

Chapter 19

Leveraging Artificial Intelligence for Enhancing Customer Experience and Efficiency in the Banking Industry

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ABSTRACT

AI is a revolutionary force that could disrupt several sectors. This chapter addresses key questions about AI's impact on banking. It examines natural language processing, machine learning, and predictive analytics in finance. The study aims to elucidate how AI can enhance the banking experience for customers by exploring its role in personalized services, customer support, and fraud prevention. Further, it offers a comprehensive analysis of the pros and cons of utilizing AI in banking operations, illuminating the potential ethical and societal difficulties that may arise as a result. The research examines how AI can improve banking efficiency, transforming the business. The study's main objective is to inform industry stakeholders, policymakers, and researchers on the pros and downsides of AI adoption in this vital sector by addressing the significant AI in banking issues. This study sets the stage for a comprehensive exploration of AI's transformative potential in the banking landscape.

1. INTRODUCTION

Artificial intelligence (AI) has become a game-changing field in recent years, with the potential to alter many industries, including the financial sector (Adams, 2019). As AI continues to gain momentum across diverse industries, it is making significant inroads in the realm of banking, redefining the way financial

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institutions operate. This study intends to delve into the application of AI in banking, illuminating its potential to better serve customers and streamline internal processes. The purpose of this research is to examine the significant effects that AI has had on the banking and finance industries.

Banks now possess a potent tool in the form of artificial intelligence (AI) that can significantly augment their ability to cater to their clientele (Kumar & Nayyar, 2019). This study undertakes a comprehensive survey of the myriad AI-driven tools that have found application within the banking sector. Notable among these are Natural Language Processing, Predictive Analytics, and Machine Learning, which have gained prominence for their transformative contributions (Jakkani & Kodali, 2020). The multifaceted potential of AI is dissected in this research, highlighting its capacity to bolster operational efficiency, curtail costs, and fortify security measures. Incorporating AI in the banking sector has benefits and drawbacks, both of which are thoroughly explored in this paper. (Deloitte, 2018).

Of particular interest is the investigation into the specific domains where AI is effecting substantial change within the banking industry. This includes its pivotal role in fraud prevention, elevating client support services, and providing bespoke financial guidance (Jakkani & Kodali, 2020). The study underscores how AI is being harnessed to proactively thwart fraudulent activities, enhance customer interactions, and deliver personalized financial advice, all of which collectively contribute to an enriched banking experience.

The paper culminates by casting a forward-looking gaze towards the future of AI in banking, uncovering the latent opportunities for novel developments and innovations in this evolving landscape (Gartner, 2019). The study sets the way for a better comprehension of how the banking sector may continue to harness the power of AI to navigate the dynamic challenges and possibilities of the digital era by examining the potential pathways for further integration of AI technologies.

2. METHODOLOGY

A comprehensive review of scholarly and industry publications is conducted to gather information on artificial intelligence's application to banking (Brynjolfsson & Mitchell, 2017; Mikhalkina & Cabantous, 2015). The literature review is structured around primary applications of AI in banking, such as fraud detection, customer service, and personalized financial advice (Gupta & Jayaraman, 2021; Guo et al., 2021; Lipton et al., 2018). The review examines the different types of AI technologies currently being utilized in banking, including natural language processing, machine learning, and predictive analytics (Li & Zhang, 2021; Panigrahi et al., 2021). And, this research seeks to answer several important questions about artificial intelligence (AI) in the banking business, including what role AI plays, what benefits and obstacles are connected with its use, and how AI may be applied to improve customer experience and operational efficiency (Geetha and Uma, 2021). The idea sheds light on sensitive topics like data privacy (Kshetri and Voas, 2021; Yang, Liu, and Guo, 2020), increased efficiency, reduced costs, and enhanced security (Li & Zhang, 2021; Mikhalkina & Cabantous, 2015) and bias that arise when using AI to the banking industry.

By performing a thorough investigation of the impact and integration of AI technologies in the banking sector, this paper attempts to respond to the following research topics:

- What are the different kinds of AI technologies that are currently being used in the banking industry?

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