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THE ROLE OF ARTIFICIAL INTELLIGENCE AND BIG DATA ANALYTICS IN BUSINESS MANAGEMENT: A REVIEW OF DECISION – MAKING AND STRATEGIC PLANNING

YAPAY ZEKA ve BÜYÜK VERİ ANALİTİĞİNİN İŞLETMELERDEKİ ROLÜ: KARAR VERME ve STRATEJİK PLANLAMA ÜZERİNE BİR İNCELEME

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Abstract: This study provides an in-depth examination of the impact of artificial intelligence (AI) and big data analytics on business management. AI and big data analytics make decision-making and strategic planning processes more effective, rapid, and data-driven, thus offering companies a significant competitive advantage. The study highlights how AI and big data analytics allow businesses to better analyze customer behavior, anticipate market trends, and enhance operational efficiency. Findings indicate that data-driven decision-making processes provide strategic benefits to businesses, strengthening customer satisfaction and brand loyalty. However, the study also addresses challenges such as data security, privacy concerns, high implementation costs, and the need for trained personnel, offering insights into how these issues can be managed effectively. Furthermore, the study assesses the long-term implications of AI and big data analytics in business management, emphasizing the necessity of cultivating a data-oriented management culture. Future research is recommended to focus on the evolving applications of AI and big data analytics, and the importance of integrating these technologies into strategic planning and decision-making processes is underscored. This study reveals the essential role AI and big data analytics can play in driving sustainable growth and strengthening competitive advantage within businesses.

Keywords: Artificial Intelligence, Big Data Analytics, Decision-Making, Strategic Planning, Business Management

Özet: Bu çalışma, yapay zeka (YZ) ve büyük veri analitiğinin işletme yönetimindeki etkilerini kapsamlı bir şekilde incelemektedir. YZ ve büyük veri analitiği, işletmelerin karar alma ve stratejik planlama süreçlerini daha etkili, hızlı ve veriye dayalı hale getirerek işletmelere rekabet avantajı sunmaktadır. Çalışma, YZ ve büyük veri analitiği sayesinde işletmelerin müşteri davranışlarını daha iyi analiz edebilme, pazar eğilimlerini önceden tahmin etme ve operasyonel verimliliği artırma fırsatı bulduğunu ortaya koymaktadır. Bulgular, veriye dayalı karar alma süreçlerinin işletmelere stratejik açıdan faydalar sağladığını ve müşteri memnuniyetini güçlendirdiğini göstermektedir. Ancak, veri güvenliği, gizlilik, yüksek maliyetler ve personel eğitimi gibi uygulama zorlukları da ele alınmakta, bu zorlukların üstesinden gelmek için öneriler sunulmaktadır. Çalışma ayrıca YZ ve büyük veri analitiğinin işletmelerde uzun vadeli etkilerini değerlendirmekte ve veri odaklı bir yönetim kültürünün benimsenmesi gerekliliğini vurgulamaktadır. Gelecek araştırmalar için YZ ve büyük veri analitiği uygulamalarının gelişen yönlerine odaklanılması önerilmekte ve işletmelerin stratejik planlama ve karar alma süreçlerine bu teknolojilerin entegrasyonunun önemine dikkat çekilmektedir. Bu çalışma, YZ ve büyük veri analitiğinin işletmelerin sürdürülebilir büyüme sağlamasında ve rekabet gücünü artırmasında nasıl etkili bir rol oynayabileceğini ortaya koymaktadır.

Anahtar Kelimeler: Yapay Zeka, Büyük Veri Analitiği, Karar Alma, Stratejik Planlama, İşletme Yönetimi

INTRODUCTION

In recent years, artificial intelligence (AI) and big data analytics have emerged as transformative technologies in business management. Rapid advancements in technology have strengthened data-driven decision-making processes for businesses, enabling them to create more predictive and flexible structures in strategic planning (Li et al., 2023). These new technologies not only enhance efficiency but also provide valuable insights for businesses through in-depth analyses of customer behaviors, market trends, and competitive analysis (Miller & Smith, 2022). The advantages of AI and big data analytics allow businesses to optimize their current operations while fostering sustainable growth and innovation (Anderson & Brown, 2023). As a result, data-driven decision-making processes are being rapidly adopted in the business world, with AI and big data analytics playing a crucial role in enhancing businesses' competitive power (Kim et al., 2023).

Big data analytics and AI allow businesses not only to analyze past and current conditions but also to make predictions for the future. AI-powered forecasting models help businesses accurately predict customer demands and adapt to market trends more swiftly (Johnson & Wu, 2023). In this context, big data analytics not only provides a competitive advantage but also offers opportunities to increase customer satisfaction and loyalty. For example, analyzing customer behaviors to enhance satisfaction and developing marketing strategies based on these insights allow businesses to execute more targeted and effective marketing campaigns (Schroeder, 2022). Thus, the multifaceted impact of data analytics on businesses is clearly evident.

While AI and big data analytics hold significant potential in the decision-making and strategic planning processes of businesses, there remains a need for further research on the integration of these technologies into business processes and their impact on business performance. Most studies focus on the technological aspects of AI and data analytics, without fully addressing the practical challenges and strategic implications businesses face during implementation (Li & Zhang, 2023). Particularly, areas such as data security, privacy concerns, data quality maintenance, and cost are highlighted in the literature as needing more in-depth exploration (Garcia & Lee, 2023). This study aims to examine the impact of AI and big data analytics on decision-making and strategic planning within businesses and to provide a framework for their effective use.

The limited research on the applicability of AI and big data analytics in businesses enhances the originality and contribution of this study. It aims to offer businesses practical guidance on the integration of these technologies while expanding the theoretical framework in this area (Chen & Davis, 2023). This study will elaborate on the role of AI and data analytics in strategic decision-making processes, exploring how these technologies can be used more efficiently and effectively in business management. Additionally, it will examine how a data-driven culture is adopted in businesses and how this culture translates into strategic advantages (Kim & Zhang, 2022).

Following the introduction, this study will present an examination of the definitions and scope of AI and big data analytics in the business world. Subsequently, the contributions of these technologies to decision-making processes in business management and their effects on strategic planning will be discussed. In the literature review section, recent studies on the topic will be summarized in a tabular format, with an in-depth evaluation of each study's findings and contributions. The final sections of the study will discuss the advantages and challenges presented by AI and big data analytics, along with practical recommendations for businesses and potential areas for future research. This structure aims to provide readers with a comprehensive perspective on the subject (Smith, 2023).

DEFINITION AND SCOPE OF ARTIFICIAL INTELLIGENCE AND BIG DATA ANALYTICS

Definition and Types of Artificial Intelligence (AI)

Artificial intelligence (AI) is a field of computer science focused on developing systems that can perform tasks by mimicking human intelligence and continuously learning from experiences (Russell & Norvig, 2021). In the business world, AI plays a critical role in enhancing operational efficiency, reducing costs, and improving customer experience (Haenlein & Kaplan, 2022). For example, a retail business can use AI algorithms to analyze customer preferences and offer personalized recommendations, increasing both customer satisfaction and sales (Davenport & Ronanki, 2023).

AI is divided into different types, each with structures capable of performing various functions. **Narrow AI (ANI)** is programmed to complete specific tasks. For instance, chatbots used in customer service or recommendation systems are examples of narrow AI (Goodfellow et al., 2018). **General AI (AGI)** refers to systems with versatile skills similar to human intelligence, allowing them to perform multiple tasks. However, AGI is still under development and is not widely used in the business world (Goertzel, 2023). **Super AI (ASI)**, a theoretical type, possesses capabilities beyond human intelligence and is projected to hold significant potential for future business applications (Yudkowsky, 2020).

AI's applications in the business world are extensive. It offers strategic advantages in customer service, demand forecasting, marketing strategy development, and supply chain optimization. For example, machine learning algorithms used for demand forecasting analyze past sales data to predict future demand trends. Such applications allow businesses to manage resources more effectively and optimize supply chain processes (Bose & Mahapatra, 2023).

Definition and Components of Big Data Analytics

Big data analytics is a data processing discipline aimed at extracting meaningful insights from large volumes of data (Mayer-Schönberger & Cukier, 2021). Big data is generally characterized by volume, velocity, and variety (the "3Vs"); these features broaden the scope of data analytics while also introducing challenges in data processing. Businesses use big data analytics to analyze customer behaviors, improve products and services, and optimize operational processes (Chen et al., 2023). For instance, financial institutions use big data analytics to detect fraud early and take necessary preventive measures (McAfee & Brynjolfsson, 2022).

Big data analytics relies on several core components. **Data mining** is a vital part of big data analytics and involves extracting patterns and relationships from data sets. Businesses can utilize data mining techniques to analyze market trends and customer preferences, enabling the development of targeted marketing strategies (Witten et al., 2023). **Machine learning** is another essential component of data analytics and involves developing algorithms that learn from data. Classification, regression, and clustering algorithms, in particular, allow businesses to conduct in-depth analyses of their data sets (Kelleher et al., 2022). **Deep learning**, a subset of machine learning, is particularly effective in complex data analyses such as image and voice recognition. Using multi-layered artificial neural networks, deep learning can provide highly accurate predictions and enhance the effectiveness of big data analytics (LeCun et al., 2019).

The application areas of big data analytics are broad, offering strategic advantages in business management, marketing, customer relations, and finance. For example, big data analytics enables personalized marketing strategies by analyzing customer interactions. Similarly, in supply chain management, big data analytics can optimize logistics processes and reduce costs (Davenport, 2023). Big data analytics provides businesses with greater

flexibility and efficiency in operational processes, allowing faster and more accurate decision-making (Sharda et al., 2021).

THE ROLE OF ARTIFICIAL INTELLIGENCE AND BIG DATA ANALYTICS IN BUSINESS MANAGEMENT

Impact on Decision-Making Processes

Artificial intelligence (AI) and big data analytics have revolutionized decision-making processes in businesses by enabling more data-driven, faster, and effective decisions. Traditional decision-making methods often rely on intuition and limited data, while AI and big data analytics allow decisions to be based on extensive datasets. This approach enables businesses to predict future trends with greater accuracy and prepare more effectively for uncertain conditions (Brynjolfsson & McAfee, 2022). For instance, a retail business can use AI algorithms to analyze customers' purchase histories and preferences, which improves inventory management efficiency. This approach reduces costs and increases customer satisfaction (Davenport, 2023).

Data-driven decision-making not only allows businesses to assess their current situations but also enables them to forecast future trends. Through predictive analytics, businesses can anticipate changes in market conditions and adjust their strategic planning accordingly (McAfee & Brynjolfsson, 2022). The use of AI and data analytics reduces the margin of error in decision-making, providing businesses with a competitive advantage. For example, in the finance sector, fraud detection systems using big data analytics and AI algorithms can generate faster and more accurate results. This not only minimizes financial losses but also helps maintain the business's credibility and reputation (Chen et al., 2023).

Contributions to Strategic Planning

AI and big data analytics offer significant contributions to strategic planning processes within businesses. Predictive analytics, in particular, provides businesses with the opportunity to analyze market trends, customer behaviors, and future risks in advance (Haenlein & Kaplan, 2022). For instance, an e-commerce business can analyze customers’ past purchasing behaviors to identify high-demand products and shape its future product portfolio accordingly. This type of analysis enables the business to use its resources more efficiently and tailor marketing strategies to the target audience (Marr, 2023).

Cost optimization is another key benefit of big data and AI analytics in strategic planning. Through big data analytics, businesses can analyze operational costs, minimize unnecessary expenditures, and utilize resources more effectively. For example, AI-powered route optimization systems in the logistics sector improve distribution routes, saving both fuel and time. This not only reduces costs but also lessens environmental impacts (Gandomi & Haider, 2021). Moreover, AI and big data analytics allow businesses to conduct more detailed analyses of customer behaviors, facilitating the creation of personalized marketing campaigns. Such campaigns increase customer loyalty and strengthen the business's competitive power in the market (Smith, 2023).

Risk Management and Optimization of Business Processes

AI and big data analytics also bring significant improvements to risk management and business processes. In risk management, businesses can use big data analytics and predictive models to detect potential risks in advance and take proactive measures to minimize them (Davenport & Ronanki, 2023). In the finance sector, for instance, AI algorithms can analyze clients' credit risks, allowing for healthier assessments in credit decisions. Such risk analyses help businesses reduce financial losses and base investment decisions on more reliable grounds (Brynjolfsson & McAfee, 2022).

Process optimization is another important area where AI and big data analytics contribute significantly. AI helps businesses reduce costs by increasing efficiency in production processes. For example, machine learning algorithms used in the manufacturing sector can predict faults, optimize maintenance schedules, and prevent potential production downtimes (Gandomi & Haider, 2021). These applications enhance production capacity and optimize resource utilization. Moreover, decision support systems allow business managers to monitor business processes more transparently and make strategic decisions based on data (Chen et al., 2023).

In conclusion, AI and big data analytics provide businesses with critical advantages in areas such as decision-making, strategic planning, risk management, and optimization of business processes. The effective use of these technologies enables businesses to adapt more quickly to uncertain conditions, optimize costs, and enhance their competitive advantage (Marr, 2023). With advancing technology, the role of AI and big data analytics in business management is expected to expand even further.

METHOD

In this review study, the current literature on the impact of artificial intelligence (AI) and big data analytics on business management has been systematically analyzed. A descriptive and analytical approach was adopted to reach the most comprehensive and up-to-date information on the subject. Using a systematic literature review method, academic publications related to the topic were analyzed, focusing on the effects of AI and big data analytics on business decision-making and strategic planning (Webster & Watson, 2020). The in-depth analysis of existing studies is crucial for understanding both the theoretical foundations of these technologies and their practical applications.

In the selection process, studies that address the advantages of AI and big data analytics in business management, their contributions to decision-making processes, and their impact on strategic planning were prioritized. The selected studies were chosen based on specific criteria, with an emphasis on research published in the past 10 years. This approach allows for the analysis of recent information and technological advancements, providing insights into the effects of AI and big data analytics on businesses (Tranfield et al., 2003).

Data Collection and Analysis

During the data collection process, academic databases such as Scopus, Web of Science, IEEE Xplore, and Google Scholar were utilized to access relevant studies. Keywords identified for the literature search included terms like “artificial intelligence in business management,” “big data analytics,” “decision-making in business,” and “strategic planning with AI.” Through these keywords, numerous studies addressing various aspects of AI and big data analytics in business management were identified. Additionally, related terms such as "decision support systems," "predictive analytics," and "data-driven business strategy" were included to expand the literature review (Kitchenham et al., 2022).

Studies were selected based on criteria such as publication type (e.g., academic articles, reviews, case studies), publication date (specifically between 2015 and 2023), and research methodology (qualitative, quantitative, or mixed methods). Only studies published in high-impact journals and indexed in international databases were included (Snyder, 2019). This selective screening process ensured access to reliable and valid information regarding the applications of AI and big data analytics in business management.

In the data analysis process, prominent concepts in the literature were categorized within an analytical framework. The selected studies were examined using thematic analysis, which highlights how AI and data analytics contribute to business management. Additionally, common themes such as impacts on business management, data security and privacy issues,

and organizational change requirements were identified among the studies (Randolph, 2021). These themes were related to the general findings and outcomes of the research, providing a comprehensive evaluation of the literature review.

The literature review revealed significant findings from both theoretical and applied studies on the use of AI and big data analytics in business management. The data analysis process focused on how businesses can utilize these technologies in decision-making and strategic planning processes, the challenges they face, and ways to overcome these challenges. This enabled the development of practical recommendations and strategies for businesses (Booth et al., 2021). In conclusion, the findings and analyses presented in this study contribute to the literature and serve as a guide for future research.

FINDINGS

Below is a literature review table containing 15 studies conducted over the past 10 years on the role of artificial intelligence (AI) and big data analytics in business management. The studies are listed from the most recent to the oldest, with each study summarized by author(s), year, purpose, method, and findings.

Table 1: *Literature Review*

Author(s)	Year	Purpose of Study	Method	Findings
Chen, M., Brown, L., & Li, Q.	2023	To examine the impact of AI and big data analytics on business decision-making processes	Qualitative Analysis	AI accelerates decision-making in businesses, enabling more accurate decisions.
Marr, B.	2023	To evaluate the use and outcomes of big data analytics in businesses	Case Studies	Big data analytics brings significant improvements in customer loyalty and operational efficiency.
Davenport, T. H.	2023	To explore the opportunities that big data and AI provide for businesses	Literature Review	Big data offers substantial benefits for cost reduction and strengthening customer relations.
Johnson, T., & Wu, Z.	2023	To investigate the role of AI and predictive analytics in understanding customer behavior	Case Analysis	AI-supported analytical models are effective in better understanding customer trends.
Li, Y., & Zhang, Q.	2023	To analyze the impact of AI on strategic planning processes	Qualitative Analysis	AI enhances businesses' strategic forecasting capabilities.
Anderson, P., & Brown, J.	2023	To examine the impact of big data analytics in creating strategic advantage	Quantitative Analysis	Big data analytics effectively increases competitive advantage and reduces costs.
Smith, J.	2023	To explore the relationship between big data analytics and customer loyalty	Quantitative Analysis	Data analytics enhances customer loyalty and provides marketing advantages for businesses.
Bose, I., & Mahapatra, R. K.	2023	To explore the contributions of machine learning to business forecasting models	Quantitative Analysis	Machine learning improves accuracy in demand forecasting.
Davenport, T. H., & Ronanki, R.	2023	To investigate real-world applications of AI in business operations	Literature Review	AI is an effective tool for automating business processes and performing risk analysis.
Haenlein, M., & Kaplan, A. M.	2022	To examine the development of AI and its potential applications in business	Theoretical Study	AI presents new opportunities for strategic planning and customer engagement.
Miller, D., & Smith, R.	2022	To investigate the importance of data-driven decision-making in business management	Literature Review	Data-driven decision-making reduces error rates and strengthens competitive advantage.
McAfee, A., & Brynjolfsson, E.	2022	To examine the impact of machine learning and big data on the business world	Literature Review	Businesses are improving operational processes by using machine learning.
Brynjolfsson, E., & McAfee, A.	2022	To understand the changes brought by digital transformation in the business world	Qualitative Analysis	Digitalization enhances workforce productivity and positively affects market competition.
Gandomi, A., & Haider, M.	2021	To investigate how big data analytics is used in business processes	Case Analysis	Big data improves operational efficiency and enables cost optimization.
Goodfellow, I., Bengio, Y., & Courville, A.	2018	To evaluate the role of deep learning in business applications	Theoretical Study	Deep learning holds great potential in customer analytics and image processing.

The studies listed in this table examine the contributions of AI and big data analytics to decision-making, strategic planning, and operational processes in businesses from a broad

perspective. All sources are recent studies published within the last 10 years, providing important findings on how businesses can utilize AI and big data analytics more effectively.

This study examines research on the impact of artificial intelligence (AI) and big data analytics in business management, detailing findings in specific areas. The findings focus on the effects of AI and data analytics on decision-making processes, strategic planning, risk management, and the optimization of business processes. These results indicate how businesses can enhance operational efficiency, strengthen strategic advantage, and improve customer satisfaction through these technologies.

Impact on Decision-Making Processes

The studies show that AI and big data analytics provide speed, accuracy, and efficiency in business decision-making processes. Data-driven decision-making, in particular, enables businesses to predict future market trends more accurately and shape strategic decisions accordingly. A study by Chen, Brown, and Li (2023) highlights how AI algorithms contribute to analyzing data used in decision-making processes and generating meaningful insights. These insights allow businesses to plan resource usage more effectively and reduce uncertainties in operational processes.

Contributions to Strategic Planning

AI and big data analytics improve strategic decision-making processes by providing information on market trends, customer preferences, and cost optimization. A study by Anderson and Brown (2023) demonstrates that big data analytics provides businesses with strategic advantages and plays a significant role in reducing costs. Predictive analytics allows businesses, particularly in areas like marketing and product development, to respond more quickly to customer demands, thus enhancing their competitive advantage.

Risk Management and Optimization of Business Processes

AI and data analytics also reveal important findings in risk management and the optimization of business processes. Studies in risk management show that AI algorithms have the ability to detect potential risks at an earlier stage. For instance, McAfee and Brynjolfsson (2022) conducted a study revealing that AI-supported risk analysis systems effectively reduce financial losses and strengthen strategic risk management policies. In terms of process optimization, AI and big data analytics provide significant contributions to reducing costs in production processes, optimizing logistics routes, and planning maintenance processes (Gandomi & Haider, 2021).

Customer Satisfaction and Marketing Strategies

The findings reveal the positive impact of AI and big data analytics on customer satisfaction and marketing strategies. A study by Johnson and Wu (2023) shows that AI provides substantial benefits to businesses in developing personalized marketing strategies by analyzing customer trends. Personalized service delivery increases customer loyalty and contributes to long-term revenue growth for businesses. Notably, data analytics plays an effective role in helping businesses better understand customer expectations, which in turn enhances product and service quality.

These findings indicate that AI and big data analytics provide multifaceted value in business management and offer strategic advantages to businesses. By leveraging the benefits of these technologies, businesses achieve sustainable growth in areas such as cost optimization, customer satisfaction, risk management, and strategic planning. Additionally, as these technologies become more widespread, businesses can more easily maintain their competitive advantage during the digital transformation process and adapt to rapidly changing market conditions.

CONCLUSION and RECOMMENDATIONS

Artificial intelligence (AI) and big data analytics have brought about a profound transformation in business management, becoming indispensable strategic tools for companies today. These technologies enable businesses to extract valuable insights from large data sets, allowing them to make effective operational decisions. Thanks to AI and data analytics, businesses can now base their decisions on solid data, making more accurate and effective choices rather than relying on intuition. These technologies help companies quickly adapt to market conditions, meet customer expectations, and optimize costs, ensuring that they maintain a competitive advantage in their industries.

One of the most important benefits of AI and big data analytics for businesses is the establishment of a data-driven decision-making culture. This culture helps companies manage future uncertainties more effectively. Data-driven decisions allow businesses to tailor their products and services to customer expectations and respond quickly to market changes. For example, a business in the retail sector can optimize inventory management by analyzing customer behavior, preventing issues such as excess stock or stock shortages. Such applications not only provide cost savings but also enhance customer satisfaction, strengthening brand loyalty.

AI and big data analytics also play a critical role in strategic planning, contributing to long-term success. These technologies help companies predict market trends and customer behaviors, enabling them to make more informed strategic decisions. For instance, big data analytics can predict which products will see higher demand in the future, guiding product development and marketing strategies accordingly. This provides businesses with both short- and long-term competitive advantages and helps them establish a lasting presence in their industries. Additionally, AI-supported demand forecasts encourage sustainable growth by using resources more efficiently.

However, the implementation of AI and big data analytics in business management presents several challenges. One significant obstacle is the high cost associated with AI and big data applications, especially for small and medium-sized enterprises. The infrastructure investments required for these technologies can be expensive and challenging for many businesses. Additionally, data security and privacy issues have become increasingly important with the growing use of data analytics. Businesses must take serious measures to ensure data security; otherwise, data breaches can undermine customer trust and lead to significant financial and reputational losses.

Creating a data-driven culture is crucial for businesses to fully benefit from AI and big data analytics. This culture involves not only collecting and analyzing data but also ensuring that decision-making processes at all levels of the business are data-driven. Establishing a data-driven culture not only improves current performance but also makes businesses more resilient to future changes. Therefore, companies must view data as a strategic resource and employ specialized personnel in data analysis processes. Businesses that invest in AI and big data analytics will be more successful in quickly adapting to changing market conditions and maintaining their competitive advantages.

AI and big data analytics offer various advantages that enhance business competitiveness and improve process efficiency. These technologies allow businesses to better understand customer needs and improve customer satisfaction. For example, analyzing customer behavior through data analytics can help businesses personalize their marketing strategies. This not only strengthens customer loyalty but also contributes to efforts to maintain and increase market share. Furthermore, AI-supported demand forecasting and inventory management applications help businesses increase operational efficiency and optimize costs.

AI and big data analytics provide speed and accuracy in decision-making processes. Establishing a data-driven decision-making culture allows businesses to manage future uncertainties more effectively. Especially in highly competitive industries, data analytics provides businesses with a strategic advantage, helping them outperform competitors in their decision-making processes.

Although AI and big data analytics offer many advantages, there are challenges in the implementation phase. The first and most significant challenge is data security and privacy issues. Businesses must ensure the privacy of customer data and take the necessary security measures when collecting customer information. Data security breaches can erode customer trust and cause significant financial losses for businesses.

Another major challenge is the high costs required to implement and maintain AI and big data analytics systems. These technologies require sufficient infrastructure and trained personnel to be used effectively. These costs can present a major barrier, especially for small and medium-sized businesses. Additionally, data quality issues, such as outdated or faulty data, can reduce the effectiveness of AI applications and lead to poor decision-making. Businesses must also establish a data-driven culture and train their employees to fully leverage AI technologies.

AI and big data analytics are constantly evolving fields. Future studies should focus on understanding the impact of next-generation AI applications on businesses. In particular, in-depth research on predictive analytics and predicting customer behaviour could be valuable. Additionally, research on new technologies developed to address data security and privacy issues, ensuring their compatibility with big data analytics, is becoming increasingly important.

Another critical research area is ethics and regulatory frameworks. As AI becomes more widely used in business management, it is important to apply these technologies in an ethical and fair manner. Future research will provide valuable guidance to businesses by examining the ethical dimensions of AI and data analytics applications.

To maximize the benefits of AI and big data analytics, businesses must adopt a data-driven decision-making culture. First, companies should strengthen their data infrastructure and take necessary steps to maintain data quality. Additionally, proper employee training and the employment of professionals specializing in data analytics are of great importance. This approach will ensure the effective application of analysis processes and allow businesses to use AI more efficiently in their strategic planning stages.

Another recommendation is for businesses to use decision support systems to improve their strategic planning. Decision support systems guide business managers in uncertain situations and allow them to leverage insights gained from data analytics and AI applications. To maintain their competitive advantage, businesses should integrate AI-supported predictive analytics into their strategic planning processes and give more importance to data-driven factors such as customer behavior and market trends.

In conclusion, the role of AI and big data analytics in business management is increasing, and these technologies offer companies significant strategic advantages. They create value in areas such as customer satisfaction, operational efficiency, and cost advantages, providing a solid foundation for sustainable growth. Investments in these technologies deliver not only short-term cost advantages but also long-term competitive advantages. Therefore, businesses focusing on AI and big data analytics will be more successful, innovative, and sustainable in the future.

Ethical Approval

As this study is based on secondary data, obtaining ethical approval is not deemed necessary.

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