

Research Article

Effect of Blockchain Technology Adoption on the Competitive Advantage of Financial Services Providers in Lagos, Nigeria

Ogundeko Sodiq Temitayo^{1*}, Lawal Yusuf Adedayo², Ajemunigbohun Sunday Stephen³

¹Dept. of Accounting/Faculty of Management Sciences, Lagos State University, Nigeria

²Dept. of Management Technology, Faculty of Management Sciences, Lagos State University, Nigeria

³Dept. of Insurance, Faculty of Management Sciences, Lagos State University, Nigeria

*Corresponding Author: yusuf.lawal@lasu.edu.ng

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Abstract— Financial inclusion remains a significant challenge in Nigeria, particularly in urban centers like Lagos, where traditional banking services are constrained by stringent documentation, minimum balance requirements, and limited branch networks. Blockchain technology offers a transformative solution by decentralizing financial services, democratizing access, and enhancing competitiveness. This study examines the impact of blockchain adoption on financial service providers (FSPs) in Lagos, using a mixed-methods approach. Data was collected through structured surveys and semi-structured interviews with key personnel across traditional banks, credit unions, microfinance institutions, and fintech companies. The findings reveal moderate awareness of blockchain technology among FSPs, with 60% having adopted it for payment processing and record-keeping. Blockchain adoption has led to operational efficiency improvements for 80% of respondents and cost savings for 75%, though regulatory uncertainties and technological barriers persist. The study concludes that blockchain holds substantial potential for improving the competitive advantage of FSPs in Lagos, but strategic efforts are needed to overcome adoption challenges.

Keywords— Blockchain technology, financial inclusion, competitive advantage, financial service providers, Lagos, mixed-methods research, Nigeria

1. Introduction

The financial services industry is experiencing a profound metamorphosis, propelled by the advent of blockchain technology. This innovative technology heralds a new era of security, transparency, and efficiency in managing financial transactions, which holds the promise of reshaping the landscape of financial access and affordability globally. Particularly in emerging economies such as Nigeria, blockchain's potential to catalyse economic empowerment and inclusivity cannot be overstated [3].

The transformative power of blockchain extends beyond mere transaction management; it is redefining the very fabric of the financial services industry. By enabling a decentralized framework, blockchain technology dismantles the traditional barriers to financial services, offering an unprecedented level of access to banking and investment opportunities. This democratization of finance is particularly impactful in regions like Nigeria, where a significant portion of the population remains unbanked. With blockchain, financial services can leapfrog over the limitations of legacy banking infrastructure, offering a more equitable distribution of economic resources and opportunities. This shift not only empowers individuals

but also stimulates broader economic growth and stability within these emerging markets [7][15].

In Nigeria, financial inclusion is a multifaceted challenge, particularly acute in urban centres such as Lagos. A significant portion of the population is excluded from traditional banking services due to stringent documentation requirements, prohibitive minimum balance mandates, and an insufficient network of physical branches [1]. Moreover, conventional financial transactions are characterized by their sluggish pace and high costs, attributed to the multiple layers of intermediaries involved, which culminate in protracted delays and exorbitant fees, notably in the domain of money transfers. Additionally, the prevalent reliance on cash transactions introduces vulnerabilities to theft and fraud, and despite the inherent security measures, traditional banking systems are not impervious to cyberattacks [10].

The extant financial framework is beleaguered by inefficiencies in effectively surmounting these challenges. Predominantly, traditional financial institutions are anchored in a centralized paradigm, which engenders bottlenecks that impede access and diminish operational efficiency [14]. In stark contrast, blockchain technology proffers a decentralized schema, wherein data is disseminated across a secure,

distributed network, thereby obviating the necessity for intermediaries. This conceptual divergence underscores the potential of blockchain to rectify the current system's inherent limitations [4].

Lagos, as a burgeoning megacity with a dynamic entrepreneurial spirit, necessitates a financial infrastructure that is both rapid and secure, yet remains accessible and economically feasible. The existing traditional infrastructure is ill-equipped to satisfy these burgeoning demands [1].

There is a dearth of research specifically targeting the ramifications of blockchain adoption on the financial service providers and their clientele within Lagos. This study endeavours to fill this empirical void by scrutinizing the manner in which blockchain technology could potentially redress the distinct challenges encountered by the financial services sector in Lagos.

Focusing on Lagos, Nigeria's bustling financial nerve centre, this study delves into the distinctive challenges and opportunities presented by blockchain adoption. It examines how this technological leap could enhance financial inclusion, streamline transaction processes, and fortify security measures, thereby conferring a competitive edge to local financial service providers [7].

Against this backdrop, the objective of this study is to meticulously assess the impact of blockchain technology adoption on the competitive advantage of financial service providers in Lagos. By addressing the identified challenges—limited banking access, transactional inefficiencies, and security vulnerabilities—through the lens of blockchain, this research seeks to evaluate how the technology's core features, such as decentralization, immutability, and transparency, can be leveraged to enhance the competitive positioning of these institutions. This endeavour aims to contribute to the creation of a more robust and inclusive financial ecosystem, thereby propelling Lagos towards becoming a paragon of financial innovation within the African continent.

2. Literature Review

2.1 Blockchain and Financial Services

Understanding the multifaceted aspects of blockchain technology and its potential benefits for financial services is critical to examining the transformative shift it presents for the industry [12]. At its core, blockchain technology, with its distributed ledger technology (DLT), offers a secure, transparent, and tamper-proof method for recording transactions across a network of computers [12]. This innovative approach stands in stark contrast to the traditional, centralized model of financial services, where a single entity controls data and validates transactions.

2.2 Decentralization and Enhanced Trust

The cornerstone of blockchain's appeal lies in its decentralized nature. Unlike traditional systems where data resides on a single server controlled by a central authority, blockchain distributes data across a network of computers

[14]. This eliminates the need for a central authority to validate transactions, fostering trust and transparency among all participants in the network [12]. Since every participant can view the complete transaction history, trust is established without relying on a central entity. Furthermore, the immutability of blockchain ensures that once data is recorded, it cannot be altered or deleted, further strengthening security and recordkeeping [15].

2.3 Enhanced Security and Streamlined Efficiency

The security features inherent in blockchain make it highly resistant to fraud and cyberattacks, addressing a critical concern in the digital age [12]. The distributed ledger and robust cryptography employed by blockchain make it extremely difficult to tamper with data, significantly reducing the risk of fraudulent activity.

By eliminating intermediaries involved in traditional financial transactions, blockchain can streamline processes, leading to faster transaction times and potentially lower fees [12]. For instance, trade finance processes, often riddled with paperwork and delays, can be significantly expedited through blockchain-based solutions. This translates into benefits for both financial institutions, who can improve operational efficiency, and their customers, who experience faster transaction settlements.

2.4 Promoting Financial Inclusion

The potential of blockchain to promote financial inclusion is particularly transformative. In developing economies, a significant portion of the population remains unbanked due to factors such as strict documentation requirements and limited access to traditional banking infrastructure [7]. Blockchain-based solutions, such as mobile wallets and digital identity systems, offer secure and affordable financial services to this previously excluded population. By eliminating the need for traditional bank accounts and leveraging the power of mobile technology, blockchain can bring financial services to the fingertips of millions who were previously excluded from the formal financial system [1].

2.5 Innovation and Smart Contracts

Beyond efficiency and access, blockchain unlocks doors to innovation in financial services. Smart contracts, self-executing agreements stored on the blockchain, can automate complex financial processes such as loan approvals or trade finance settlements [12]. This not only reduces operational costs for financial institutions but also paves the way for the development of entirely new financial products and services tailored to specific needs. For example, blockchain-based microloans can be offered to previously unbanked individuals based on their digital credit history.

The features outlined above—decentralization, enhanced security, streamlined efficiency, and the potential for innovation—position blockchain technology as a disruptive force with the potential to reshape the landscape of financial services. By leveraging these features, financial institutions can offer more secure, efficient, and inclusive financial

services, ultimately transforming how individuals and businesses interact with the financial system.

3. Competitive Advantage

Competitive advantage in the banking sector can be derived from several key elements, including service quality, management practices, corporate social responsibility, strategy formulation, and innovation in marketing and technology [11].

3.1 Service Quality and Management

The quality of service provided by financial institutions is a critical determinant of competitive advantage. This includes not only the customer service experience but also the efficiency and reliability of the financial services offered. Effective management practices are essential in maintaining high service quality standards, which in turn can lead to increased customer loyalty and market share [11].

3.2 Corporate Social Responsibility (CSR)

CSR initiatives can significantly enhance the reputation of financial institutions, thereby contributing to competitive advantage. By engaging in socially responsible activities, banks can build trust and goodwill among their customers and the broader community, which can be a powerful differentiator in a highly competitive market [11].

3.3 Strategy Formulation

The ability to formulate and execute a clear strategic vision is another key component of competitive advantage. This involves identifying unique value propositions, understanding customer needs, and effectively deploying resources to meet those needs. A well-defined strategy can help financial institutions navigate the complexities of the financial market and stay ahead of competitors [11].

3.4 Innovation and Creativity

Innovation, particularly in the realm of digital technology, is a significant driver of competitive advantage for financial institutions. The adoption of new technologies such as blockchain, artificial intelligence, and data analytics can lead to improved operational efficiencies, cost reductions, and the creation of new financial products and services. Creativity in marketing and product development can also attract new customers and retain existing ones [11].

Competitive advantage can also be conceptualized and measured through both financial and non-financial dimensions. Financial measures include profitability, return on investment, and market share, while non-financial measures may encompass customer satisfaction, brand strength, and employee engagement. A comprehensive approach to competitive advantage considers both types of measures to provide a holistic view of a financial institution's performance [11].

3. Theoretical Framework

Understanding the potential impact of blockchain technology on the competitive advantage of financial institutions necessitates an exploration of relevant economic theories.

This review focuses on two key frameworks: the Resource-Based View (RBV) and Transaction Cost Economics (TCE). These theories provide complementary perspectives on how firms can gain a competitive advantage, and their application offers insights into the benefits that blockchain adoption could bring to financial service providers.

The Resource-Based View (RBV) suggests that a firm's competitive advantage arises from its possession of valuable, rare, inimitable, and non-substitutable (VRIN) resources [2]. In this context, resources can encompass tangible assets, intangible capabilities, or organizational processes. VRIN resources are particularly significant because they are difficult for competitors to replicate or replace.

Blockchain technology, with its unique attributes, can be considered a VRIN resource for financial institutions (FIs). First, blockchain is valuable because it enhances efficiency, security, and access to financial services, which are highly valued by customers. For instance, the adoption of blockchain can streamline workflows, reduce paperwork, and automate processes, leading to significant reductions in operational costs and improvements in service delivery times [3]. Additionally, the strong security features inherent in blockchain can attract customers who prioritize secure and reliable financial transactions [1]. Furthermore, blockchain-based solutions can extend financial services to the unbanked population, expanding an FI's customer base and promoting financial inclusion [4]. Second, blockchain is rare because not all FIs possess the capability or resources to adopt this technology early. The process of building expertise and implementing blockchain solutions requires significant investment, making it a rare resource at the outset [6]. Third, blockchain is inimitable due to the specialized expertise and substantial investment required for its development and implementation, making it difficult for competitors to quickly replicate [6]. Finally, blockchain is non-substitutable because existing technologies do not offer the same level of security, transparency, and automation. For example, smart contracts and other blockchain applications enable the development of novel financial products and services, differentiating an FI from its competitors [6]. By harnessing blockchain as a VRIN resource, FIs can achieve a sustainable competitive advantage by delivering more efficient, secure, and inclusive financial services.

Transaction Cost Economics (TCE) emphasizes the costs associated with conducting economic transactions [5]. These costs can emerge from factors such as information asymmetry, agency problems, and contract enforcement. According to TCE, firms can achieve a competitive advantage by minimizing these transaction costs.

Blockchain technology has the potential to significantly reduce transaction costs for financial institutions by addressing key challenges. For instance, blockchain's inherent transparency reduces information asymmetry, fostering trust and minimizing the need for costly verification processes. Customers can easily verify transaction details, thus reducing the dependence on third-party verification

services [3]. Additionally, smart contracts automate tasks traditionally carried out by intermediaries, such as loan officers or escrow agents, thereby reducing reliance on intermediaries and the associated agency costs for FIs [6]. Furthermore, the immutability of blockchain ensures that contracts are self-enforcing, thereby minimizing disputes and eliminating the need for lengthy and expensive legal proceedings [7]. By addressing these transaction cost concerns, blockchain can help FIs achieve a competitive advantage through reduced operational costs, enhanced profitability, and improved customer experience.

The RBV and TCE frameworks provide valuable perspectives for analyzing the potential advantages of blockchain adoption for financial institutions. As a VRIN resource, blockchain can significantly enhance the value proposition of FIs. Additionally, by reducing transaction costs associated with traditional financial services, blockchain can strengthen the competitive position of FIs in an evolving financial landscape. This study will apply these frameworks to investigate how financial institutions in Lagos, Nigeria, can leverage blockchain to achieve a sustainable competitive advantage.

4. Empirical Evidence and Research Gap

Although research on blockchain in financial services is burgeoning, it remains in its nascent stages. Existing studies provide preliminary evidence of the potential benefits previously outlined. For instance, a case study on a blockchain-based trade finance platform demonstrated significant reductions in transaction times and costs for participating banks [3]. Similarly, another study examined a blockchain-based microfinance platform in a developing economy and found that it facilitated access to financial services for the unbanked population [4]. These studies underscore the potential of blockchain to enhance efficiency, reduce costs, and promote financial inclusion.

A comprehensive review of the literature offers a holistic framework that highlights the current state and challenges of blockchain in the financial services sector. The review systematically examined and organized the existing body of research that either quantitatively or qualitatively explored the use of blockchain technology in financial services. The findings suggest that blockchain has immense potential to transform the financial services industry, with increasing blockchain-based operations in decentralized banking, insurance, trade finance, financial markets, and the cryptocurrency market. However, the review also notes that the adoption and resultant benefits of blockchain have not been empirically tested, indicating a significant gap in the literature [6].

The empirical evidence on blockchain technology in financial services suggests that it has the potential to significantly transform the industry. Studies have identified that blockchain's core principles—computational logic, peer-to-peer transmission, irreversibility of records, distributed database, and transparency with pseudonymity—can

revolutionize various aspects of financial services, including decentralized banking, insurance, trade finance, financial markets, and the cryptocurrency market. The technology's ability to provide a secure, efficient, and transparent system for financial transactions is particularly beneficial in areas where trust is paramount [6].

Despite the growing body of literature on blockchain in financial services, a research gap remains in the empirical testing of blockchain adoption and its resultant benefits. While the theoretical potential of blockchain to enhance the financial services industry is widely acknowledged, there is a need for more quantitative and qualitative studies that explore the actual impact of blockchain implementation in financial institutions. This includes examining the technology's effect on operational efficiency, cost reduction, customer satisfaction, and overall competitive advantage in the financial sector. Furthermore, the specific implications of blockchain technology for financial service providers and consumers in Lagos, Nigeria, have not been extensively studied, representing a significant empirical gap that this study aims to address [6][8].

By bridging this gap, the study can provide valuable insights for policymakers, financial institutions, and other stakeholders in determining the strategic direction for blockchain technology adoption in the financial services sector.

5. Research Methods

This study investigated the potential of blockchain technology to enhance the competitive advantage of financial service providers (FSPs) in Lagos, Nigeria. Employing a mixed-methods approach, the research utilized both quantitative and qualitative data collection and analysis techniques to gain a comprehensive understanding of blockchain's impact within this specific context.

The exploratory nature of the research, focusing on a relatively new technology in a unique setting, called for a method that could capture both the tangible benefits and the nuanced organizational and strategic considerations. To this end, the study gathered quantitative data to measure the potential impacts of blockchain, such as efficiency gains, and qualitative data to explore the challenges and opportunities of its adoption.

The population for this study included all financial service providers (FSPs) operating within Lagos, Nigeria. This encompassed a broad range of institutions, including traditional banks, credit unions, microfinance institutions, and fintech companies. Given the large size of this population, estimated at around 200 institutions, a sampling strategy was employed to ensure the data collected was representative and generalizable. A sampling frame was developed using a directory of registered FSPs in Lagos, obtained from regulatory bodies or industry associations. Stratified random sampling technique was utilized to divide the population into subgroups (strata) based on relevant criteria, such as FSP size

(large, medium, small) or service type (retail banking, investment banking, etc.). A random sample of 60 institutions was drawn from each stratum, ensuring representation from different segments of the population. Sample size calculation was conducted using statistical software to determine the minimum number of participants needed to achieve a desired level of confidence and precision in the results.

Data collection was two-fold. Firstly, a structured survey was administered to individuals in strategic roles within Lagos' financial institutions, aiming to assess their awareness of blockchain, perceived benefits, and intentions for future integration. Additionally, existing research reports, industry publications, and government data were scrutinized to understand the current landscape faced by these institutions. Secondly, semi-structured interviews with key figures in the Nigerian financial services industry, including bank officials, fintech entrepreneurs, and regulatory authorities, provided deeper insights. These discussions focused on the perceived challenges and opportunities of blockchain adoption, strategies to address potential obstacles, and the anticipated effects on the competitive dynamics of financial services in Lagos.

The analysis of quantitative data involved statistical software to discern trends, correlations, and the potential influence of blockchain on key performance indicators (KPIs) linked to competitive advantage. The qualitative data, meanwhile, underwent thematic analysis to extract recurring themes and patterns that shed light on the strategic use of blockchain to gain a competitive edge.

Integrating quantitative and qualitative data throughout the research process allowed the quantitative findings to contextualize the qualitative insights, enriching the overall interpretation of the results. Ethical research principles were upheld, with informed consent obtained from all participants, who were also assured of the confidentiality of their data and the freedom to withdraw from the study at any stage.

6. Results and Findings

This section presents the findings from the mixed-methods approach employed to explore how blockchain technology could enhance the competitive advantage of financial service providers (FSPs) in Lagos, Nigeria.

6.1 Quantitative Data Analysis

Survey data from key personnel within Lagos-based FSPs were analyzed using SPSS, with descriptive statistics summarizing respondents' blockchain awareness, perceptions of its benefits, and adoption rates. The analysis focused on efficiency, security, and access to financial services.

The survey data provided a clear picture of blockchain awareness, adoption, perceived benefits, and challenges among financial service providers (FSPs) in Lagos. Respondents exhibited a moderate level of blockchain awareness, reflected in an average rating of 3.5 out of 5 on a self-assessment scale. This indicates that while blockchain is

gaining recognition, there is still room for deeper understanding and wider educational outreach within the industry. Notably, 60% of the respondents confirmed that their institutions had already adopted blockchain technology. These implementations primarily focused on applications such as payment processing and record-keeping, suggesting that FSPs in Lagos are leveraging blockchain to enhance core financial services.

In terms of perceived benefits, a significant portion of respondents (80%) reported improvements in operational efficiency post-adoption of blockchain solutions. This suggests that blockchain is seen as a key enabler of streamlined operations, reducing the time and cost associated with traditional processes. Additionally, 75% of respondents noted cost savings as a direct result of blockchain integration, underscoring its potential to reduce operational expenses. These findings affirm that blockchain technology offers tangible benefits that could translate into a competitive advantage for early adopters.

However, the survey also uncovered critical challenges that impede broader adoption. About 50% of respondents cited regulatory uncertainty and technological barriers as significant obstacles. The regulatory environment for blockchain in Nigeria remains ambiguous, creating hesitation among FSPs to fully embrace the technology. Additionally, technological challenges, such as integration with existing systems and scalability, continue to pose hurdles. These challenges highlight the need for both regulatory clarity and continuous technological innovation to support the widespread adoption of blockchain in the financial sector. This information is represented in Table 1 and Figure 1 below.

Table 1: Summary of Quantitative Findings

Aspect	Findings
Awareness and understanding of blockchain	Moderate level among respondents (average rating of 3.5 out of 5)
	Approximately 60% of institutions had already adopted blockchain technology
	Primarily used for payment processing and record-keeping applications
Perceived benefits of blockchain	80% recognized improvements in operational efficiency
	75% reported cost savings associated with blockchain use
Challenges hindering wider adoption	Regulatory uncertainty and technological barriers identified as obstacles (50% of participants)

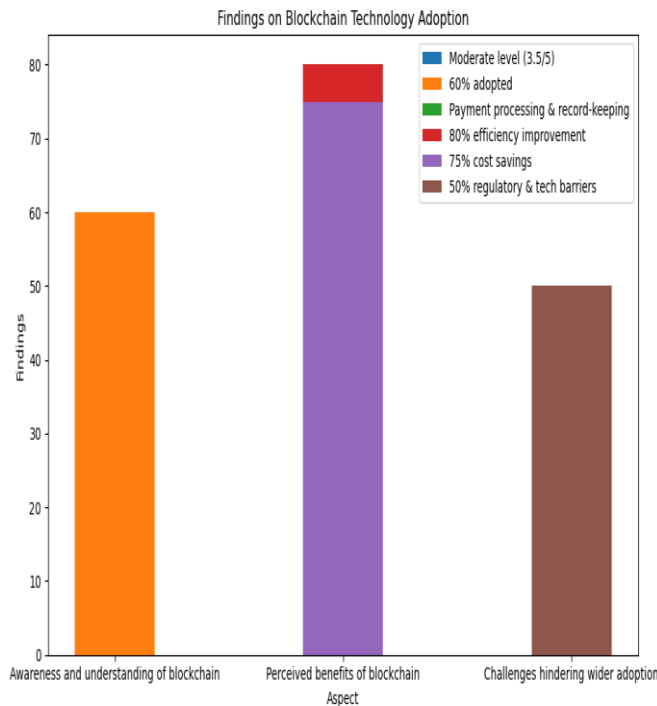


Figure 1. Findings on Blockchain Technology Adoption

Qualitative Data Analysis

Thematic analysis of interviews with key stakeholders within the Nigerian financial services industry identified recurring themes related to blockchain’s impact on competitive advantage.

6.2 Qualitative Data Analysis

The thematic analysis of interviews with key stakeholders in the Nigerian financial services industry revealed several recurring themes related to the impact of blockchain technology on competitive advantage. A predominant theme was the enhanced security and transparency offered by blockchain. Stakeholders emphasized that blockchain's immutable ledger technology significantly bolsters the security of financial transactions, which is crucial in an industry where trust is paramount. The transparency inherent in blockchain processes was also highlighted, as it reduces the potential for fraud and errors, thereby improving customer trust and satisfaction.

Another prominent theme was the potential of blockchain to drive financial inclusion. Interviewees were particularly optimistic about blockchain's ability to extend financial services to unbanked populations in Lagos. By eliminating the need for traditional banking infrastructure, blockchain could enable FSPs to reach new customer segments that have historically been underserved. This expansion into untapped markets presents a significant growth opportunity and a competitive advantage for FSPs that successfully implement inclusive blockchain solutions.

6.3 Integration of Findings

The integration of quantitative and qualitative data offers a comprehensive view of blockchain's potential for Lagos FSPs. Quantitative data quantifies awareness, adoption, and

perceived benefits, while qualitative data provides detailed insights into security, transparency, and financial inclusion. Together, these findings underscore the strategic importance of blockchain adoption for competitive advantage.

6.4 Discussion of Findings

The findings of this study underscore the transformative potential of blockchain technology within the Lagos financial services sector. The moderate awareness and adoption rates revealed by the quantitative data suggest that while blockchain is not yet ubiquitous, it is gaining traction as FSPs begin to recognize its strategic value. This aligns with the findings of Beck et al. (2018), who noted that early adopters of blockchain often experience enhanced operational efficiency, particularly in processes like payment processing and record-keeping. The efficiency gains reported by 80% of respondents in this study reinforce the idea that blockchain can streamline operations, thereby reducing costs and improving service delivery. These efficiency improvements could lead to lower transaction fees, faster processing times, and ultimately, a stronger competitive position for FSPs.

The qualitative data further highlighted the importance of security and transparency as competitive differentiators. The emphasis on blockchain's ability to enhance security through its immutable ledger is particularly relevant in the Nigerian context, where concerns about transaction security are prevalent. This finding is consistent with research by Onwusoanya & Ihugba (2020), who argued that blockchain's security features could significantly enhance customer trust in financial transactions within Africa. The ability to provide secure and transparent financial services could serve as a key competitive advantage for FSPs, particularly in a market where trust and reliability are critical factors in customer decision-making.

Financial inclusion emerged as a central theme in the qualitative analysis, with stakeholders expressing strong interest in blockchain's potential to reach unbanked populations. This finding is significant, as it highlights blockchain's ability to address one of the most pressing challenges in Nigeria's financial sector: the lack of access to financial services for large segments of the population. By leveraging blockchain, FSPs could offer affordable and accessible financial products to underserved communities, thereby expanding their customer base and gaining a foothold in new markets. This aligns with the work of Chen et al. (2020), who found that blockchain could play a pivotal role in promoting financial inclusion in developing economies. The strategic expansion into these untapped markets not only enhances social impact but also provides FSPs with a competitive edge in an increasingly crowded marketplace.

Despite the promising benefits, the study also identified significant challenges that could hinder the widespread adoption of blockchain. The regulatory uncertainty highlighted by 50% of respondents echoes the concerns raised by Tapscott & Tapscott (2016), who noted that ambiguous regulations often act as a barrier to innovation in the financial sector. Without clear guidelines, FSPs may be reluctant to

invest fully in blockchain technology, fearing legal repercussions or compliance issues. Moreover, the technological barriers identified in this study underscore the need for continuous innovation and development. The scalability and interoperability of blockchain systems remain critical issues that must be addressed to ensure successful integration with existing financial infrastructure. This finding resonates with the work of Nakamoto (2008), who emphasized the importance of ongoing technological advancements to support the growth and efficiency of blockchain networks.

7. Conclusion and Future Scope

In conclusion, this study provides a comprehensive analysis of the potential for blockchain technology to reshape the competitive landscape of the financial services industry in Lagos, Nigeria. The findings indicate that while blockchain adoption is still in its early stages, it holds significant promise for enhancing operational efficiency, reducing costs, bolstering security, and promoting financial inclusion. However, realizing this potential will require addressing the regulatory and technological challenges identified in this study. Collaborative efforts between policymakers, technology providers, and financial institutions will be crucial in creating an enabling environment for blockchain adoption. Looking ahead, future research could explore the long-term impact of blockchain adoption on financial performance and customer satisfaction within Lagos-based FSPs. Additionally, comparative studies could be conducted across different regions in Nigeria to assess the scalability of blockchain solutions and identify region-specific challenges and opportunities. Expanding the scope of research to include the perspectives of regulators and policymakers could also provide valuable insights into the development of supportive regulatory frameworks that facilitate blockchain adoption. As blockchain technology continues to evolve, ongoing research will be essential in guiding its integration into the financial services sector and maximizing its potential to drive competitive advantage.

Data Availability

The data supporting the findings of this study are available upon request from the corresponding author. Due to privacy concerns related to the sensitive nature of financial service data, access may be granted on a case-by-case basis for legitimate research purposes.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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Authors' Contributions

Author-1: Researched literature and conceived the study.

Author-2: Involved in protocol development, gaining ethical approval, patient recruitment, and data analysis.

Author-3: Wrote the first draft of the manuscript.

All authors: Reviewed and edited the manuscript and approved the final version.

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AUTHORS PROFILE

Dr. Ogundeko Sodiq Temitayo is an accomplished academic specializing in Comparative Tax Management Practices. He holds a National Diploma in Accounting from Lagos State Polytechnic, where he graduated with Upper Credit, and a First Degree in Accounting with First Class Honors from Lagos State University, receiving the University Scholar Award on three occasions. Dr. Ogundeko also earned an M.Sc. in Accounting from the University of Lagos and has completed his Ph.D. in Accounting at Lagos State University. He is an Associate Member of the Institute of Chartered Accountants of Nigeria (ICAN) and has been recognized as the Best Student in Business Communication and Research Methodology by ICAN. With over seven years of experience, Dr. Ogundeko has published extensively in both local and international journals.



Lawal, Yusuf Adedayo is a dedicated lecturer specializing in quantitative techniques, econometrics, and data analysis. With extensive experience in project management and a strong proficiency in academic writing and research, Yusuf emphasizes the practical application of quantitative methods in their teaching. They encourage critical thinking and data-driven decision-making among students. Their research interests include advanced econometric modelling, data analysis techniques, and the application of quantitative methods in real-world scenarios.



Dr. Sunday Stephen Ajemunigbohun is a distinguished academic specializing in Risk Management and Insurance. He holds a Ph.D. in Risk Management and Insurance from the University of Lagos, where he also earned his M.Sc. degrees in Risk Management and Insurance, as well as Business Administration. Currently, he serves as a Lecturer I in the Department of Insurance at Lagos State University. Dr. Ajemunigbohun has published over 40 articles in both local and international refereed journals, contributing significantly to the fields of risk management, insurance, and related disciplines.

