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BLOCKCHAIN MANAGEMENT STRATEGIES AND ORGANISATIONAL COMPETITIVENESS OF SELECTED BANKS IN DELTA STATE

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Abstract: This study investigated the effect of blockchain management strategies on organisational competitiveness of selected banks in Delta State. Specifically, the study sought to determine the effect of blockchain governance and regulatory compliance, evaluate the effect of strategic integration of blockchain systems**.** A survey research design was employed, and data were collected from employees of selected commercial banks. Out of 109 copies of questionnaire distributed**,** 100 valid responses were analyzed using descriptive statistics, correlation analysis, and multiple regressions to examine both direct and indirect effects of blockchain management strategies on organisational competitiveness. The findings revealed that all four blockchain management strategies significantly and positively influence organisational competitiveness. Specifically, blockchain governance and regulatory compliance ($\beta = 0.326$, $p < 0.001$), strategic integration of blockchain systems ($\beta = 0.276$, $p < 0.001$), each contribute to improved operational efficiency, innovation, and market positioning. Based on these findings, the study concludes that blockchain management strategies are key drivers of competitive advantage in the banking sector, and banks should strengthen governance frameworks, integrate blockchain into core operations, invest in security and risk mitigation, and develop technical expertise among staff. The study recommends that policymakers provide clear regulatory guidelines and capacity-building initiatives to support secure and effective blockchain adoption.

Keywords: *Blockchain Management Strategies, Organisational Competitiveness, Commercial Banks, Blockchain Governance and Regulatory Compliance and strategic integration.*

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Introduction

The banking sector globally has been under increasing pressure to adopt innovative technologies to remain competitive amid rising customer expectations and the expansion of financial technology (FinTech) challengers. Traditional banks, burdened by legacy systems and manual processes, face heightened competition from agile FinTech firms that leverage blockchain and other digital technologies to offer faster and more cost-effective services (International Journal of Modern Science and Research Technology, 2024). This competitive pressure highlights the necessity for banks to institute effective blockchain management strategies encompassing governance frameworks, implementation roadmaps, talent acquisition, cybersecurity safeguards, and partnerships with technology providers that are aligned with broader organizational goals.

Within the Nigerian context, although empirical research on blockchain adoption in banking remains emergent, preliminary evidence suggests that digital innovations, including blockchain, have a positive influence on organizational performance and competitiveness. For instance, studies examining technological innovation in Nigerian banks show that digital platforms and technologies, blockchain inclusive, significantly affect customer service delivery and performance outcomes (Atumah et al., 2025). However, the level of strategic readiness, integration, and managerial oversight varies widely across institutions, resulting in differentiated performance outcomes. Consequently, there is a need for empirical investigation into how blockchain management strategies are formulated and implemented in specific settings such as banks in *Delta State*, and how these strategies impact organizational competitiveness. Understanding the relationship between blockchain management strategies and organizational competitiveness will provide critical insights for banking managers, policymakers, and industry stakeholders. It will help delineate the strategic practices that enable banks to leverage blockchain effectively for competitive advantage, while also highlighting the barriers that need strategic attention to foster successful technological integration.

Statement of the problem

In Nigeria, and particularly in Delta State, banks continue to face challenges such as high transaction costs, operational inefficiencies, fraud risks, slow settlement processes, and increasing pressure from FinTech firms offering faster and more customer-centric digital services. While some banks have begun experimenting with blockchain-enabled solutions, there is evidence that adoption remains uneven and largely fragmented, often lacking clear management strategies, skilled personnel, robust governance frameworks, and alignment with organisational objectives. This situation raises concerns about whether blockchain initiatives in banks are being strategically deployed to yield

sustainable competitive advantages or merely adopted as isolated technological innovations. Despite the growing global literature on blockchain technology in banking, there is a paucity of empirical studies focusing on how blockchain management strategies influence organisational competitiveness of banks operating in Delta State. This gap limits the ability of bank managers and policymakers to make evidence-based decisions regarding blockchain investments and strategic implementation. Therefore, the problem this study seeks to address is the lack of empirical understanding of the extent to which blockchain management strategies contribute to organisational competitiveness of selected banks in Delta State, Nigeria.

Research Objectives

The broad objective of the study is to determine the effect of blockhain management strategies and organisational competitiveness of selected banks in Delta state. The specific objectives are:

i. Determine the effect of blockchain governance and regulatory compliance on organisational competitiveness of selected banks in Delta State
ii. Evaluate the effect of strategic integration of blockchain systems on organisational competitiveness of selected banks in Delta State

Review of Related Literature

Blockhain Management Strategies

Blockchain management strategies refer to the planned, coordinated, and systematic approaches organisations employ to govern, integrate, and leverage blockchain technology in ways that support their strategic goals and competitive positioning. Rather than focusing solely on the technical aspects of blockchain, management strategies encompass decision-making frameworks, governance structures, resource allocation, risk controls, and alignment mechanisms that guide how the technology is adopted and utilised across an organisation. These strategies ensure that blockchain implementations do not operate in isolation but are embedded within broader organisational objectives to enhance efficiency, transparency, security, and value creation.In the context of organisational strategy, blockchain is increasingly recognised not just for its technical capacity as a decentralized ledger, but also as a strategic resource that can transform traditional business processes. It enables trustless transactions, immutability, and distributed consensus, reducing reliance on intermediaries and enhancing transparency across operations (Karpenko et al., 2019). Strategic management of blockchain therefore involves understanding the technology's capabilities and limitations, establishing governance mechanisms that balance decentralisation with institutional control, and aligning blockchain efforts with competitive and operational goals (Karpenko et al., 2019; Frontiers in Blockchain, 2025). Moreover, successful blockchain strategies typically include phased implementation, stakeholder engagement, metrics for assessing performance, and continuous adaptation as both technology and regulatory environments evolve.Within the banking sector, effective blockchain management strategies may include integrating blockchain solutions with core banking systems, investing in staff capabilities, ensuring compliance with financial regulations, and establishing robust security protocols. These elements enable organisations to harness blockchain's potential in areas such as transaction processing, record-keeping, fraud mitigation, and customer service innovation, thereby enhancing competitiveness in dynamic markets.

Organisational Competitiveness

Organisational competitiveness refers to the ability of an organisation to design, produce, and deliver goods or services more effectively and efficiently than its competitors in a manner that ensures sustained performance and long-term survival. It embodies the capacity of an organisation to achieve and maintain a favorable position within its industry through superior value creation, adaptability, innovation, and efficient use of resources. Competitiveness is therefore not a static condition but a dynamic process shaped by internal capabilities and external environmental forces.From a strategic management perspective, organisational competitiveness is closely linked to the firm's ability to develop and deploy strategies that yield cost leadership, differentiation, or focus advantages relative to competitors (Porter, 1985). These advantages enable organisations to outperform rivals in terms of market share, profitability, customer satisfaction, and operational efficiency. In highly competitive environments such as the banking sector, competitiveness increasingly depends on how well organisations respond to technological change, regulatory pressures, and evolving customer expectations.

Banks in Delta State

In the context of this study, Banks in Delta State refers to formally licensed financial institutions operating within the geopolitical boundaries of Delta State, Nigeria, that provide a range of banking and financial services to individuals, businesses, and government entities. These services commonly include deposit mobilization, credit facilities, savings and current accounts, investment products, payment and transfer services, and other financial intermediation activities that promote economic growth and financial inclusion within the state. Banks serve as critical intermediaries in the financial system by facilitating the flow of funds from savers to borrowers, thus supporting business expansion, consumer consumption, and broader socio-economic development (Smiths, 2022).

Delta State's banking landscape encompasses a variety of financial institutions, including commercial banks, microfinance banks, and mortgage banks, which operate branch networks across major urban centers such as Warri, Asaba, Sapele, Effurun, and other local government areas. These banks include both indigenous and national brands that strive to meet diverse financial needs for example, retail and corporate banking, mortgage financing, and microcredit services thereby enhancing access to formal financial services within the region (Rico, 2025). The presence of banks in Delta State contributes to local economic development by supporting trade activities, facilitating savings and credit access for households and businesses, and promoting financial inclusion in both urban and rural communities. Banks in this context are regulated by the Central Bank of Nigeria (CBN) and must operate within national statutory frameworks and prudential guidelines. Through their operations, they play an essential role in mobilizing financial resources, providing credit for productive investment, and enabling secure financial transactions that underpin competitive economic environments such as those found in Delta State. This study, therefore, views banks in Delta State as both economic agents and organisational entities whose adoption and management of technologies like blockchain may influence their competitiveness in the local and national financial sectors.

Theoretical Framework

Resource-Based View (RBV) Theory

The Resource-Based View (RBV) Theory provides the most suitable theoretical foundation for this study. Originally conceptualized by Barney (1991), the RBV posits that an organization's sustainable competitive advantage arises from its unique resources and capabilities that are valuable, rare, inimitable, and non-substitutable (VRIN). In the banking sector, these resources extend beyond financial capital to encompass technological infrastructure, skilled human capital, governance structures, and organizational capabilities. Within this context, blockchain technology and its associated management strategies can be considered strategic resources, as they have the potential to enhance operational efficiency, strengthen security, foster innovation, and build trust qualities that competitors cannot easily replicate.

The relevance of RBV to this study is multi-faceted. First, it explains how banks can convert blockchain technology into a strategic resource by aligning it with core banking processes and organizational objectives, thereby enhancing competitiveness (Barney, 2021). Second, it underscores the importance of capability development, highlighting how skilled human capital and robust security systems are essential for leveraging blockchain technology effectively (Peteraf& Barney, 2023). Third, the theory provides insights into the sustainability of competitive advantage, suggesting that resources and expertise that are valuable, rare, and difficult to imitate such as blockchain management capabilities can secure long-term superiority for banks in Delta State. Finally, RBV offers an analytical framework for systematically examining the effects of blockchain management strategies on operational efficiency, innovation, risk management, and market responsiveness.In essence, the Resource-Based View provides both a conceptual justification and a practical guide for this study, establishing the theoretical link between blockchain management strategies and organizational competitiveness in the banking sector.

Methodology

This study adopts a quantitative research approach using a survey research design. The design is appropriate because it allows the collection of primary data from employees and management of selected commercial banks in Delta State to examine the relationship between blockchain management strategies (independent variables) and organisational competitiveness (dependent variable). The population of this study comprises employees of selected commercial banks in Delta State. Using Krejcie and Morgan (1970) sample size table for a finite population of 150 employees, a sample size of 109 respondents was selected to ensure representativeness. A multi-stage sampling technique was employed. Data were collected through self-administered questionnaire distributed on the selected employees in the sampled banks. To ensure validity, the questionnaire was content-validated by three experts in banking technology and research methodology. Modifications were made based on their feedback to ensure clarity, relevance, and alignment with study objectives. Data were analyzed using descriptive statistics (mean, standard deviation, frequency, percentages) and inferential statistics through Multiple Regression Analysis to test hypotheses..

Results and Discussions

A total of 109 questionnaires were administered to employees of selected banks. Giving a 92.4% response rate**.** After data screening, 9 copies of questionnaire were invalidated, resulting in a valid sample size of 100 respondents**.**

Table 1: Response Rate

Questionnaire Status	Frequency	Percentage (%)
Returned	109	92.4
Invalidated	9	7.6
Valid Responses	100	100

Source: field Survey Analysis (2026)

Table 2: Demographic Characteristics of Respondents

Variable	Category	Frequency (n=100)	Percentage (%)
Gender	Male	62	62.0
	Female	38	38.0
Age	20–29 years	24	24.0
	30–39 years	48	48.0
	40–49 years	22	22.0
	50+ years	6	6.0
Education	Diploma/ND	16	16.0
	Bachelor's Degree	58	58.0
	Master's Degree	24	24.0
	Doctorate	2	2.0
Experience	<5 years	18	18.0
	5–10 years	42	42.0
	11–15 years	28	28.0
	>15 years	12	12.0

Source: field Survey Analysis (2026)

Preliminary Analysis: Data Screening, Missingness and Reliability

Data were screened for missing values, outliers, and normality. Missing values were minimal (<5%) and addressed using mean substitution. Outliers were examined via boxplots and did not significantly affect results. Normality was verified through skewness and kurtosis, which fell within ±2, indicating approximate normality (George &Mallery, 2019).

Reliability (Internal Consistency)

Table 3: Scale reliability using Cronbach's Alpha

Construct	No. of Items	Cronbach Alpha
Blockchain Governance & Regulatory Compliance	5	0.872
Strategic Integration of Blockchain Systems	5	0.859
Organisational Competitiveness	5	0.891

Source: SPSS Analysis (2026)

All constructs exceed the 0.70 threshold, indicating high reliability (Nunnally, 1978).

Test of Hypotheses

Table 4 Descriptive Statistics (Scale Level)

Variable	Mean	Standard Deviation
Blockchain Governance & Regulatory Compliance	4.15	0.62
Strategic Integration of Blockchain Systems	4.09	0.65

Source: Researchers Analysis (2026)

The results show that respondents generally agree that blockchain management strategies are being implemented and positively influence organisational competitiveness.

Table 5: Model Summary:

Model	R	R^2	Adjusted R^2	Std. Error of Estimate
1	0.820	0.672	0.665	0.312

Source: Researchers Analysis (2026)

Tale 6: ANOVA Table:

Model	F	df1	df2	Sig.
Regression	144.33	4	95	0.000

Source: Researchers Analysis (2026)

Table 7: Coefficients Table:

Independent Variable	B	Std. Error	Beta	t	Sig.
Blockchain Governance & Regulatory Compliance	0.298	0.041	0.326	7.27	0.000
Strategic Integration of Blockchain Systems	0.251	0.043	0.276	5.84	0.000

Source: Researcher's Analysis (2026)

All independent variables significantly predict organisational competitiveness at $p < 0.001$.

Discussion of Findings

The study found that blockchain governance and regulatory compliance positively affect organisational competitiveness ($\beta = 0.326$, $p < 0.001$). This supports the findings of Auer &Claessens (2018), who noted that effective governance frameworks and compliance mechanisms reduce operational risk and enhance customer trust, which in turn improve competitiveness.

Strategic integration also significantly affects competitiveness ($\beta = 0.276$, $p < 0.001$). This is consistent with Casino et al. (2019), who reported that integrating blockchain into core banking processes promotes operational efficiency, innovation, and market responsiveness.

Effect of Blockchain Security and Risk Management Practices

Conclusions and Recommendations

Conclusion

The study revealed that blockchain governance and regulatory compliance significantly enhance organisational competitiveness by providing structured guidelines, ensuring adherence to legal and regulatory standards, and promoting

operational transparency, which in turn strengthens stakeholder trust. Additionally, the strategic integration of blockchain systems into core banking operations was found to foster efficiency, drive innovation, and improve customer service, thereby enhancing the competitive positioning of banks.

Recommendations

Based on the findings, the following recommendations are proposed:

i. Banks should establish robust blockchain governance frameworks and ensure strict adherence to regulatory standards. Doing so will strengthen operational efficiency, enhance market credibility, and build stakeholder trust. Policymakers and regulators should also provide clear and consistent guidelinesfor blockchain adoption, helping banks comply with legal requirements and minimize operational risks.

ii. Banks are advised to strategically integrate blockchain systems into their core operations to optimize efficiency, improve service quality, and foster innovation. Researchers and academics can support this effort by examining integration strategies across different sectors to understand how blockchain adoption enhances competitiveness.

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