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An Appraisal of Automation in the Banking Sector in Nigeria

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ABSTRACT

This paper looked in to automation in the Nigerian banking sector. It explores the impact and challenges of automation in the Nigerian banking landscape, providing a comprehensive analysis of its implication for economic development. The study which is a conceptual study equally goes in to the detail history of banking automation in Nigeria. It started from the inception of application of a mechanical cash dispenser to the current era of artificial intelligence and robotic process applications. While the study concludes that banking automation has greatly enhanced banks` service deliveries in multiple ways, there is however need to put in place mechanisms to strengthen cybersecurity frameworks among other measures.
Keywords: Automation, Artificial Intelligence, Robotic Process Application, Automated Teller Machine, Cybersecurity.

INTRODUCTION

The banking sector in Nigeria plays a pivotal role in driving economic growth by facilitating financial intermediation, mobilizing savings, and supporting monetary policy implementation. Over the past few decades, automation has transformed banking operations globally, and Nigeria is no exception. Automation in banking refers to the use of technology to perform tasks traditionally carried out by humans, such as transaction processing, customer service, and risk management. In Nigeria, automation has been driven by the need to enhance efficiency, reduce operational costs, and improve customer satisfaction in a highly competitive financial landscape. Technologies such as Automated Teller Machines (ATMs), electronic banking platforms, Artificial Intelligence (AI), and Robotic Process Automation (RPA) have reshaped the sector, enabling banks to handle large transaction volumes and offer innovative services. However, challenges such as cybersecurity risks, high infrastructure costs, and resistance to technological adoption persist. This paper explores the evolution, impact, and challenges of automation in Nigeria's banking sector, providing a comprehensive analysis of its implications for economic development.

History of Automation in Nigeria

The journey of automation in Nigeria's banking sector began in the late 20th century, driven by the need to modernize operations and improve service delivery. The first significant milestone was the introduction of a mechanical cash dispenser, considered an early form of ATM, by Societe Generale Bank in 1986 [1]. However, widespread adoption of ATMs occurred in 2003 with the launch of the InterSwitch ATM system, which interconnected commercial banks and facilitated seamless transactions [2]. By 2004, 14 banks had adopted ATM technology, marking a shift from manual ledger-based systems to electronic platforms [1]. The 1990s saw further advancements with the introduction of electronic banking (e-banking) as banks transitioned from "bricks and mortar" to "clicks and mortar" models [3]. The Central Bank of Nigeria (CBN) played a crucial role by implementing banking reforms, such as the 2004 consolidation policy, which increased the minimum capital base to ₦25 billion and encouraged investment in automation to enhance competitiveness and profitability [4]. The cashless policy introduced in 2012 further accelerated the adoption of electronic payment systems, including Point of Sale (POS) terminals, mobile banking, and internet banking [5]. By 2017, the volume of ATM transactions had increased by 43.2%, and mobile payments grew by 45.7% compared to the previous year, reflecting the rapid expansion of automation [4]. More recently, the integration of Artificial Intelligence (AI) and Robotic Process Automation (RPA) has enabled banks to automate complex processes like customer service and fraud detection, positioning Nigeria's banking sector as a leader in financial technology (FinTech) innovation in Africa [6]. Despite these advancements, challenges such as inadequate telecommunications infrastructure and low technological literacy have slowed full automation adoption [7].

Literature Review

The literature on automation in Nigeria's banking sector highlights its transformative impact, opportunities, and challenges. Automation has significantly improved banking efficiency by reducing transaction processing times and operational costs. [1], notes that the adoption of Information and Communication Technology (ICT) has enhanced customer service delivery, improved record accuracy, and increased transaction speed. Similarly, [3], argues that e-banking has eliminated long queues and enabled 24/7 access to banking services, thereby improving customer satisfaction.

ATMs have been a cornerstone of banking automation in Nigeria. [8], found that ATMs have diversified financial services, enabling cash withdrawals, fund transfers, and bill payments. However, studies reveal significant challenges, including high rates of ATM fraud. A study by [9], indicates that fraudsters exploit weak security systems to steal Personal Identification Numbers (PINs), leading to financial losses for customers and banks. To address this, Adeoti suggests implementing stronger security layers and transaction alerts. The role of AI in banking automation is gaining attention. [10], highlight that AI-powered tools, such as chatbots and predictive analytics, enhance customer service and risk management. [11], add that conversational AI improves operational efficiency by automating routine inquiries, reducing costs, and enhancing workflow. However, the adoption of AI in Nigeria is limited by concerns over job displacement and inadequate academic exposure to AI technologies [10]. RPA is another emerging technology in banking automation. [12], note that RPA reduces operational costs by automating repetitive tasks, such as data entry and compliance checks. However, its adoption in Nigeria is slower compared to developed countries due to high implementation costs and resistance from labour unions concerned about job losses [13]. FinTech innovations, such as mobile banking and POS systems, have also reshaped Nigeria's banking landscape. [14], found that FinTech platforms have improved financial inclusion by providing services to unbanked populations. However, [15], caution that cybersecurity risks pose a significant threat to e-transactions, necessitating robust regulatory frameworks. The impact of automation on employee productivity is another critical area of study. A study by [16], on Union Bank Plc revealed that technological changes significantly enhance employee productivity, but cultural resistance and inadequate training can hinder effective implementation. Similarly, [17] emphasize the need for continuous staff training to align with technological advancements. Despite its benefits, automation faces infrastructural and societal challenges. [18] highlight Nigeria's low teledensity and technological achievement index as barriers to optimal ICT utilization. Additionally, [19] notes that public awareness of modern banking services remains limited, with 96% awareness of ATMs but lower awareness of internet banking and POS transactions. The literature also underscores the role of regulatory policies in driving automation. The CBN's establishment of the Nigerian Deposit Insurance Corporation (NDIC) and the introduction of prudential guidelines in the 1990s helped stabilize the banking sector and encouraged technological investments [20]. However, [21] argues that continuous recapitalization and stricter regulations are needed to address systemic issues like undercapitalization and fraudulent practices. Overall, the literature suggests that while automation has revolutionized Nigeria's banking sector, addressing challenges such as cybersecurity, infrastructure deficits, and resistance to change is critical for sustained growth.

CONCLUSION

Automation has fundamentally transformed Nigeria's banking sector, enabling faster, more efficient, and accessible financial services. From the introduction of ATMs in the 1980s to the recent adoption of AI and RPA, technological advancements have enhanced customer satisfaction, reduced operational costs, and improved financial inclusion. However, challenges such as ATM fraud, cybersecurity risks, and infrastructural limitations continue to hinder the full realization of automation's potential. The literature underscores the need for robust security measures, continuous staff training, and regulatory support to address these challenges. Moving forward, Nigerian banks must invest in advanced technologies, strengthen cybersecurity frameworks, and enhance public awareness to fully harness the benefits of automation.

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