlining production processes, and minimizing downtime (Zirar et al., 2023). This is especially advantageous in both production and distribution. To illustrate, Siemens employs AI to oversee and enhance its manufacturing processes, leading to increased efficiency and diminished operational costs (Calabrese et al., 2023). AI may enhance operational efficiency by streamlining industrial processes, supply chain logistics, and inventory management. AI systems may oversee inventory in real time, detect supply chain delays, and strategize production according to projected demand (Alnsour et al., 2023). The use of AI in this organizational shift can improve efficiency, reduce operating expenses, and generate more value for customers.

*AI in inventory management*

AI is employed to optimize inventory management, minimizing stockouts and surplus inventories (Qaffas et al., 2023). This is accomplished through predictive analytics, which anticipates demand and enhances inventory levels. Walmart uses AI to forecast inventory requirements and automate restocking, ensuring product availability while avoiding excess inventory (Preil & Krapp, 2022). The incorporation of AI in the management of stocks has become a revolutionary element, altering the dynamics of supply chain operations. AI technologies have markedly advanced inventory management procedures, resulting in increased productivity and expedited decision-making skills. These innovations result in cost reduction and sustained client satisfaction. The significance of AI in enhancing supply chain planning tasks, including demand forecasting, customer order viability assessments, and supply chain network architecture, is particularly remarkable (Albayrak Ünal et al., 2023).

*AI in enhancing customer experience*

In response to the escalating needs of digitally savvy consumers and to counteract intense competition, marketers have begun to allocate their resources toward the integration of technology and analytics to deliver a superior customer experience (Chen & Prentice, 2025). AI-driven marketing initiatives transform the dynamics of client engagement. The implementation of AI guarantees robotic and efficient service delivery; nonetheless, an exceptional customer experience necessitates human interaction to enhance empathy and the personalization of services provided (Liu-Thompkins et al., 2022). Therefore, service providers need to utilize the fundamental elements of the client experience as the foundation for developing novel strategies and digital avenues, encompassing reliability, problem-solving capabilities, alignment with consumer expectations, and enhanced efficiency (Sheth et al., 2022).

*Personalized customer experience*

AI enables enterprises to enhance customer experiences through the analysis of individual consumer data and the subsequent adaptation of interactions (Sheth et al., 2022). This enhances client satisfaction and loyalty. Spotify's recommendation system uses AI to evaluate users' listening patterns and provide customized playlists, hence improving user engagement and pleasure. Consumers require marketers to enhance client expectations by providing automated, round-the-clock, convenient, highly tailored, and uninterrupted services (Chen & Prentice, 2025). Web-based client services that provide enhanced tailored convenience are becoming crucial. The integration of breakthrough technology, strategic insights, and moral principles is propelling enterprises toward a future characterized by increased efficiency, unparalleled personalization, and enhanced customer engagement in the dynamic customer relationship management landscape (Rizomyliotis, 2022).

*AI in customer feedback analysis*

Businesses are increasingly using AI tools to assess client feedback from a variety of channels, including social media, surveys, and reviews (Rožanec et al., 2023). Firms can quickly resolve concerns and improve service quality by understanding client attitudes. Salesforce's Einstein AI evaluates customer data to discern prevalent grievances and opportunities for enhancement, enabling businesses to react proactively. Customer happiness is a critical determinant in all industries, particularly in supermarkets, as dissatisfied customers will seek alternative shopping venues (Cao et al., 2020). Supermarkets utilize customer feedback channels (CFCs) to assess customer expectations and gather complaints and ideas. An AI-augmented system may enable customers to submit comments via a digital screen equipped with speech recognition, typing, and loyalty card scanning functionalities, situated within the supermarket (Rožanec et al., 2023). A cloud server will store these comments, along with input from additional internet sources, and categorize them accordingly. The adoption of statistical analysis, AI, and ML catalyzes transformation, enabling firms to proactively address consumer needs, enhance operational efficiency, and forge enduring partnerships (Chatterjee et al., 2024).

*AI for proactive customer support*

AI-driven systems can anticipate client requirements and assist before the emergence of problems (Kalla, 2024). This proactive strategy in customer service can enhance satisfaction and alleviate the workload on customer support staff. Zendesk's AI-powered customer support platform predicts client requirements from previous interactions and offers solutions proactively, even before the customer's need for assistance. Chatbots are an effective tool for large-scale consumer engagement and comprehension. Organizations may modify a chatbot's language usage to enhance its personalization (Rizomyliotis, 2022). Human-like chatbots improve customer satisfaction and trust, leading to greater chatbot adoption. Companies may balance the protection of consumers' personal information with disclosure in exchange for an incentive. Although chatbots have been in use for years, their widespread use now marks a significant shift (Noor et al., 2022). As human dependence on computer-assisted systems increases, researchers are focusing on more efficient technologies that can replicate human interactions while comprehending human languages, emotions, and sentiments. The phenomenon of information overload has led to an increase

in unstructured text, which is deemed ineffective across various areas, including banking, healthcare, and education (Wang & Hou, 2025).

**Discussion**

The discussion section integrates the major ideas gleaned from the examined literature, going beyond a simple overview to critically incorporate data from many studies. This section assesses the overall evidence related to the research goals and the primary theories by identifying key similarities and differences (Fredström et al., 2022). In doing so, it identifies substantial knowledge gaps and assesses the consequences of these results for management theory and practice from a global standpoint. The incorporation of AI and ML into managerial practices has evolved from a niche technology experiment to a pervasive strategic need. This review discovers compelling evidence for AI's role as a revolutionary capability that alters the nature of organizational decision-making, operational design, and stakeholder involvement across several domains. When seen from the dual perspectives of strategies and capabilities, AI is more than just a technological tool; it is a source of long-term competitive advantage through data-driven adaptation and responsiveness (Kaggwa et al., 2024). While previous research has focused on improving management cognition and strategic foresight using AI-driven analytics and decision-support tools, this synthesis demonstrates a more systemic and cross-functional application of AI. Its value is increasingly found in integration across several organizational areas, including HR, customer service, operations, and strategic leadership, rather than in standalone, task-specific applications. Considering this, the following research focuses on five fundamental categories where AI and ML are delivering demonstrated value in modern management practice: HRM, customer and service engagement, decision-making, strategic leadership, and operational efficiency. These techniques eventually ensure a comprehensive grasp of the current state of research while proposing opportunities for future inquiry and practical application that are consistent with strong scholarly standards.

*Theoretical implications*

Our results have several theoretical implications. First, the RBV asserts that lasting competitive advantage arises from distinctive, valued, and unique organizational resources (Li et al., 2023). Second, our findings indicate that the incorporation of AI in areas such as HRM, consumer and service management, ML for decision-making, strategic leadership, operations, and customer experience is redefining the nature of strategic resources in modern organizations (Zamani et al., 2023).

Third, the conventional RBV highlights tangible and intangible assets; nonetheless, the examined studies consistently recognize data, algorithms, and digital capabilities as essential new resource categories (van Dun et al., 2023). Also, in AI-driven HRM, the ability to utilize ML for talent analytics and workforce optimization is regarded as a fundamental capability that augments the organization's potential to generate value and maintain competitive advantage (Yuan et al., 2022). Furthermore, consumer and service management, AI-driven personalization, and predictive analytics are transforming customer data into a strategic asset, reinforcing RBV's claim that distinctive resources are fundamental to distinction and performance (Sharma et al., 2024).

Still, the synthesis also reveals major inconsistencies and information gaps. While many researchers celebrate AI's ability to produce original resources, others draw attention to difficulties with resource imitation and distribution (Hunkenschroer & Luetge, 2022). A fundamental principle of RBV is that the fast commoditization of AI technology and the growing availability of ML techniques create problems for the longevity of competitive advantage (Shen, 2022). The research exposes a knowledge vacuum on how companies could keep renewing and safeguarding their AI-powered assets in dynamic settings. The study indicates that we need a broader RBV framework that includes dynamic capabilities for constantly adjusting and protecting resources, not just

for acquiring them (Ponta et al., 2022).

In fields such as strategic management and leadership, the ability to include AI in organizational routines and decision-making processes is becoming increasingly important (Zauro et al., 2020). The RBV must adapt to fit the digitization of resources and the flux of competitive advantage in the AI era, and this review significantly advances the theoretical debate (Sharma et al., 2024). The results imply that future studies should concentrate on the processes by which companies create, preserve, and renew AI-driven resources as well as on the interaction between technical and non-technical assets. Dealing with these shortcomings improves RBV and offers practical insights to managers looking to maximize AI for ongoing strategic advantage (Venkataramanan et al., 2024).

*Practical or managerial implications*

In this study, we consolidated empirical information about the interconnections among AI, innovative product creation, sustainable competitive advantage, and sustainable business models. Our findings about the thematic evolution and variable modeling across the domains of AI-driven HRM, AI in consumer and service management, ML in management decision-making, strategic management and leadership, operational and supply chain management, and improving customer experience are summarized in this review, which is based on a thorough analysis of 1,377 papers (Kalla, 2024; Mailani et al., 2024; Usman et al., 2024). We integrate insights, identify significant patterns and contradictions, and interpret their practical significance through the RBV lens to derive thematic findings (Hossain et al., 2022).

Incorporating AI in HRM and consumer services demonstrates a distinct trend toward utilizing data-driven insights for talent recruiting, employee engagement, and tailored customer experiences (Chen et al., 2022). The RBV framework emphasizes that organizations proficient in leveraging AI as a strategic asset can achieve a distinction that is difficult for competitors to imitate (Lupp, 2022). The assessment reveals a knowledge gap concerning the alignment of AI capabilities with current human capital and organizational culture, indicating that the usefulness of AI depends on complementary resources like trained staff and adaptive leadership (Faqihi & Miah, 2023).

Furthermore, in the domain of management decision-making and strategic leadership, ML applications are increasingly used to make intricate decisions, enhance resource allocation, and predict market fluctuations (Faqihi & Miah, 2023). The results demonstrate that, although AI-driven decision support systems can improve managerial efficacy, their influence is contingent upon the organization's capacity to integrate new technologies into existing workflows and decision-making framework (Morosan & Dursun-Cengizci, 2023). This finding is a contradiction: the simple implementation of AI tools does not ensure enhanced performance. Sustainable advantage relies on the distinctive integration and orchestration of AI inside the firm's resource base, as underscored by the RBV (Liu et al., 2022).

Operational and supply chain management have experienced substantial advancements due to AI-driven process automation, demand forecasting, and risk management (He et al., 2023). The analysis highlights a significant trend: companies that regard AI as a fundamental organizational competency rather than a mere technology are better positioned to attain operational excellence and agility. However, studies show that there are still ongoing problems with managing change and getting the workforce ready, which suggests that there must be ongoing investment in training and integrating systems to fully take advantage of AI as a key resource (Avrahami et al., 2022).

The improved customer experience via AI-driven personalization and service automation shows significant potential for value generation (Ge & Zhao, 2022). The synthesis indicates that the success of these initiatives is largely contingent upon the firm's capacity to reconcile technological innovation with ethical issues and customer trust. This finding aligns with the RBV, which suggests that non-physical assets,

such as reputation and relationships, are crucial for staying competitive in AI-driven environments (Sharma et al., 2024).

This assessment offers a pragmatic managerial insight that organizations ought to regard AI not as an isolated solution but as a resource that must be meticulously integrated with existing capabilities, informed by the principles of the RBV (Kalla, 2024). Managers must concentrate on cultivating complementary assets, promoting an innovative culture, and mitigating knowledge deficiencies in change management to convert AI investments into an enduring competitive advantage (Krakowski et al., 2023).

## Conclusions

This review research highlights the transformative role of AI in shaping sustainable business models and management practices. Far beyond enhancing efficiency, AI technologies such as ML, predictive analytics, and natural language processing are reconfiguring decision-making, customer interaction, and strategic agility. Our analysis consolidates dispersed literature, develops an integrative framework, and identifies critical directions for research and policy.

While AI offers data-driven insights and new forms of organizational intelligence, its adoption also raises ethical challenges related to bias, transparency, and workforce displacement. Responsible AI strategies will require robust governance frameworks, workforce upskilling, and multi-stakeholder collaboration to ensure that technological advances contribute positively to organizations and society.

### Future research directions

The incorporation of AI into management is transforming corporate practices by enhancing decision-making, boosting operational efficiency, and optimizing processes across various departments. AI technologies such as ML and natural language processing have revolutionized fields like HR and finance, facilitating recruiting, talent management, fraud detection, and risk assessment. In this section, we have discussed a comprehensive future research agenda for exploring the role of AI in various areas of business management, outlined with specific objectives, potential research questions, and suggested methodologies.

### AI in employee performance and engagement

The influence of AI on long-term engagement and well-being remains underexplored, especially in contexts where surveillance-oriented AI tools may induce stress or reduce autonomy (Ma & Ye, 2022). As organizations move toward intelligent performance systems, longitudinal research is essential to unravel the nuanced interplay between AI implementation and employee motivation, psychological safety, and job satisfaction.

### AI-driven customer interaction and service personalization

Research integrating experimental designs and sentiment analysis through natural language processing can illuminate customer perceptions of AI-led personalization vis-à-vis human interaction. Such inquiries are vital to discerning the thresholds of automation acceptability and the contingencies that moderate AI's influence on loyalty, satisfaction, and long-term customer value (Gao et al., 2023).

### Strategic planning and competitive advantage

The strategic deployment of AI is not merely a technological undertaking but a deeply complex organizational challenge involving leadership commitment, data infrastructure, and cultural alignment (Sun et al., 2022). While early adopters have demonstrated gains in innovation and market responsiveness, the ROI of AI remains difficult to quantify given its embeddedness in broader strategic processes (Krishnan & Prabhu, 2012). Empirical case studies, expert Delphi panels, and pre- and post-AI financial analyses are essential to unpack

how firms can translate AI capabilities into sustainable competitive advantage, emphasizing the need for dynamic capability frameworks in strategic AI adoption (Kambhampati, 1995).

### AI in recruitment and talent management

The algorithmic opacity of AI raises significant ethical concerns, particularly regarding fairness, bias, and accountability (Shen, 2022). Using different research methods, including real-world tests, ethical guidelines (like deontological and utilitarian views), and statistical studies on diversity measures, can help determine if AI supports or fights against existing inequalities in hiring processes (Faqihi & Miah, 2023).

### Operational efficiency and risk management

The success of AI in operations is contingent on industry-specific variables, risk culture, and the integration of human oversight. Scenario analysis, sectoral benchmarking, and qualitative case studies on AI-induced failures are important for establishing a holistic understanding of both the performance potential and the latent risks inherent in operational AI (Bonetti et al., 2023). Future research may explore how AI-driven solutions, including performance monitoring systems and AI-based training programs, could enhance long-term employee productivity, engagement, work satisfaction, and overall task efficiency. Researchers need to investigate how AI can help develop more efficient and sustainable business models aligned with the UN SDGs.

In terms of customer interaction and service personalization, research may focus on how AI enhances customer experiences through personalized interactions, utilizing tools such as AI-driven CRM systems, chatbots, and predictive analytics. This will help assess AI's impact on customer satisfaction, loyalty, and retention, as well as clarify customer perceptions of AI versus human interaction in service delivery. The research into strategic planning and competitive advantage may analyze AI's role in enhancing a firm's market positioning, growth, and profitability. Case studies of companies that have effectively integrated AI into their decision-making processes can provide valuable insights into the ROI from AI-driven projects and the agility, innovation, and market intelligence acquired through AI. In recruiting and talent management, research may examine how AI-driven recruiting tools and predictive hiring models can enhance recruitment processes, decrease time-to-hire, and improve applicant quality while promoting diversity and inclusion. Evaluating the ethical implications of AI in recruitment and how it can be used to promote fairness and diversity will be crucial. Operational efficiency and risk management research may investigate how AI-driven process optimization, ML for risk evaluation, and predictive maintenance can improve organizational operations and mitigate risks. This includes evaluating AI's effectiveness across different industries and simulating AI's impact on risk management, particularly during crises, to identify potential risks and develop strategies to mitigate them.

### Future policy directions

Future research policy on AI in management should prioritize the development of ethical frameworks to ensure transparency, accountability, and bias mitigation in AI systems.

### AI ethics and governance

The need to set up ethical control systems has become crucial as AI systems become increasingly integrated into how managers make decisions (Fassin & Drover, 2017). The ethical application of AI necessitates more than just algorithmic openness; it necessitates a strong organizational structure that predicts moral quandaries, mitigates harms, and promotes fairness. Creating detailed AI ethical rules, mandating ethics training, and establishing internal oversight committees are critical foundations for responsible AI use (Stahl et al., 2023).

### AI for workforce management

While AI can improve recruiting, performance evaluation, and job

allocation, it also has the potential to entrench bias, increase surveillance, and undermine procedural fairness (Farrow, 2022). To protect worker interests, AI systems must be transparent by explaining their logic and allowing for contestability. Regulatory interventions must ensure that algorithmic conclusions comply with legal and ethical standards, especially those related to discrimination and data usage (Chowdhury et al., 2023). Notably, promoting AI literacy and inclusive tools is vital for guaranteeing that workers are empowered users and collaborators rather than passive subjects of AI systems. This policy area emphasizes the twin responsibilities of promoting technological innovation while also instilling a human-centered attitude in AI-driven workforce design (Mohsen et al., 2023).

### AI and consumer protection

While AI allows for personalized services, faster response times, and dynamic product recommendations, it also raises questions about consent, manipulation, and opaque decision-making (Kunz & Wirtz, 2023). Maintaining openness in AI interactions with customers is essential for restoring customer trust in online stores, primarily by providing clear information and facilitating easy-to-understand conversations. Additionally, strict consumer data protection and ethical standards in AI-enabled marketing are necessary to prevent exploitative or discriminatory activities. Consumer data protection and ethical standards in AI-enabled marketing are required to prevent exploitative or discriminatory activities (Cloarec, 2022).

### Data privacy and security

The risks associated with data breaches, unauthorized surveillance, and adversarial attacks necessitate the strict enforcement of data protection legislation that is tailored to AI contexts (Zheng et al., 2023). Regular audits and resilience testing of AI systems are critical for ensuring compliance and strengthening trust of AI systems (Querci et al., 2022). Similarly, encouraging the development of secure, privacy-preserving AI systems, such as federated learning and differential privacy, can help resolve vulnerabilities before they become critical (Song et al., 2022). Penalties for violations must be proportionate and deterrent to promote responsible innovation. This policy domain reflects the larger difficulty of ensuring that the benefits of AI do not come at the expense of fundamental rights, and that it advocates for security-by-design principles in AI governance (Pocher et al., 2023).

### AI and market competition

Large corporations with stronger data assets and computing capacity run the risk of monopolizing AI skills, marginalizing smaller players, and distorting market fairness (Krishnan & Prabhu, 2012). To address this, regulatory frameworks must monitor and support AI-driven pricing, recommendation, and acquisition efforts for anti-competitive behavior (Kambhampati, 1995). Equal access to AI infrastructure and targeted support for SMEs is critical for democratizing the benefits of AI and maintaining entrepreneurial dynamism. This issue highlights the contradiction of AI in market economies: while technology might boost productivity and innovation, it also has the potential to entrench incumbents and consolidate power. Policy must thus strike a balance between promoting innovation and safeguarding competitive plurality (Kambhampati & Parikh, 2003).

### AI transparency and accountability

The opaque nature of many AI models—often referred to as black boxes—can obfuscate culpability and impede redress in the event of harm or error (Chowdhury et al., 2023). Mandating explainability, especially in high-stakes applications like healthcare, finance, and criminal justice, is important for aligning AI with the democratic values of due process and accountability. Legal instruments should formalize responsibility for AI choices to prevent the distribution of accountability across technology players and institutional boundaries (Joung & Kim, 2023). Public reporting on AI performance can increase visibility and build public confidence. This policy field pushes for institutional measures that ensure AI systems are not just technically strong but also socially accountable (Chen et al., 2023).

### AI education and training

A comprehensive investment in AI education and training is required to fully realize AI's transformational potential over time (Ko et al., 2023). Equipping the existing and future workforce with fundamental AI knowledge enables not only employment but also informed participation in determining AI's societal trajectory. Integrating AI literacy into formal school curricula can promote early familiarity, but vocational and lifelong learning programs allow workers to adapt to changing skill requirements (Kataev et al., 2022). Public–private collaborations can help to bridge the gap between theoretical understanding and applied competencies, ensuring that education is relevant to industrial needs. This subject emphasizes capacity-building as a key policy instrument, not just to close labor market disparities but also to democratize technical agency and promote an inclusive digital transition (Xue et al., 2022).

Consumer protection aims to uphold consumer rights through the implementation of legislation that provides transparency in AI interactions, clear information regarding AI usage, data protection, and ethical advertising standards. Data privacy and security underscores rigorous data protection legislation, frequent audits, safe AI system development, and sanctions for data breaches. To promote equitable competition, the AI and market competition sector advocates for the oversight of AI plans, guaranteeing universal access to technology for all enterprises, assisting SMEs, and curbing monopolistic practices. AI transparency and accountability aims to improve clarity in decision-making by mandating the disclosure of AI methodologies, ensuring explainability in essential applications, establishing legal criteria for accountability, and necessitating public reporting on AI efficacy. Ultimately, AI education and training seeks to enhance AI literacy across the workforce using curriculum integration, government-sponsored training programs, lifelong learning initiatives, and collaborations between industry and educational institutions. Collectively, these rules establish a comprehensive framework for addressing the difficulties and possibilities posed by AI in management.

### Limitations of the study

This study advances understanding of AI in management but is subject to a few limitations. The rapid evolution of AI technologies challenges the generalizability of findings over time and across contexts. Data access constraints and uneven sectoral coverage may also restrict the scope of analysis. Nevertheless, our review of 1,377 papers provides a strong foundation for future inquiry. Further research could investigate human–AI collaboration in creativity and knowledge sharing, explore the impact of generative AI on value creation, and assess how organizations can cultivate critical thinking and evaluative skills to manage AI-generated outputs. These limitations highlight the need for sustained scholarly engagement with the fast-changing AI landscape.

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## CRediT authorship contribution statement

**Khushboo Raina:** Software, Resources, Methodology, Investigation, Formal analysis, Data curation. **Gagan Deep Sharma:** Writing – review & editing, Visualization, Validation, Supervision, Project administration, Conceptualization. **Babak Taheri:** Writing – review & editing, Visualization, Supervision, Conceptualization. **Dhairya Dev:** Software, Resources, Methodology, Investigation, Formal analysis, Data curation. **Shubham Chavriya:** Resources, Methodology, Investigation, Formal

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## Declaration of competing interest

No.

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