

EFFECT OF TECHNOLOGICAL CHANGE ON ORGANIZATIONAL PERFORMANCE IN THE BANKING INDUSTRY

AFOLAYAN, Michael Ayorinde¹ LAWAL, Oloyede Raheem² OSISANYA, Florence³
ABDUGANIYU⁴, Toheeb, Olayemi,

ABSTRACT:

This study examines the effect of technological change on the organizational performance of First Bank Nigeria plc., Lagos State, with a specific focus on how technological innovation influences operational efficiency and how structural change impacts competitive advantage. Survey research design was adopted. The study population consists of 7,061 staff strength; a sample of 379 respondents was drawn. Simple random sampling technique was adopted to ensure equal chances of being selected. Data were collected using structured questionnaires and analyzed with regression analysis via SPSS version 27. Findings revealed that technological innovation has a significant positive effect on operational efficiency ($\beta = 2.489$, $p = 0.001$, $R^2 = 0.539$), while structural change significantly affects competitive advantage ($\beta = 0.821$, $p = 0.000$, $R^2 = 0.481$). The study concludes that both technological innovation and structural realignment are critical enablers of enhanced performance in the Nigerian banking sector and recommends continuous investment in innovative technologies and agile organizational structures to maintain competitiveness and drive sustainable growth.

Author's Affiliation:

Department of Business
Administration, Faculty of
Management Sciences, Lagos
State University, Lagos State

Keywords:

Competitive Advantage,
Operational Efficiency,
Organizational Performance,
Structural Change, Technological
Innovation.

Corresponding Mail:

¹ayorindeafolayan1234@gmail.com, 08034476519

²oloyede.lawal@lasu.edu.ng,
08122839383

³florenceosisanya@lasu.edu.ng,
08037219636

⁴toheeb850@gmail.com,
08169154060

1.0 Introduction

Technological change has become an indispensable force in shaping modern business operations and competitiveness, particularly in the financial services sector. As organizations seek to improve service delivery and operational efficiency, the adoption of new technologies has emerged as a critical enabler of performance enhancement (Teece, 2018). The banking industry, both globally and in Nigeria, has experienced substantial transformations driven by technological innovations such as mobile banking, internet banking, blockchain, and artificial intelligence (Akingbade, 2020; Eze, Chinedu-Eze, & Bello, 2021).

In Nigeria, the rapid pace of technological advancement has compelled banks to review their operational frameworks and integrate emerging technologies to meet the ever-evolving needs of customers (Oluwatoyin & Olusegun, 2017). First Bank Nigeria Plc, as one of the oldest and most reputable banks in Nigeria, has had to embrace various technological platforms to remain competitive. These include automated teller machines (ATMs), mobile applications, online banking services, and customer relationship management (CRM) systems (Adewale & Aremu, 2019). Technological adoption in Nigerian banks has been linked with improvements in operational efficiency, reduction in transaction time, and better customer satisfaction (Eze et al., 2021).

Structural change involves modifying internal frameworks, work processes, and managerial hierarchies to align with technological advancements (Burnes, 2017). These transformations can influence employee roles, service delivery models, and decision-making processes (Teece, 2018). Structural change has entailed the adoption of decentralized decision-making, increased reliance on data-driven strategies, and integration with fintech ecosystems (Adewale & Aremu, 2019). Such change is instrumental in enabling the bank to improve agility and enhance its competitive positioning in the dynamic Nigerian banking sector (Eze et al., 2021).

Technological change has disrupted traditional banking models, creating intense competition and pushing conventional banks to innovate or risk obsolescence (Eze et al., 2021). Technological change enhances product personification activities and cost effectiveness raising the bar for customer expectations. In response, banks like First Bank have invested in digital transformation

initiatives to defend their market share and maintain relevance (Akingbade, 2020).

However, structural transformation or change necessitates strategic alignment, capable leadership, and effective change management (Burnes, 2017; Teece, 2018). This study, therefore, investigates the effect of technological change on the organizational performance of First Bank Nigeria Plc in Lagos State. Specifically, it focuses on how technological innovation influences operational efficiency and how structural change affects competitive advantage.

It cannot be overemphasized to state that Technological change has become a double-edged sword for many organizations, including those in the banking sector (Vial, 2019). In Nigeria, commercial banks have increasingly invested in technological innovations such as mobile banking, digital payment platforms, biometric authentication, and artificial intelligence (Ogunleye & Osekita, 2016). However, these investments do not always translate into proportional improvements in organizational performance, raising questions about the effectiveness of technology-driven strategies in the Nigerian banking context (Eze, Chinedu-Eze, & Bello, 2021).

One of the critical challenges is that the successful adoption of technology requires corresponding structural change within the organization (Teece, 2018). Many Nigerian banks still operate with rigid bureaucratic structures, making it difficult to integrate new technologies seamlessly (Burnes, 2017). Structural inertia, resistance to change, and lack of skilled manpower have been identified and serves as a significant obstacles to effective technological transformation in Nigerian banks (Oluwatoyin & Olusegun, 2017). As a result, banks like First Bank Nigeria Plc may find it difficult to fully leverage digital platforms to gain a competitive edge, even when they have made considerable investments in technology (Adewale & Aremu, 2019). The gap between technological innovation and actual performance outcomes underscores the need to critically assess the strategic alignment between technology, structure, and organizational goals.

Furthermore, despite various efforts made by First Bank Nigeria Plc to implement technology-driven solutions, customer complaints related to service delays, system downtimes, and poor responsiveness persist (Akingbade, 2020). These issues suggest that technological adoption has not yet reached optimal efficiency levels within the organization because the bank still experiences different complaints from the customers. Moreover, emerging competitors such as fintech

companies continue to outperform traditional banks in terms of speed, flexibility, and customer-centric innovation (Eze et al., 2021).

Given the increasing complexity and competitiveness of the Nigerian banking industry, it becomes imperative to investigate whether technological innovation and structural change as proxies for contributing to the improvement of operational efficiency and competitive advantage in legacy institutions like First Bank Nigeria Plc. While past studies have examined the effects of technology on performance in general terms (Ogunleye & Osekita, 2016; Teece, 2018), there remains a significant research gap regarding the interaction between technological innovation, structural transformation, and organizational performance in the context of a major Nigerian bank. It is against this background that the study is to examine the effect of technological change on the organizational performance of First Bank. The specific objectives are to: examine the effect of technological innovation on operational efficiency of First Bank Nigeria Plc in Lagos State and investigate the effect of structural change on competitive advantage of First Bank Nigeria Plc. Lagos State.

The study aims to provide solutions to these hypotheses.

Research Hypotheses

- i. **H₀₁:** Technological innovation has no significant effect on the operational efficiency.
- ii. **H₀₂:** Structural change has no significant impact on the competitive advantage.

2.0 Literature Review

Conceptual Review

Technological Change

Technological change refers to the dynamic process through which new technologies are developed, existing ones are improved, or outdated technologies are rendered obsolete, typically in response to shifting business environments, customer preferences, or competitive pressures (Davenport & Westerman, 2018). Technological change can be **incremental**, involving gradual improvements, or **radical**, representing a fundamental overhaul of systems or operations. As

Brynjolfsson and McAfee (2017) highlight, such change significantly influences not only operational routines but also long-term strategic positioning and market competitiveness. This underscores the need for organizations to foster agile cultures capable of responding rapidly to digital disruptions (**Westerman et al., 2018**).

Technological change necessitates new learning pathways and continuous reskilling of employees to ensure alignment with evolving digital demands (Brennen & Kreiss, 2020). Research by **Coad et al., (2022)** stresses the growing importance of continuous learning and adaptive skills to maintain workforce relevance in the face of fast-paced technological evolution.

Importantly, the implications of technological change are not limited to technical adjustments they are also deeply strategic and managerial. As **Hitt, Ireland, and Hoskisson (2021)** argue, the manner in which leaders plan, communicate, and manage technology-driven change is often the defining factor in whether such initiatives succeed or fail. When integrated into a coherent strategic vision and aligned with human capital development, technological change serves as a powerful enabler of innovation, agility, and sustained competitive advantage (**Teece, Peteraf & Leih, 2016; OECD, 2022**).

Technological Innovation

Technological innovation refers to the introduction and practical application of novel or significantly enhanced products, services, processes, or organizational methods that deliver improved outcomes, efficiency, or value for businesses and their stakeholders (Schilling, 2017). It encompasses both product innovation (e.g., launching a new mobile banking app) and process innovation (e.g., automating loan approval systems), and is fundamental to driving growth, differentiation, and long-term competitiveness (Schumpeter, 1942; OECD, 2018).

Technological innovation is more than invention; it involves the systematic integration of creative ideas, technological knowledge, and business strategy to deliver practical and commercially viable solutions. According to Vial (2019), innovation enhances organizational capabilities and performance by enabling firms to respond proactively to environmental challenges and changing customer expectations. In the banking sector, this manifests through the deployment of tools such as mobile and internet banking platforms, artificial intelligence (AI), biometric verification

systems, machine learning algorithms, and blockchain technology. These innovations help to reduce operational inefficiencies, mitigate risks, improve transaction speed, and offer personalized customer experiences (Chesbrough, 2020; Deloitte, 2023).

Structural Change

Structural change refers to a significant modification in an organization's internal configuration, encompassing change in hierarchies, job descriptions, departmental responsibilities, workflows, and reporting relationships (Burton et al., 2020; Daft, 2021). These transformations are often initiated to improve organizational efficiency, strategic coherence, or responsiveness to external stimuli such as technological disruptions, market competition, or evolving regulatory environments (Jones & George, 2022).

Structural change is frequently driven by innovation in technology, automation, and evolving customer expectations (Okeke et al., 2023). These change may take several forms, including decentralization, process reengineering, outsourcing, or the adoption of agile work models (Hayes, 2022). For example, the integration of core banking software, advanced cybersecurity systems, and regulatory compliance platforms often necessitates the creation of new job functions and the realignment of departmental responsibilities (Teece, 2020).

Successful implementation of structural change hinges on its alignment with the organization's strategy, technological capacity, and human capital resources (Jones & George, 2022). When structural change are not well-aligned, they can lead to confusion, workflow disruption, and decreased employee morale, ultimately undermining service quality and operational efficiency (Hayes, 2022). Therefore, effective change management which includes leadership support, transparent communication, training programs, and stakeholder engagement is critical in facilitating smooth transitions (Burton et al., 2020).

Organizational Performance

Organizational performance refers to the extent to which an organization achieves its strategic objectives across multiple dimensions, including financial outcomes (e.g., profitability and return on assets), operational efficiency, customer satisfaction, employee engagement, and capacity for innovation (Kaplan & Norton, 2004; Otley, 2016). This performance is evaluated using both quantitative (e.g., revenue growth, customer retention rates) and qualitative indicators (e.g., employee morale, service quality), particularly in service-oriented sectors like banking where value is co-created with customers (Bititci et al., 2015).

Organizational performance is influenced by a combination of internal resources, leadership capability, strategic alignment, and responsiveness to environmental change such as technological disruption or regulatory reform (Richard et al., 2009; Teece, 2020). High-performing organizations are those that successfully harmonize their structure, technology, and culture to proactively meet shifting market demands (Kraus et al., 2022). In this regard, the adoption of digital technologies—such as AI-driven analytics, mobile banking platforms, and automated customer service systems—acts as a catalyst for improved service efficiency and competitive positioning (Okeke et al., 2023).

Operational Efficiency

Operational efficiency refers to the capacity of an organization to deliver products or services with minimal waste, optimal use of resources, and within the shortest time possible without compromising on quality or customer satisfaction (Heizer, Render & Munson, 2020). It encapsulates a holistic approach to performance that balances cost control, process effectiveness, speed, and service excellence (Slack et al., 2020).

Operational efficiency involves practices such as the automation of repetitive back-office tasks, elimination of paper-based processes, enhancement of self-service channels like ATMs and mobile banking, and integration of customer relationship management (CRM) systems (Ghosh & Kanjilal, 2021). These interventions enhance service speed, reduce human errors, and minimize operational costs (Sun et al., 2022).

Beyond technology and regulation, human capital is a crucial driver of sustainable operational efficiency. Without well-trained employees who can manage digital tools and interpret data, technological investments often fall short of expectations (Alharthi & Khalid, 2021). Training and

capacity development are therefore essential for driving process improvement and adapting to continuous change (Heizer et al., 2020). An efficient operation supports a culture of performance measurement, adaptability, and continuous improvement. Organizations that embed efficiency metrics into their strategy and conduct real-time monitoring tend to outperform their competitors in both financial and non-financial indicators (Kaplan & Norton, 2004; Hitt, Ireland & Hoskisson, 2021).

Competitive Advantage

Competitive advantage can be defined as a firm's ability to consistently outperform its competitors by delivering greater value to customers or operating more efficiently (Agyabeng-Mensah et al., 2020). It is often achieved through distinctive capabilities, innovation, and strategic positioning that set the firm apart in a competitive landscape. In the post-pandemic era, agility and digital integration have become critical elements of competitive advantage, especially in service industries like banking and e-commerce (Jeble et al., 2020).

Furthermore, competitive advantage involves delivering superior customer value through innovation, personalization, and user-centric service delivery. In a data-driven economy, firms that leverage AI, data analytics, and customer insights are better positioned to tailor services and enhance user experience (Maroufkhani et al., 2020). Competitive advantage is increasingly rooted in digital transformation, where the speed of technological adoption and customer adaptability become key differentiators (Singh et al., 2021).

Competitive advantage can also be understood from a sustainability and strategic alignment perspective. Organizations that incorporate environmental, social, and governance (ESG) practices into their strategy tend to outperform those that focus solely on short-term gains (Zhang et al., 2023). The integration of sustainability into core business operations not only enhances brand reputation but also builds long-term stakeholder trust and resilience in uncertain markets (Al-Haddad et al., 2022).

Theoretical Review

The study is hinged on the theory of Technology Acceptance Model originally developed by Davis (1989). TAM explains how users come to accept and use a technology, asserting that perceived usefulness and perceived ease of use significantly influence an individual's attitude toward using a new system, which in turn affects their behavioral intention and actual use. This model remains highly relevant today in understanding organizational responses to technological innovation. As First Bank Nigeria Plc implements technological change across its branches in Igando, Idimu, and Abule Egba, the extent to which employees perceive these technologies as useful and easy to use critically affects operational efficiency and organizational performance (Venkatesh & Davis, 2000; Martins et al., 2019).

In the context of First Bank, technological innovations such as mobile banking, automation, and digital customer engagement tools are only as effective as the users' willingness and ability to integrate them into daily operations. TAM offers a valuable lens to interpret the study's findings which showed a significant relationship between technological innovation and operational efficiency. If employees view new banking technologies as burdensome or unnecessary, adoption will be minimal regardless of the innovation's strategic intent (Ali et al., 2021). However, when employees perceive these tools as improving their job performance and simplifying tasks, they are more likely to embrace them thus enhancing operational efficiency and competitive advantage (Dwivedi et al., 2020).

Furthermore, the TAM can explain structural change in the organization following the adoption of new technologies. As technology demands new workflows and processes, organizational structure must evolve to remain efficient. TAM suggests that for such structural change to be successful, employees must not only accept the new technologies but also adapt to new roles and reporting lines that accompany them. This aligns with the study's findings that structural change has a significant impact on competitive advantage. In banking environments like First Bank Nigeria Plc, where service quality and speed are vital, structural flexibility enabled by positive technological acceptance can give the institution a substantial edge over competitors (Chao, 2019; Tarhini et al., 2017).

Finally, TAM's application in this study supports strategic decision-making for technology implementation. Management at First Bank can use insights from TAM to tailor training programs,

provide clear communication on the benefits of new systems, and involve staff in the implementation process to enhance perceived usefulness. As recent studies emphasize, organizational success in the digital era is no longer based solely on acquiring new technology but on fostering a culture of acceptance and adaptability among the workforce (Bala & Venkatesh, 2016; Alalwan et al., 2018). Thus, the Technology Acceptance Model provides a comprehensive theoretical framework that validates and supports the study's empirical findings, reinforcing the importance of human-technology interaction in achieving superior organizational performance.

Empirical Review

Nnamani and Nwoha (2019) conducted a study to examine the trend in technological change and their effect on organizational performance among selected manufacturing firms in Enugu State. The objectives were twofold: to assess the extent to which rapid technological change influence profitability and to determine their effect on employment generation. The study adopted a survey research design and utilized a sample size of 315 employees drawn from three firms. Innoson, Emenite, and Alo Aluminium out of a total population of 1,580 employees, using Yaro Yamani and Bowley's population allocation formulas. Data were collected using structured questionnaires and analyzed using t-test statistical tools. The results revealed a significant positive effect of technological change on profitability ($t\text{-calculated} = 65.29 > t\text{-critical} = 1.645$) and on employment generation ($t\text{-calculated} = 71.58 > t\text{-critical} = 1.645$). The findings confirm that the rapid adoption of new technologies has enhanced both financial and human capital outcomes in the firms studied. The researchers concluded that technological advancement contributes significantly to organizational performance and recommended that manufacturing firms embrace modern production technologies with government support to further improve internal performance and contribute meaningfully to national development.

Aremu and Yusuf (2020) investigated the effect of technological innovation on organizational performance, using Dangote Plc, Ibese Plant, Ogun State, as a case study. The study specifically aimed to assess the influence of strategic planning capability and marketing planning capability on organizational outcomes. A descriptive survey design was employed, with a sample of 96 employees selected using a convenience sampling technique. Data were gathered through structured questionnaires and analyzed using simple percentages and linear regression analysis to

test hypotheses. The study found a statistically significant and positive relationship between both strategic planning and marketing capabilities and organizational performance ($p = 0.000$). The findings highlighted the critical role of innovation-driven planning competencies in improving firm performance and ensuring sustained competitiveness. The study concluded that technological innovation, when strategically embedded in organizational planning, enhances performance outcomes. It was recommended that firms adopt pragmatic and forward-looking strategic planning systems to drive superior performance and long-term competitiveness.

Tolulope (2014) carried out a study to investigate the impact of technological innovation on organizational performance within Nigeria's manufacturing sector, using Nestle Foods Nigeria Plc as a case study. The study focused on the relationship between strategic and marketing planning capabilities and organizational performance indicators such as resource availability, productivity, staff quality, and financial strength. A survey design was used, and primary data were collected from 137 employees through structured questionnaires. Hypotheses were tested using Pearson's correlation, regression analysis, and ANOVA with SPSS software. The findings revealed that both strategic and marketing planning capabilities significantly and positively influence organizational performance both independently and jointly. Furthermore, there was a strong positive interaction between innovation and various dimensions of performance. The study concluded that technological innovation is essential for competitiveness and productivity in the manufacturing sector. The author recommended continuous investment in technological innovation and employee training to ensure efficiency, adaptability, and sustained organizational success.

Asikhia, Magaji, and Muritala, (2019) investigated the relationship between technological intelligence and firm performance, with particular attention to the mediating role of process innovation. The findings supported the view that firms that leverage their technological awareness to drive process innovation achieve superior performance outcomes. The study concluded that technological intelligence must be coupled with innovation initiatives to yield tangible results. As a practical recommendation, the authors urged firms—particularly insurance companies to utilize technological intelligence as a tool for driving process innovation and enhancing performance metrics.

3.0 Methodology

This study adopts a survey research design, focusing on First Bank Nigeria Plc., Lagos State as a representative institution within the Nigerian banking industry. Lagos State was chosen due to their high customer traffic and commercial activity, making them suitable for assessing the impact of technological innovation and structural change on organizational performance. The study consist of 7,061 core staff (FBN Annual Report, 2023) includes managers, supervisors, and operational staff who are directly involved in service delivery, customer management, and technological operations across the selected branches. The sample size for the study was determined using Taro Yamane’s formula (Yamane, 1967), with a sample size of 379 respondents was drawn using a simple random sampling technique to ensure equal chances of being selected. This approach enhances the reliability of the findings by minimizing sampling bias and capturing the diversity of employee roles. Data collection was carried out using a structured questionnaire, which was divided into two sections. The first section gathered demographic data on the respondents, while the second section focused on issues related to technological innovation, structural change, and organizational performance. A 5-points Likert scale was used to rank responses, ranging from *Strongly Agree (5)* to *Strongly Disagree (1)*. Data collected were analyzed using the Statistical Package for Social Sciences (SPSS) version 27 for both descriptive and inferential statistics. Specifically, regression analysis was employed to test the research hypotheses and determine the extent to which technological innovation and structural change impact operational efficiency and competitive advantage in First Bank Nigeria Plc. A total of three hundred and seventy-nine (379) copies of questionnaire were administered to staff of First Bank Nigeria Plc., in Lagos State while three hundred and one (301) were fully completed and returned. This indicates an average of 79% success rate.

Results and Interpretation

Pre-Estimation Test

To achieve the stated objectives, the following hypotheses were formulated:

Table 1: Pre-Estimation Results of the Data

Variables	Skewnes s	Kurtos is	VIF	Technologi cal Innovation	Structural Change	Operational Efficiency	Competitive Advantage
Technological Innovation	0.214	0.336	3.456	1			

Structural Change	0.207	0.438	1.839	0.614(0.000)	1		
Operational Efficiency	0.318	0.236	2.567	0.543(0.000)	0.473(0.000)	1	
Competitive Advantage	0.243	0.345	3.531	0.412(0.000)	0.683(0.000)	0.729(0.000)	1

Source: Researcher's Field Survey, 2025

The pre-estimation results in Table 1 demonstrate that all four variables technological innovation, structural change, operational efficiency, and competitive advantage exhibit acceptable levels of normality, as their skewness (ranging from 0.207 to 0.318) and kurtosis (ranging from 0.236 to 0.438) values are within the ± 1 threshold, indicating no significant deviation from a normal distribution. The Variance Inflation Factor (VIF) values, all below the critical value of 5, suggest no serious multicollinearity concerns, confirming the suitability of the variables for regression analysis. Furthermore, all correlation coefficients among the variables are statistically significant at the 5% level ($p = 0.000$), indicating strong positive relationships. For example, operational efficiency is strongly correlated with competitive advantage ($r = 0.729$), while structural change also shows a substantial relationship with competitive advantage ($r = 0.683$). These results affirm that the data meet the assumptions required for robust statistical modeling.

4.0 Hypotheses Testing

The hypotheses for the study are tested using single regression analysis.

Hypothesis One

H₀₁: Technological innovation has no significant effect on the operational efficiency of First Bank Nigeria Plc in Lagos State.

Table 2: Technological Innovation and Operational Efficiency

Hypotheses	Variables	B	t-value	p-value	R ²	f-value
1	Technological Innovation and Operational Efficiency	2.489	2.729	0.001	0.539	4.7568

Source: Researcher's Computation, 2025

The result in Table 2 indicates a statistically significant relationship between technological innovation and operational efficiency in First Bank Nigeria Plc, Lagos State. The beta coefficient ($\beta = 2.489$) shows a positive effect, meaning that an increase in technological innovation is

associated with an increase in operational efficiency. The t-value of 2.729 and a p-value of 0.001 (which is less than the 0.05 significance level) suggest that the effect is statistically significant, leading to the rejection of the null hypothesis (H_{01}). Furthermore, the R^2 value of 0.539 implies that 53.9% of the variance in operational efficiency can be explained by technological innovation, while the F-value of 4.7568 indicates the overall significance of the regression model. Therefore, it can be concluded that technological innovation significantly enhances operational efficiency in the bank.

Hypothesis Two

H₀₂: Structural change have no significant impact on the competitive advantage of First Bank Nigeria Plc.

Table 3: Structural change and Competitive Advantage

Hypotheses	Variables	B	t-value	p-value	R ²	f-value
1	Structural change and Competitive Advantage	.821	2.315	0.000	0.481	5.3592

Source: Researcher's Computation, 2025

Table 3 reveals that structural change has a significant impact on the competitive advantage of First Bank Nigeria Plc. The beta coefficient ($\beta = 0.821$) indicates a positive relationship, suggesting that improvements in structural change contribute to enhanced competitive advantage. The t-value of 2.315 and the p-value of 0.000 (which is well below the 0.05 threshold) confirm that the relationship is statistically significant, leading to the rejection of the null hypothesis (H_{02}). The R^2 value of 0.481 implies that 48.1% of the variation in competitive advantage is explained by structural change, and the F-value of 5.3592 supports the overall significance of the model. Thus, structural change plays a crucial role in strengthening the competitive position of the bank.

Discussion of Findings

The findings from the regression analysis indicate that technological innovation has a statistically significant effect on the operational efficiency of First Bank Nigeria Plc. The p-value (0.001) is well below the 0.05 threshold, suggesting a strong relationship between the variables. The result implies that substantial change in technological innovation can bring about meaningful shifts in operational efficiency, depending on how such innovations are managed and integrated. The coefficient of determination ($R^2 = 0.539$) reveals that 53.9% of the variation in operational

efficiency is explained by technological innovation, which underscores the importance of technology-driven practices in enhancing banking operations.

These findings align with those of Olayemi and Adebayo (2021), who found that technological advancements significantly improved process efficiency and service delivery among Nigerian commercial banks. Similarly, Chinomona (2020) reported that banks that invested in digital platforms and automation recorded higher customer satisfaction and faster turnaround times. These studies corroborate the current results, highlighting that when technological innovation is properly implemented, it leads to streamlined operations, reduced human error, and increased employee productivity, all of which collectively contribute to operational efficiency.

The study also revealed a significant positive relationship between structural change and competitive advantage in First Bank Nigeria Plc. With a p-value of 0.000 and an R^2 value of 0.481, the regression results suggest that structural change explain 48.1% of the variation in competitive advantage. The positive beta coefficient ($\beta = .821$) indicates that as structural change are implemented such as decentralization, flexible work arrangements, or restructuring of departmental functions they can foster a more responsive, adaptive, and agile organizational framework, thereby enhancing the bank's market competitiveness.

This outcome is consistent with the findings of Nwachukwu et al. (2019), who observed that organizational restructuring in Nigerian financial institutions led to improved customer engagement and service quality. Additionally, Obiwuru and Olawale (2022) found that firms that adopted adaptive structural frameworks were better positioned to respond to competitive threats and exploit new market opportunities. These corroborated studies affirm that structural agility is vital in today's dynamic banking environment, enabling institutions to sustain competitive advantage through innovation, responsiveness, and strategic alignment with market demands.

Conclusion

This study examined the effect of technological change on the organizational performance of First Bank Nigeria Plc, Lagos State. The findings revealed that technological innovation significantly enhances operational efficiency, while structural change contribute meaningfully to competitive advantage. These results underscore the critical role of continuous technological adaptation and structural realignment in achieving superior organizational performance in the banking sector. As such, First Bank Nigeria Plc and similar institutions must prioritize investments in technology and ensure that organizational structures are flexible enough to support innovation, respond to dynamic

customer needs, and maintain a strong market position in a competitive financial environment.

Recommendations

Based on the findings of this study, it was recommended that;

- i. First Bank Nigeria Plc should intensify its investment in innovative technologies that enhance operational efficiency. This includes adopting advanced digital banking platforms, automating routine processes, and ensuring continuous training of employees to effectively use these technologies. By doing so, the bank will not only reduce operational costs and errors but also improve service delivery and customer satisfaction.
- ii. Additionally, First Bank should consistently review and adapt its organizational structure to accommodate technological advancements and market change. Structural change should be strategically planned to improve internal communication, decision-making speed, and responsiveness to customer demands. This will strengthen the bank's competitive advantage and ensure long-term sustainability in the evolving financial sector. Collaboration across departments, transparent leadership, and employee involvement in change processes will further enhance organizational performance and innovation culture.

Contributions to Knowledge

This study adds to the existing literature by empirically examining the combined effects of technological innovation and structural change on organizational performance, using First Bank Nigeria plc. as a case study. Unlike prior studies that addressed these variables separately, this research highlights their joint influence in enhancing efficiency and competitiveness within the Nigerian banking sector. It also contributes methodologically by applying a structured framework using regression analysis, which can be replicated in similar studies. The inclusion of diverse employee perspectives offers a broader understanding of how innovation and organizational structure impact performance, providing useful insights for both academics and industry practitioners.

References

- Akingbade, A. (2020). Impact of digital transformation on operational efficiency in Nigerian banks. *International Journal of Financial Services*, 15(2), 234-245. <https://doi.org/10.1007/ijfs.v15i2.002>
- Akinlabi, B. H., Adegbite, E. O., & Olanrewaju, A. O. (2021). Digital transformation and organizational agility in SMEs: A case study of Nigerian small and medium enterprises. *International Journal of Information Management*, 56, 102243. <https://doi.org/10.1016/j.ijinfomgt.2020.102243>
- Aksoy, L. (2017). The role of leadership in driving innovation. *Harvard Business Review*.
- Akingbade, T., & Aremu, M. (2019). Technological innovations and organizational performance in the Nigerian banking sector. *Journal of Banking and Finance*, 13(2), 45-56.
- Ali, A., Sadiq, M., & Khan, A. (2021). Technology acceptance model and its application in banking innovation. *Journal of Financial Innovation*, 9(1), 45-63. <https://doi.org/10.1186/s40854-021-00251-6>
- Aregbeyen, O., & Olufemi, O. (2021). Measuring organizational performance in the Nigerian banking industry. *African Journal of Business Management*, 15(3), 101-110.
- Aremu, M. A., & Yusuf, A. O. (2020). The effect of technological innovation on organizational performance: A study of Dangote Plc, Ibesse Plant, Ogun State. *International Journal of Business and Management*, 15(3), 48-57. <https://doi.org/10.5539/ijbm.v15n3p48>
- Asikhia, O. A., Magaji, G. A., & Muritala, T. O. (2019). Technological intelligence and firm performance: The mediating role of process innovation. *International Journal of Technology and Management Research*, 10(2), 112-120. <https://doi.org/10.1080/2324815X.2019.1585099>
- Bala, M., & Venkatesh, V. (2016). *Adaptive user behavior and system use in the context of technological innovations: An empirical analysis using TAM*. *Information Systems Research*, 27(4), 741-757. <https://doi.org/10.1287/isre.2016.0654>
- Brennen, S., & Kreiss, D. (2020). *Digital transformation in organizations: Challenges and opportunities*. Springer.
- Brynjolfsson, E., & McAfee, A. (2017). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. W.W. Norton & Company.
- Burnes, B. (2017). *Managing change* (8th ed.). Pearson Education.

- Burton, R., Lauridsen, S., & Downes, J. (2020). *Managing organizational change: A strategic approach*. Oxford University Press.
- Chatterjee, S., Rana, N. P., Tamilmani, K., & Sharma, S. (2021). *Understanding the digital transformation process in small and medium-sized enterprises*. *International Journal of Information Management*, 56, 102244. <https://doi.org/10.1016/j.ijinfomgt.2020.102244>
- Chesbrough, H. (2020). Open innovation: The new imperative for creating and profiting from technology. *Harvard Business Review Press*.
- Chinomona, R. (2020). The role of digital platforms in improving customer satisfaction in Nigerian commercial banks. *African Journal of Business and Economic Research*, 15(4), 23-34. <https://doi.org/10.3345/ajber.2020.15.4.23>
- Daft, R. L. (2021). *Organization theory and design* (13th ed.). Cengage Learning.
- Deloitte. (2023). *Global digital banking: Trends and innovations*. Deloitte Insights.
- Dwivedi, Y. K., Rana, N. P., & Jeyaraj, A. (2020). Adoption and use of technological innovations in banking: A review of the Technology Acceptance Model. *Journal of Strategic Information Systems*, 29(2), 101587. <https://doi.org/10.1016/j.jsis.2020.101587>
- Elbanna, S., Hartmann, N., & Tesch, J. (2023). Measuring organizational performance in the digital age: New frameworks and approaches. *Journal of Management Studies*, 60(4), 633-656.
- Eze, S. C., Chinedu-Eze, V. C., & Bello, M. A. (2021). Technological innovation in the Nigerian banking sector: Challenges and opportunities. *Journal of Financial Innovation*, 12(1), 21-37. <https://doi.org/10.1007/jfi.v12i1.003>
- Ghosh, P., & Kanjilal, K. (2021). *Innovative practices and operational efficiency in the banking sector: A focus on process automation and digital tools*. *Banking Technology Review*, 11(1), 42-55.
- Hitt, M. A., Ireland, R. D., & Hoskisson, R. E. (2021). Strategic management: Concepts and cases: Competitiveness and globalization. *Cengage Learning*.
- Iansiti, M., & Lakhani, K. R. (2020). *Digital transformation and the new logic of competition*. *Harvard Business Review*, 98(6), 64-72.
- Jones, G. R., & George, J. M. (2022). *Contemporary management* (10th ed.). McGraw-Hill Education.
- Kaplan, R. S., & Norton, D. P. (2004). *Strategy Maps: Converting Intangible Assets into Tangible*

Outcomes. Harvard Business Press.

- Kumar, A., Shah, K., & Nair, N. (2021). *The role of cloud computing and AI in enhancing organizational performance*. *Journal of Cloud Computing*, 12(3), 15-30. <https://doi.org/10.1186/s13677-021-00239-7>
- Li, F., Chen, Y., & Sun, H. (2020). *Digital competencies in SMEs: Impact on decision-making and firm performance*. *Journal of Business Research*, 117, 208-220. <https://doi.org/10.1016/j.jbusres.2020.05.004>
- Maroufkhani, P., Ranjbari, M., & Sadeghi, H. (2020). *Digital transformation and competitive advantage: The role of customer value creation*. *Technological Forecasting and Social Change*, 155, 119953. <https://doi.org/10.1016/j.techfore.2020.119953>
- Mikalef, P., Krogstie, J., Pappas, I. O., & Prentzas, J. (2019). *Big data analytics capabilities and firm performance: The mediating role of dynamic capabilities*. *Journal of Strategic Information Systems*, 28(2), 137-151. <https://doi.org/10.1016/j.jsis.2019.01.001>
- Nawaz, M., Rehman, A., & Jaffari, A. (2021). *Competitive advantage in banking: Leveraging VRIN resources in a digital economy*. *International Journal of Strategic Management*, 22(4), 202-215.
- Nnamani, I. G., & Nwoha, P. (2019). Technological change and their effect on organizational performance among selected manufacturing firms in Enugu State. *Journal of Business and Economics*, 22(1), 72-86. <https://doi.org/10.1080/jbe.2019.22.1.72>
- Nwachukwu, J. C., & Chladkova, H. (2019). Digital transformation in the Nigerian banking sector: A case study of First Bank Nigeria. *Journal of International Business and Economics*, 7(3), 234-247.
- Obiwuru, T. O., & Olawale, T. O. (2022). The role of structural agility in sustaining competitive advantage in Nigerian organizations. *Journal of Strategic Management and Change*, 14(3), 145-159. <https://doi.org/10.1002/jsmc.2022.14.3.145>
- OECD. (2018). *The innovation imperative: Contributing to inclusive growth in the digital economy*. OECD Publishing.
- OECD. (2022). *Innovation and growth: Drivers of economic performance*. OECD Publishing.
- Ogunleye, O. O., & Osekita, A. (2016). Overcoming technological transformation barriers in Nigerian banks. *International Journal of Management Studies*, 8(4), 115-130. <https://doi.org/10.1007/ijms.v8i4.004>

- Okeke, J. C., Okwu, A. T., & Onochie, C. A. (2023). Digital transformation in the Nigerian banking industry: Strategic challenges and performance outcomes. *International Journal of Bank Marketing*, 41(1), 25-42.
- Oluwatoyin, B., & Olusegun, A. (2017). Technological adoption and its challenges in Nigerian banks. *International Journal of Banking and Finance*, 10(2), 199-214. <https://doi.org/10.1007/ijbf.v10i2.005>
- Otley, D. (2016). The measurement of organizational performance: A critical review. *International Journal of Operations & Production Management*, 34(1), 10-40.
- Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. *Journal of Operations Management*, 27(6), 518-533.
- Schilling, M. A. (2017). *Strategic management of technological innovation* (6th ed.). McGraw-Hill Education.
- Tarhini, A., Alalwan, A. A., & Rehman, M. (2017). Technology acceptance in emerging markets: Examining user acceptance of mobile banking technologies. *Journal of Financial Services Marketing*, 22(2), 117-131. <https://doi.org/10.1057/s41264-017-0034-4>
- Teece, D. J. (2018). Business models and dynamic capabilities: An integrative framework. *Journal of Strategic Management*, 39(7), 1750-1771. <https://doi.org/10.1002/jsm.v39i7.004>
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *Journal of Strategic Information Systems*, 28(2), 118-131. <https://doi.org/10.1016/j.sis.2019.01.003>
- World Economic Forum. (2023). *the future of jobs report 2023*. World Economic Forum.
- Zhang, X., Yang, X., & Chen, J. (2023). *Sustainability practices and competitive advantage: How environmental, social, and governance factors drive superior performance*. *Journal of Cleaner Production*, 265, 121652. <https://doi.org/10.1016/j.jclepro.2020.12165>.