

The Role of Artificial Intelligence and Information Systems in Enhancing Operational Efficiency and Customer Retention in Businesses

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ABSTRACT

Artificial Intelligence (AI) and Information Systems (IS) have become increasingly important in helping businesses improve their operations and strengthen relationships with customers. As organizations continue to adopt digital technologies, AI is no longer limited to technology-based companies but is also being used by businesses across various industries to improve efficiency, support decision-making, and enhance customer experiences. This study examines the role of AI and Information Systems in improving operational efficiency and customer retention while exploring their contribution to business growth and competitive advantage.

The research is based on a review of existing literature from academic journals, industry reports, and credible business publications. The findings indicate that AI technologies, including chatbots, predictive analytics, recommendation systems, and process automation, help businesses streamline operations, reduce costs, and make informed decisions. The review also shows that AI enhances customer retention by enabling personalized services, improving customer engagement, and increasing customer satisfaction and loyalty. Furthermore, Information Systems provide the infrastructure required to manage and analyze business data, allowing organizations to implement AI effectively.

The study also identifies a research gap in the limited attention given to the role of AI and Information Systems in businesses whose primary operations are not technology-based. It highlights that these technologies can provide significant value across traditional industries by improving productivity, supporting innovation, and creating competitive differentiation. Despite the benefits, the review acknowledges challenges such as implementation costs, ethical concerns, data privacy, and the need for skilled employees.

Overall, the study concludes that AI and Information Systems are essential drivers of digital transformation and sustainable business success. The findings provide useful insights for businesses, managers, and researchers by demonstrating how the effective adoption of AI can improve organizational performance, strengthen customer relationships, and help businesses remain competitive in an increasingly digital business environment.

Keywords: Artificial Intelligence (AI); Information Systems (IS); Operational Efficiency; Customer Retention; Digital Transformation; Competitive Advantage; Business Performance; Customer Experience.

INTRODUCTION

Over the past decade, researchers have increasingly examined the factors influencing the use of Artificial Intelligence (AI) and Information Technology (IT) in various fields of business, as these technologies have become essential for organizations of all sizes. From small-scale enterprises to multinational corporations, the use of technology has transformed the way businesses operate by making processes simpler, faster, and more efficient. AI and IT provide organizations with the tools needed to enhance operational performance, improve productivity, and deliver better customer experiences in highly competitive markets. Businesses today rely heavily on technological systems to streamline communication, manage resources, and gain a competitive advantage in the digital economy.

Artificial Intelligence plays a significant role in analyzing large volumes of data, automating decision-making processes, and delivering personalized customer experiences. Through technologies such as machine learning, predictive analytics, and natural language processing, businesses can identify customer preferences, predict future trends, and make informed strategic decisions. AI-powered systems also help organizations automate repetitive tasks, reducing the need for manual intervention and minimizing human error. This not only improves efficiency but also allows employees to focus on more complex and creative responsibilities. In addition, AI applications such as chatbots, recommendation systems, and sentiment analysis enable businesses to maintain continuous interaction with customers and build stronger relationships with them.

Similarly, Information Systems (IS) help organizations maintain and process data in an organized and systematic manner. Systems such as Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) platforms support businesses in managing their daily operations, financial records, supply chains, and customer information effectively. These systems improve coordination among departments, enhance communication, and provide real-time access to accurate information. As a result, businesses can make faster and more effective decisions while also reducing operational costs through automation and optimized resource management.

The significance of studying AI and IT in business lies in their ability to transform organizational performance and customer engagement. Across industries such as retail, healthcare, banking, education, and manufacturing, companies are increasingly adopting advanced technologies to improve efficiency, accuracy, and innovation. AI and IT not only contribute to cost reduction and productivity enhancement but also support businesses in adapting to changing market demands and customer expectations. Understanding how these technologies influence organizational success is therefore essential for both researchers and business professionals.

Furthermore, customer retention has become more valuable than constant customer acquisition, making customer experience management a critical business priority. Retaining existing customers is often more cost-effective than attracting new ones, and loyal customers contribute significantly to long-term profitability. AI-driven tools help businesses better understand customer behavior, preferences, and purchasing patterns by analyzing customer data in real time. This enables companies to create personalized marketing strategies, targeted recommendations, and customized services for different customer segments. By enhancing customer satisfaction and engagement, businesses can strengthen customer loyalty and improve retention rates. Therefore, the integration of AI and IT not only improves operational efficiency but also plays a crucial role in building long-term customer relationships and ensuring sustainable business growth.

The existing literature confirms that the use of Artificial Intelligence (AI) and Information Technology (IT) significantly enhances business operations and customer experience. For example, Huang and Rust (2021) found that AI technologies, particularly machine learning and automation, improve service quality and operational efficiency by reducing human effort and enabling faster decision-making. Their study also highlights that AI enhances customer interactions through intelligent systems such as chatbots and automated support services.

Similarly, Davenport, Guha, Grewal, and Bressgott (2020) examined the role of AI in marketing and concluded that AI-driven personalization and customer analytics improve customer engagement and retention. Businesses using AI-based insights can deliver more personalized experiences, leading to stronger customer loyalty and satisfaction.

Further studies also support the positive impact of AI and IT on organizational performance. Brynjolfsson and McAfee (2017) argued that digital technologies improve organizational competitiveness through automation, innovation, and data-driven decision-making. Likewise, Chatterjee et al. (2021) found that AI adoption enhances organizational agility and customer responsiveness, particularly in industries such as banking, healthcare, and retail.

In addition, the review on AI in MIS performance (2024) suggests that the effectiveness of AI systems depends not only on technology but also on factors such as data quality, system integration, organizational support, and employee readiness. High-quality data and proper system integration improve decision-making and operational

performance, while leadership support and employee training encourage successful AI adoption. Overall, the literature indicates that AI and IT can significantly improve operational efficiency and customer experience when supported by effective organizational and technological practices.

Most research casts AI/IT as a transformational, organization-wide foundation—typical of digitally native or heavily automated firms—leaving a substantial gap in understanding AI/IT as a supporting, incremental capability in traditional firms. There is limited conceptual clarity and typology for “supporting” versus “core” roles, little empirical evidence on how legacy firms select, govern, and scale piecemeal tools, and weak knowledge of the organizational capabilities, change-management practices, and governance structures that enable effective augmentative use without full restructuring.

Existing studies also rarely measure the performance mechanisms (efficiency gains, decision quality, customer retention), long-term persistence or negative externalities, or the contextual moderators (industry regulation, firm size, customer mix) that determine when supporting AI is preferable to wholesale transformation. Addressing these issues requires mixed-methods, multi-level research that links tool-level technical properties and adoption processes to firm-level outcomes, yielding both refined theory and practical guidance for managers in legacy firms.

The aim of this study is to examine the role of Artificial Intelligence (AI) and Information Systems (IS) in enhancing operational efficiency and customer retention in businesses. The study seeks to analyze how AI-driven technologies and information systems improve business processes, decision-making, service quality, and customer relationship management, ultimately contributing to organizational performance and long-term customer loyalty.

This study focuses on the application of Artificial Intelligence (AI) and Information Systems (IS) in improving operational efficiency and customer retention within business organizations. The research covers industries such as retail, banking, healthcare, e-commerce, and service sectors where AI and digital information systems are widely adopted. The study examines the impact of AI-based tools, automation, customer relationship management systems, and data analytics on business operations and customer-related outcomes. It also explores organizational and technological factors that influence the successful implementation and effectiveness of AI and IS in businesses.

METHODOLOGY

This study adopts a qualitative narrative literature review approach to examine the role of Artificial Intelligence (AI) and Information Systems (IS) in enhancing operational efficiency and customer retention in businesses. The research is based on secondary data collected from peer-reviewed journal articles and academic databases such as Google Scholar and ScienceDirect, using keywords like “AI in business,” “operational efficiency,” and “customer retention.” Only relevant studies published between 2015 and 2026 in English were included, while non-academic and outdated sources were excluded to maintain reliability. The collected literature was analyzed using thematic analysis to identify key patterns, trends, and relationships related to AI and IS applications in business contexts.

LITERATURE REVIEW

This literature review explores the role of Artificial Intelligence (AI) and Information Systems (IS) in enhancing operational efficiency and customer retention in businesses. As organizations operate in increasingly competitive and technology-driven environments, AI and Information Systems have emerged as critical tools for improving business performance, streamlining operations, and strengthening customer relationships. The purpose of this review is to examine existing literature on the adoption and application of AI and IS and to assess their contribution to organizational effectiveness and customer loyalty.

Definition of Artificial Intelligence (AI)

Artificial Intelligence (AI) refers to the capability of computer systems to perform tasks that normally require

human intelligence, including learning, reasoning, problem-solving, decision-making, and understanding language. In a business context, AI enables organizations to analyze large volumes of data, automate routine operations, improve decision-making accuracy, and deliver personalized customer experiences. According to Russell and Norvig (2021), AI involves the development of intelligent agents that can perceive their environment and take actions to achieve specific objectives. Similarly, Kaplan and Haenlein (2019) define AI as a system's ability to interpret external data, learn from it, and use that knowledge to achieve goals through flexible adaptation.

For businesses, AI is more than a technological innovation; it is a strategic asset that helps organizations increase productivity, reduce operational costs, improve customer satisfaction, and gain a competitive advantage in rapidly changing markets.

Machine Learning

In business operations, machine learning is widely applied in demand forecasting, inventory management, fraud detection, customer segmentation, and predictive maintenance. For example, retail companies use ML algorithms to predict customer purchasing behavior, while financial institutions employ ML to detect fraudulent transactions and assess credit risks. Jordan and Mitchell (2015) argue that machine learning has become a fundamental tool for extracting business value from large datasets and improving organizational performance.

Natural Language Processing

Natural Language Processing (NLP) is an AI technology that enables computers to understand, interpret, and generate human language. NLP allows businesses to interact with customers more efficiently through chatbots, virtual assistants, automated customer support systems, and sentiment analysis tools. From a business perspective, NLP enhances customer engagement by providing instant responses to customer inquiries and analyzing customer feedback from reviews, social media, and surveys. According to Chowdhary (2020), NLP technologies help organizations improve communication efficiency and gain deeper insights into customer preferences and behaviors. As a result, businesses can develop more personalized products and services, leading to stronger customer relationships and improved retention rates.

Automation Tools

Businesses utilize automation tools to streamline administrative processes, reduce operational errors, and increase productivity. For example, organizations automate invoice processing, payroll management, inventory tracking, and customer service operations. Davenport and Kirby (2016) note that automation technologies enable firms to focus human resources on higher-value strategic activities while improving efficiency and reducing costs.

AI Adoption in Businesses

AI adoption has increased rapidly as businesses seek to improve efficiency, innovation, and competitiveness. Studies show that organizations implementing AI benefit from enhanced productivity, better decision-making, and improved operational performance (Bughin et al., 2018). AI is also increasingly integrated into business strategies to support digital transformation and innovation (Jöhnk et al., 2021). Successful adoption depends on factors such as data availability, technological infrastructure, and management support (Ransbotham et al., 2020), enabling firms to achieve stronger performance and competitive advantage.

Industries Using AI

AI is widely used across various industries to improve efficiency and customer service. In healthcare, it supports diagnosis and patient care (Topol, 2019). Financial institutions use AI for fraud detection and risk management (Bharadiya, 2023). Retail businesses apply AI for personalized recommendations and inventory management (Grewal et al., 2021), while manufacturers use it for predictive maintenance and quality control

(Lee et al., 2018). AI is also utilized in telecommunications and logistics to optimize operations and enhance service delivery (Wamba-Taguimdje et al., 2020).

Information Systems in Organizations

Information Systems (IS) are integrated systems that collect, process, store, and distribute information to support organizational operations, decision-making, and strategic planning. They help businesses manage data efficiently, improve communication, enhance productivity, and gain a competitive advantage (Laudon & Laudon, 2022). In today's digital business environment, Information Systems are essential for streamlining processes and supporting informed decision-making.

Types of Information Systems

Management Information Systems (MIS)

Management Information Systems (MIS) provide managers with timely and accurate information to support planning, monitoring, and decision-making. MIS converts operational data into meaningful reports that help organizations improve efficiency and performance (O'Brien & Marakas, 2011).

Enterprise Resource Planning (ERP)

Enterprise Resource Planning (ERP) systems integrate various business functions, such as finance, human resources, production, and supply chain management, into a single platform. ERP systems improve coordination, reduce operational inefficiencies, and enhance organizational productivity (Davenport, 1998).

Customer Relationship Management (CRM)

Customer Relationship Management (CRM) systems help businesses manage customer interactions, analyze customer data, and improve customer satisfaction. CRM enables organizations to strengthen customer relationships, personalize services, and increase customer retention (Payne & Frow, 2005).

Role in Decision-Making and Data Management

Information Systems play a crucial role in decision-making by providing accurate, timely, and relevant information. They help managers analyze business performance, identify trends, and make data-driven decisions. Additionally, IS improves data management by ensuring efficient storage, retrieval, and analysis of organizational data, leading to better operational control and strategic planning (Laudon & Laudon, 2022).

Previous studies show that Information Systems significantly enhance organizational performance and efficiency. Melville (2004) found that effective use of IS improves business processes and organizational outcomes. Similarly, DeLone and McLean (2003) reported that high-quality information systems contribute to improved decision-making, user satisfaction, and business success. Research also indicates that ERP and CRM systems help organizations optimize resources, improve customer service, and achieve competitive advantages (Payne & Frow, 2005; Davenport, 1998).

AI and Operational Efficiency

Artificial Intelligence (AI) plays a significant role in improving operational efficiency by automating business processes, reducing human errors, and lowering operational costs. Organizations increasingly adopt AI technologies to streamline workflows, enhance productivity, and improve decision-making.

Process Automation

AI enables businesses to automate repetitive and time-consuming tasks such as data entry, customer support, inventory management, and transaction processing. Automation reduces processing time and allows employees to focus on strategic activities. Davenport and Kirby (2016) found that AI-powered automation significantly

improves productivity and operational performance across various industries.

Reduction in Human Error

AI systems perform tasks with greater consistency and accuracy than manual processes, helping organizations minimize errors. In sectors such as finance and healthcare, AI reduces mistakes in data analysis, fraud detection, and diagnostic procedures. Topol (2019) argues that AI enhances accuracy and reliability, leading to better operational outcomes and service quality.

Cost Efficiency

By automating routine operations and optimizing resource utilization, AI helps organizations reduce labor costs and operational expenses. AI-driven predictive analytics also assists businesses in minimizing waste and improving resource allocation. Bughin et al. (2018) reported that companies implementing AI technologies achieved significant cost savings while increasing productivity and profitability.

Examples from Literature

Several studies provide evidence of AI's contribution to operational efficiency. In manufacturing, Lee et al. (2018) found that AI-based predictive maintenance systems reduced equipment downtime and improved production efficiency. In retail, Grewal et al. (2021) reported that AI-driven demand forecasting and inventory management improved operational performance and customer satisfaction. Similarly, Bharadiya (2023) highlighted that AI applications in the financial sector enhanced fraud detection processes and reduced operational risks.

Although researchers generally agree that AI improves operational efficiency, their focus differs across studies. Davenport and Kirby (2016) emphasize automation as the primary source of productivity gains, while Bughin (2018) focus on AI's ability to create economic value through cost reduction and performance improvement. Lee (2018) highlights the operational benefits of AI in manufacturing environments, whereas Grewal (2021) stresses its effectiveness in retail operations and customer service enhancement. Despite these differences, all studies conclude that AI contributes significantly to organizational efficiency, productivity, and competitive advantage.

AI and Customer Retention

Artificial Intelligence (AI) helps businesses retain customers by delivering personalized experiences based on customer preferences, purchase history, and behavior. This personalization increases customer satisfaction and strengthens loyalty.

AI also provides valuable customer insights by analyzing large amounts of data, helping businesses understand customer needs and predict future behavior. Predictive analytics can identify customers at risk of leaving, allowing companies to take proactive retention measures.

Common AI tools include chatbots, recommendation systems, and predictive analytics platforms. Studies show that these technologies improve customer satisfaction, enhance loyalty, and contribute to higher customer retention rates.

Although existing research extensively examines the role of Artificial Intelligence (AI) and Information Technology (IT) in technology-driven organizations, limited attention has been given to how these technologies create value for businesses whose core operations are not based on AI or IT. Traditional sectors such as retail, hospitality, manufacturing, education, and healthcare increasingly use AI and IT to improve operational efficiency, customer service, and decision-making, yet their adoption strategies and business outcomes remain underexplored.

Furthermore, current literature focuses primarily on automation and customer satisfaction, with insufficient emphasis on how AI and IT can serve as strategic differentiators. There is a lack of comprehensive research on

how the effective integration of AI and IT enables businesses to gain a competitive advantage, distinguish themselves from competitors, strengthen brand value, and stay ahead in rapidly evolving markets. Addressing this gap will provide a broader understanding of AI and IT as business enablers rather than technologies limited to AI-centric organizations.

DISCUSSION

The reviewed literature indicates that AI enhances **operational efficiency** by automating repetitive tasks, improving data analysis, and supporting faster, more accurate decision-making. These capabilities reduce operational costs, increase productivity, and allow businesses to allocate resources more effectively.

The findings also suggest that AI strengthens **customer retention** by enabling personalized interactions, predictive analytics, and responsive customer support through tools such as chatbots and recommendation systems. As a result, businesses can better understand customer needs, improve satisfaction, and build long-term loyalty.

Overall, the literature demonstrates that AI is not only a tool for improving internal business processes but also a strategic asset that enhances customer relationships and provides organizations with a sustainable competitive advantage.

The findings from the reviewed literature strongly support the first research objective of examining how Artificial Intelligence (AI) and Information Technology (IT) improve **operational efficiency** in businesses. The studies consistently indicate that AI-driven automation, data analytics, and intelligent decision-making systems help organizations streamline workflows, reduce operational costs, minimize human error, and optimize the use of resources. These improvements enable businesses to perform routine and complex tasks more efficiently while allowing employees to focus on higher-value activities.

The literature also directly addresses the second research objective by demonstrating how AI contributes to **customer retention**. AI technologies, including chatbots, recommendation systems, and predictive analytics, enable businesses to deliver personalized customer experiences, respond quickly to customer inquiries, and anticipate customer needs. As a result, organizations are able to improve customer satisfaction, strengthen loyalty, and build long-term relationships, ultimately increasing customer retention and lifetime value.

Overall, the reviewed studies confirm that AI and IT are valuable strategic tools that support both operational excellence and customer relationship management. The findings align closely with the research objectives by showing that these technologies not only improve internal business processes but also enhance customer experiences, helping organizations achieve sustainable growth and maintain a competitive advantage in an increasingly digital business environment.

The findings indicate that businesses should consider Artificial Intelligence (AI) and Information Technology (IT) as strategic assets rather than simply technological tools. Their integration into business operations enhances operational efficiency through automation, data-driven decision-making, and optimized resource utilization while also improving customer experiences through personalization. As a result, businesses can reduce costs, increase productivity, strengthen customer relationships, and achieve sustainable competitive growth.

For managers, the findings highlight the need to lead digital transformation by promoting AI adoption, encouraging innovation, and developing a data-driven organizational culture. Managers play a critical role in ensuring that AI complements human expertise, supports informed decision-making, and is implemented responsibly. Investing in employee training and digital capabilities is also essential to maximize the long-term benefits of AI and IT.

The findings further suggest that **technology adoption** should not be limited to AI or IT-based companies. Businesses across traditional industries—including retail, healthcare, manufacturing, education, and hospitality—can leverage AI and IT to streamline operations, enhance customer engagement, and improve

overall business performance. Effective adoption of technologies such as predictive analytics, chatbots, and recommendation systems enables organizations to differentiate themselves from competitors, adapt to changing market demands, and establish a stronger competitive position. Consequently, AI and IT have become essential drivers of innovation and long-term business success, regardless of the industry's technological focus.

The existing body of literature provides substantial evidence that Artificial Intelligence (AI) and Information Technology (IT) enhance operational efficiency, improve decision-making, and strengthen customer retention across various industries. Most studies employ empirical methods and demonstrate that AI-driven technologies, such as predictive analytics, machine learning, chatbots, and recommendation systems, contribute to increased productivity, reduced operational costs, and improved customer experiences. The consistency of findings across multiple studies enhances the reliability of the existing research and establishes AI as a significant driver of business performance.

Despite these strengths, the literature exhibits several limitations. A considerable proportion of existing research focuses on large organizations and technology-intensive industries, limiting the generalizability of findings to small and medium-sized enterprises (SMEs) and traditional businesses. Many studies also rely on limited datasets, case studies, or specific geographic regions, which may not accurately represent diverse business environments. Furthermore, publication bias may exist, as successful AI implementations are more frequently reported than unsuccessful or unsuccessful adoption attempts.

Another significant limitation is the lack of practical evidence regarding the implementation of AI and IT in businesses whose primary operations are not technology-based. While the benefits of AI are widely discussed, relatively few studies examine the challenges of adoption, organizational readiness, implementation costs, employee resistance, and long-term return on investment in real-world business settings. Consequently, further research is required to investigate how AI and IT can be effectively adopted across a wider range of industries and how these technologies can serve as strategic tools for achieving sustainable competitive advantage beyond technology-focused organizations.

RECOMMENDATIONS

Businesses should invest strategically in AI technologies to improve operational efficiency, enhance customer experiences, and strengthen their competitive position. Implementing AI solutions such as predictive analytics, chatbots, and intelligent automation can streamline business processes, reduce operational costs, and support data-driven decision-making.

Organizations should also focus on integrating AI with existing Information Systems to ensure seamless data management, real-time analytics, and effective communication across business functions. A well-integrated digital infrastructure enables businesses to maximize the value of AI while improving organizational performance and responsiveness to market changes.

Furthermore, businesses should invest in employee training and skill development to ensure the successful adoption of AI technologies. Providing employees with the necessary knowledge and technical skills will facilitate smoother implementation, encourage innovation, reduce resistance to change, and enable organizations to fully realize the benefits of AI-driven digital transformation.

Future research should explore industry-specific applications of Artificial Intelligence (AI) to better understand how AI and Information Technology (IT) influence operational efficiency and customer retention across different sectors. Comparative studies involving industries such as healthcare, manufacturing, retail, education, and hospitality would provide more comprehensive insights into sector-specific opportunities and challenges.

Further studies should also examine the long-term impact of AI adoption on business performance, competitive advantage, employee productivity, and customer loyalty. Longitudinal research would help determine whether the benefits of AI are sustainable over time and how organizations can continuously adapt to technological advancements.

Additionally, there is a need for more empirical, data-driven research based on primary data collected from businesses of different sizes and industries. Future studies should incorporate surveys, interviews, and case studies to provide practical evidence on AI implementation, adoption challenges, and organizational outcomes. Such research would improve the generalizability of findings and offer more actionable recommendations for businesses and policymakers.

CONCLUSION

The literature reviewed demonstrates that Artificial Intelligence and Information Technology (IT) play a significant role in enhancing business performance by improving operational efficiency and strengthening customer retention. AI technologies automate routine processes, support data-driven decision-making, optimize resource utilization, and reduce operational costs, enabling organizations to achieve greater productivity and operational effectiveness.

The findings also indicate that AI contributes to customer retention through personalized services, predictive analytics, chatbots, and recommendation systems, which enhance customer satisfaction, engagement, and long-term loyalty. Businesses that effectively leverage these technologies are better positioned to build lasting customer relationships and improve customer lifetime value.

Furthermore, Information Systems provide the technological foundation for collecting, managing, and analyzing business data, allowing organizations to make informed decisions and support AI-driven applications. Together, AI and Information Systems enable businesses across both technology-based and traditional industries to improve operational performance, enhance customer experiences, and maintain a sustainable competitive advantage in an increasingly digital marketplace.

The rapid advancement of Artificial Intelligence and Information Technology has transformed the way businesses operate, making these technologies essential for improving efficiency, enhancing customer experiences, and maintaining competitiveness. As organizations across various industries increasingly adopt digital solutions, understanding the impact of AI and Information Systems on business performance has become both timely and significant. This study contributes to the growing body of knowledge by examining how AI and IT support operational efficiency and customer retention, particularly in businesses that are not primarily technology-based.

The study is also highly relevant in the context of **digital transformation**, where businesses are integrating digital technologies into their operations to improve productivity, innovation, and customer engagement. AI and Information Systems enable organizations to automate processes, make data-driven decisions, and respond more effectively to changing market demands. Consequently, the findings of this study provide valuable insights for businesses, managers, and policymakers seeking to leverage digital transformation as a means of achieving sustainable growth and long-term competitive advantage.

This literature review has several limitations that should be acknowledged. First, the review is based on a limited number of secondary sources, which may not capture all perspectives and recent developments in the field of Artificial Intelligence (AI) and Information Technology (IT).

Second, time constraints restricted the scope of the review, limiting the inclusion of a broader range of studies, industries, and geographical contexts. As a result, some emerging trends and recent advancements may not have been fully examined.

Third, the review has scope restrictions, as it primarily focuses on the role of AI and Information Systems in improving operational efficiency and customer retention. Other important aspects, such as ethical concerns, cybersecurity, regulatory issues, and implementation challenges, were discussed only to a limited extent.

Finally, the review relies entirely on secondary data from published literature rather than primary research. Therefore, the findings are dependent on the quality, accuracy, and objectivity of the existing studies and may not fully reflect real-world business practices across all industries.

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