DISRUPTIVE TECHNOLOGIES ON CORPORATE PROFITABILITY OF SELECTED LISTED DEPOSIT MONEY BANK ON NIGERIA EXCHANGE GROUP

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ABSTRACT

This study investigated the effect of disruptive technologies on the corporate profitability of five major listed financial institutions on the Nigeria Exchange Group. Disruptive technologies such as electronic transfer, digital lending platforms, and blockchain-based payments have rapidly transformed the financial services landscape in recent years. The study provides analysis of how these technologies are altering traditional banking models, enhancing operational efficiencies, and driving profitability. The research analyzes financial data from 2018-2022 for five top Nigerian banks listed on the Nigerian Exchange Group to assess how these technological disruptions have affected key profitability metrics like return on assets, net interest margins, and non-interest income. The five financial institutions selected for this study include Zenith Bank, Guaranty Trust Bank, First Bank of Nigeria, Access Bank, and United Bank for Africa. The findings indicate that the electronic transfer has a significant positive impact on the return on assets ratio in listed financial institution on Nigeria Exchange Group and digital lending platforms has a significant negative impact on the return on assets ratio in listed financial institution on the Nigeria Exchange Group. The study concluded that traditional banks need to strategically adapt to challenges from new digital channels by leveraging profitable technologies like electronic transfer while mitigating risks to income from threats to existing business lines. The study recommended that developing integrated digital ecosystems and partnerships can help strengthen this revenue channel and collaborating with fintech startups can help identify viable use cases and integration approaches to position themselves for this evolving area.

Key words: *Disruptive Technologies, Corporate Profitability and Listed Deposit Money Banks.*

1. INTRODUCTION

Disruptive technologies are innovations that significantly alter the way industries operate. They often displace established technologies and create new market leaders. These include advancements such as mobile banking, blockchain, artificial intelligence, and fintech solutions. Disruptive innovations such as mobile banking, digital payments, and financial technology (fintech) startups have fundamentally reshaped the competitive landscape, forcing

traditional banks to adapt their business models and strategies to remain profitable (Nwakaego & Nzewi, 2019). These technologies enhance efficiency, reduce costs, and improve customer experience, leading to a transformative impact on traditional banking practices. Corporate profitability is a crucial indicator of a company's financial health, typically measured through metrics like return on equity (ROE), net profit margin, and earnings per share (EPS). For banks, profitability is influenced by factors such as interest income, fees from services, operating expenses, and risk management.

In Nigeria, the adoption of these technologies by deposit money banks has been driven by the need to improve operational efficiency, enhance customer experience, and maintain competitiveness in an increasingly digital landscape (Okoye et al., 2021). The Nigeria Exchange Group, formerly known as the Nigerian Stock Exchange, hosts several listed banks that have embraced these technological advancements to varying degrees.

Nigeria's banking sector is one of the largest and most sophisticated in Africa. However, in recent years, the industry has faced significant disruption from the rise of mobile banking, digital payments, and the emergence of nimble fintech startups (Adeleye & Boso, 2016). These technological innovations have challenged the traditional banking models, forcing the established institutions to adapt. Globally the rise of disruptive technologies has had a significant effect on the corporate profitability. The effect of these disruptive technologies on corporate profitability remains a subject of debate. While some studies suggest that technological adoption leads to improved financial performance (Ezenwoke et al., 2019), others argue that the high implementation costs and rapidly changing nature of these technologies may initially strain profitability (Nwanko & Ajemunigbohun, 2021), While there has been substantial theoretical discussion about disruptive technologies and their potential benefits, empirical studies specifically investigating their effect on the profitability of Nigerian banks are scarce. Most research focuses on developed markets, leaving a gap in context-specific insights for Nigeria. Five of the country's largest listed financial institutions - Access Bank, Guaranty Trust Bank, United Bank for Africa, Zenith Bank, and Fidelity Bank - have been at the forefront of navigating this technological disruption (Adegbite & Machethe, 2020). These banks have had to grapple with the challenges posed by new digital competitors, changing customer preferences, and the need for significant technology investments - all while striving to maintain and grow their profitability.

The study was based on analyzing the financial report of these five largest listed banks from 2018 to 2022 .The study will explore the specific disruptive trends that have reshaped the

industry, analyze how the banks have adapted their strategies in response, and assess the overall impact on their financial performance and bottom line. The findings of this study will provide valuable insights into the future viability of traditional banking models in the face of continued technological disruption. To address these disruptive challenges, the five banks have pursued various strategic initiatives. Accelerating digital transformation through heavy investments in IT infrastructure, data analytics, and omnichannel capabilities. Forming strategic partnerships or acquiring stakes in promising fintech startups to leverage their innovative technologies. Diversifying revenue streams by developing new digital products and services beyond traditional banking. Optimizing branch networks and streamlining operations to reduce costs and improve efficiency and upskilling employees and reshaping organizational culture to be more agile and technologically adapt.

1.1 Objective

The main objectives of the study are to investigate the significant effect of electronic transfer, digital lending platform and block chain-based on the return on assets for selected listed Nigeria deposit money banks. Specifically, the study intends to:

1. ascertain the effect of electronic transfer on return on assets ratio in listed financial institution on the Nigeria Exchange Group.

2. determine the extent to which digital lending platforms affects return on assets ratio in listed financial institution on the Nigeria Exchange Group.

3. evaluate how Blockchain-based payment affects return on assets ratio in listed financial institution on the Nigeria Exchange Group.

1.2 Hypotheses

H_{o1}:   Electronic transfer has no significant effect on the return on assets ratio in listed financial institution on the Nigeria Exchange Group.

H_{o2}:   Digital lending platforms has no significant effect on the return on assets ratio in listed financial institution on the Nigeria Exchange Group.

H_{o3}:   Blockchain-based payments has no significant effect on the return on assets ratio in listed financial institution on the Nigeria Exchange Group.

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Concept of Disruptive Technologies

Disruptive technologies refer to innovations that significantly alter long-established industries, businesses and customer behaviors in ways that existing market participants typically fail to foresee or prepare for (Christensen & Raynor, 2003). Many analysts argue that over the past few years, we have witnessed unprecedented levels of technology disruption across multiple sectors driven by powerful forces like artificial intelligence, automation, blockchain, fifth-generation wireless networks (5G), and cloud computing. Disruptive technologies create new markets by either enabling new behaviors or serving the needs of existing market participants in more effective ways. For instance, the rise of electric vehicles promoted by Tesla introduced affordable battery-powered cars to the masses and challenged the traditions of incumbent automakers through superior technology and customer experience (Dyer-Whiteford & Kutz, 2021). Similarly, voice assistants led by Alexa and Siri mainstreamed artificial intelligence and natural language processing, reshaping how people interact with machines on a daily basis (Marr, 2021). Looking ahead from 2020 to 2023, experts anticipate several emerging technologies to grow significantly in influence and become hugely disruptive. A technology that seems poised for widespread disruption is autonomous vehicles (AVs). Major auto and tech companies like Tesla, GM, Waymo and Uber have been actively developing self-driving cars and trucks. If technology and regulatory hurdles are cleared, AVs could transform transportation by making it safer, more accessible and efficient (Fraedrich et al., 2019). This would disrupt the traditional taxi and trucking industries.

Augmented and virtual reality headsets also have the potential for widespread adoption and disruption over the next few years. As the technology improves, becomes more affordable and intuitive, AR/VR solutions could transform education, design, engineering, gaming, healthcare and more (Rauschnabel et al., 2021). This could challenge traditional delivery models across many sectors. Drones and delivery robots are another disruptive force gaining ground. Companies are exploring their potential for package and food delivery, medical payloads, environmental monitoring and more use cases (Mohammadi & Eklund, 2019). This could significantly alter logistics, retail and other domains. Blockchain technology is anticipated to gain strong enterprise acceptance by 2023 and enable new business models across industries. Companies are experimenting with blockchain to streamline supply chains, digital identity management, financial transactions, copyright protection, and more (Gomber

et al., 2018). This has the potential to reshape transactions and record-keeping across sectors. Cybersecurity is also an area that demands constant innovation to stay ahead of escalating threats. The integration of artificial intelligence, blockchain, and other emerging technologies promises to enhance security and privacy in fundamentally transformative ways (Burnap et al., 2020).

Over the next few years we are likely to witness exponential growth and disruption enabled by technologies like autonomous vehicles, augmented and virtual reality, drones, blockchain, and AI-powered cybersecurity solutions. Established incumbents across industries must embrace these innovations or risk obsolescence, while new market participants have a chance to leapfrog competition and define new business paradigms. However, challenges around technology, infrastructure, regulations, skills and social acceptance remain that could slow down or alter predicted disruption trajectories. Overall, the period from 2020 to 2023 promises to be one of unprecedented technological transformation.

2.1.2 Determinant of Disruptive Technologies

2.1.2.1 Electronic Transfer

Electronic transfer is sub function of mobile banking which refers to the process of moving data or funds from one entity to another using electronic means. Mobile banking has seen explosive adoption worldwide by allowing convenient account access from any smartphone (Jobst, 2022). Simple features like checking balances, transferring funds and paying bills drove initial popularity among digital natives (Saura et al., 2020). This can encompass various forms of transactions, including bank transfers, online payments, and the transfer of digital files. The rise of the internet and technological advancements have significantly facilitated electronic transfers, making them faster and more efficient compared to traditional methods. Superior user experience compared to traditional websites and branches helped build strong loyalty among frequent users (Chen & Bell, 2021).

Partnering with other financial institutions provided larger customer bases while collaborations with payment services boosted transaction volumes (Chakravorti & Tomlinson, 2020). Leveraging embedded locations and payment data through partnerships delivered contextual and personalized offers that increased cross-selling (Panhwar et al., 2022).Going forward, banks will look to embed financial capabilities into more messaging, e-commerce and lifestyle apps through APIs to meet users in their preferred digital habitats (European Commission, 2020). Biometric authentication and augmented reality are being

explored to further simplify and strengthen mobile security (Kakar et al., 2022). With 5G enabling richer immersive experiences, mobile is set to command the digital banking landscape by 2023 (Song et al., 2020).

2.1.2.2 Digital Lending Platform

Digital lending platforms have seen explosive growth in recent years by offering consumers and small businesses convenient access to credit (Song et al., 2020). These FinTech lenders utilize robust underwriting algorithms and data sources beyond traditional credit scores to efficiently process applications and disburse loans (Panhwar et al., 2022). A key factor in their success has been the ability to eliminate physical branches and personnel, keeping overhead costs very low. This allows such lenders to offer lower interest rates than traditional banks (Chen & Bell, 2021). Advanced data and machine learning techniques also help them better evaluate creditworthiness and risk (Kakar et al., 2022).

Scaling operations through smartphone apps and websites while maintaining high service levels is crucial. Partnerships with other financial and tech firms expand their reach into new customer segments (Chakravorti & Tomlinson, 2020). As more payment and financial lifestyle data becomes available due to open banking trends, digital lenders can improve their underwriting precision further (European Commission, 2020). Going forward, embedding such lending capabilities directly into e-commerce platforms, social networks or marketplaces could expose billions of users to instant credit (Jobst, 2022). Collaborations will also continue blurring lines between lending, banking, investments and insurance (Cong & Xiao, 2021). This convergence promises to further fuel the stellar growth of digital lending by 2023.

2.1.3 Blockchain-based payments

Blockchain technology has enabled the development of decentralized finance (DeFi) which aims to disintermediate financial intermediaries by building open access financial applications on public blockchains (Buntinx, 2020). DeFi leverages smart contracts to enable trustless and transparent transactions of lending's, borrowing and trading without centralized intermediaries. The total value locked in DeFi grew exponentially from $1 billion in 2020 to over $100 billion in 2021 (CFTC, 2021) indicating growing demand for disintermediated financial services. However, challenges around regulation, scalability and interoperability remain. It is projected that major developments around Ethereum 2.0 and interoperable blockchains like Polka dot and Cosmos will enhance scalability and usability of DeFi from 2022 (Bhutta, 2022). Widespread adoption may also happen if stablecoins integrate with

existing payment rails and offer bridge to traditional finance (SEC, 2023). Overall, DeFi is positioned to substantially disrupt legacy financial markets if technological and regulatory challenges are addressed in the coming years.

2.1.4 Corporate Profitability

Corporate profitability is a fundamental measure of a company's financial success and operational efficiency. It reflects an organization's capacity to generate earnings in excess of its expenses and costs over a given period. Profitability metrics are essential for various stakeholders, including investors, creditors, and management, to evaluate a company's performance and potential for sustainable growth (Smith et al., 2022). In the context of rapidly evolving markets and economic uncertainties, maintaining and improving profitability has become increasingly challenging for corporations across various sectors.

2.1.5 Return on Assets

Return on Assets (ROA) is a key financial ratio used to assess a company's profitability relative to its total assets. It serves as an indicator of how efficiently a company utilizes its assets to generate profits. ROA is calculated by dividing net income by total assets, providing valuable insights into management's effectiveness in deploying resources to produce earnings (Johnson & Lee, 2021). A higher ROA generally indicates better asset utilization and overall profitability, making it a crucial metric for investors and analysts in evaluating a company's financial health and operational efficiency.

2.1.6 Financial Institution

Financial institutions like banks, hedge funds, and asset management firms are facing threats to their traditional business models from innovative technologies disrupting the financial sector (Ernst & Young, 2020). Decentralized finance is enabling peer-to-peer transactions without intermediaries while technologies like AI and blockchain are automating processes (World Economic Forum, 2021). To adapt, many financial institutions are embracing digital transformations and partnerships. There is growing investment in blockchain to build centralized services on public networks and development of digital assets (Forbes, 2022). Data analytics capabilities are also being enhanced through AI to improve risk management, KYC checks and portfolio returns (McKinsey, 2022). Looking ahead, the role of financial institutions may bring transition from product-selling intermediaries to advisors and enablers of new financial tools and services built on their platforms (OECD, 2023). Successful

innovators will leverage emerging technologies while mitigating risks to upgrade operations and adapt to changing customer demands.

2.2 Theoretical Framework

2.2.1 Disruptive Innovation Theory

The disruptive innovation theory was developed by Clayton M. Christensen, a professor at the Harvard Business School, in the mid-1990s. The theory suggests that established companies often struggle to adapt to technological changes and new market entrants that offer products or services that are initially simpler, more affordable, and more accessible than the existing market offerings. Clayton M. Christensen introduced the concept of disruptive innovation in his 1997 book, "The Innovator's Dilemma." Christensen argued that established companies are often too focused on improving their existing products and services to meet the needs of their most profitable customers, leaving them vulnerable to new entrants that can offer more affordable and accessible options. Christensen's disruptive innovation theory has had a significant impact on our understanding of technological change and its impact on businesses. The theory has been applied to a wide range of industries, including the financial sector, and has helped to explain the rise of new technologies and business models that have disrupted traditional industries. In the context of the impact of disruptive technologies on the corporate profitability of listed financial institutions on the Nigeria Exchange Group, the disruptive innovation theory can be used to understand how new financial technologies, such as mobile banking, digital lending platforms, and blockchain-based payment systems, have the potential to disrupt the traditional banking industry.

The disruptive innovation theory is highly relevant to the topic of the impact of disruptive technologies on the corporate profitability of listed financial institution on the Nigeria Exchange Group. As new financial technologies continue to emerge and gain traction, they have the potential to disrupt the traditional banking industry in Nigeria, leading to changes in customer behavior, market share, and profitability. For example, the rise of mobile banking in Nigeria has allowed unbanked and underbanked individuals to access financial services more easily and affordably than traditional brick-and-mortar banks. This has the potential to erode the market share and profitability of listed financial institutions on the Nigeria Exchange Group, as they struggle to adapt to the changing market conditions. Similarly, the development of digital lending platforms and blockchain-based payment systems can also disrupt the traditional banking industry, as they offer more convenient and transparent financial services that may be more appealing to consumers.

2.2.2 Resource-Based View (RBV) Theory

The Resource-Based View (RBV) theory is a strategic management framework that focuses on the internal resources and capabilities of a firm as the primary drivers of its competitive advantage and performance. The theory suggests that firms can achieve sustainable competitive advantage by developing and deploying valuable, rare, inimitable, and non-substitutable (VRIN) resources and capabilities. The Resource-Based View (RBV) theory was developed in the late 1980s and early 1990s by several scholars, including Birger Wernerfelt, Jay Barney, and Kathleen Conner. The theory builds on the work of earlier scholars, such as Edith Penrose and the resource-based perspective of the firm. The Resource-Based View (RBV) theory has made significant contributions to the field of strategic management by providing a framework for understanding how firms can leverage their internal resources and capabilities to achieve sustainable competitive advantage. The theory has been widely applied across various industries, including the financial sector. In the context of the impact of disruptive technologies on the corporate profitability of listed financial institutions on the Nigeria Exchange Group, the Resource-Based View (RBV) theory can be used to understand how financial institutions can leverage their unique resources and capabilities to respond to the challenges posed by disruptive technologies.

The Resource-Based View (RBV) theory is highly relevant to the topic of the impact of disruptive technologies on the corporate profitability of listed financial institutions on the Nigeria Exchange Group. As disruptive technologies continue to disrupt the traditional banking industry, financial institutions will need to rely on their unique resources and capabilities to maintain their competitive edge and profitability. For example, listed financial institutions on the Nigeria Exchange Group may have established customer relationships, brand recognition, and regulatory compliance expertise, which can be leveraged to respond to the challenges posed by new financial technologies. Additionally, the ability to quickly adapt and innovate can be a critical resource in the face of disruptive changes. By applying the Resource-Based View (RBV) theory, listed financial institutions on the Nigeria Exchange Group can identify and develop the resources and capabilities that will be most valuable in the face of disruptive technologies, and can use these resources to maintain their profitability and market share.

The disruptive innovation theory and the resource-based view (RBV) theory can be effectively linked to provide a comprehensive understanding of the impact of disruptive

technologies on the corporate profitability of listed financial institutions on the Nigeria Exchange Group. The disruptive innovation theory explains how new entrants with simpler, more affordable, and more accessible products or services can disrupt established players, while the RBV theory suggests that firms can achieve sustainable competitive advantage by developing and deploying valuable, rare, inimitable, and non-substitutable resources and capabilities. By applying both theories, listed financial institutions on the Nigeria Exchange Group can identify and develop the resources and capabilities needed to respond to disruptive changes, such as customer relationships, brand recognition, regulatory expertise, and the ability to innovate quickly. This can help these institutions leverage their unique strengths to maintain their competitive edge and profitability in the face of disruption from new financial technologies.

3. MATERIAL AND METHODS

The study employed *ex-post facto* research design, the area of study DMBs in Nigeria, secondary data were used and obtained from annual reports of deposit money bank in Nigeria for a period between 2018 to 2022. The population of the study focused on five listed deposit money banks on the Nigeria Exchange Group. The researcher sampled the three listed deposit money bank on the Nigeria Exchange Group. Data generated for the study were collated and analyzed using Panel Least Square Regression Model and operated with E-Views 10. OLS diagnostics tests were used in the multilinearity test.

The model shows the functional and conceptual effect of the dependent variable and the independent variables. The dependent variable is corporate profitability (Returns on Asset) while the independent variable is Disruptive Technologies (mobile banking, Digital lending platforms and Blockchain-base payment). The study expects that Fintech will aid in corporate profitability; Matinfard and Khavari (2019) is used in determining the effect of the impact of Fintech adoption on corporate profitability. This is shown below as thus: $Y = f(X) + \mu$…..Eqn1.

The above model could be re-constructed as thus;

Matinfard and Khavari (2019): $ROA = \beta_0 + \beta_1 ET + \beta_2 DLP + \beta_3 BBP + \varepsilon$………Eqn 2.

The modified functional model employed for the study is shown below as thus:

$ROA = F (ET, DLP, BBP)$

The Econometric Form of the Regression Proposed for the study is shown below as thus:

$ROA_{it} = \beta_0 + \beta_1 MB_{it} + \beta_2 DLP_{it} + \beta_3 BBP_{it} + \mu$……..Eqn 3.

The above model could be re-constructed as thus;

$Y = \beta_o + \beta_1 X_1 + \mu$

$ROA_{it} = \beta_0 + \beta_1 ET_{it} + \mu_{it}.$ -   -   - Eqn 4.

$ROA_{it} = \beta_0 + \beta_1 DLP_{it} + \mu_{it}.$ -   -   - Eqn 5.

$ROA_{it} = \beta_0 + \beta_1 BBP_{it} + \mu_{it}.$ -   -   - Eqn 6

Where:

ET = Electronic transfer

DLP = Digital Lending Platforms

BBP = Blockchain-base Payment

ROA = Returns on Asset

μ = Stochastic Disturbance (Error Term)

t = Time Variant for the Study

$\beta0$ = Intercept of Relationship in the Model Constant

$\beta1, \beta2, \beta3, \beta4$ = are the Coefficients of the Independent Variables

The decision was based on 5% (0.05) level of significance. The null hypothesis (Ho) will be accepted, if the Prob (F-statistic) value is greater (>) than the stated 5% level of significance, otherwise reject.

The theoretical (a priori) expectations regarding the signs of the coefficients are as follows: $\beta o > 0$, $\beta1 > 0$. It is anticipated that the coefficients associated with Disruptive Technologies will have a positive sign. This expectation is based on the belief that an increase in the level of corporate profitability will correspondingly enhance the effects of listed deposit money bank on the Nigeria Exchange Group.

4. RESULT AND DISCUSSIONS

Table 1 Descriptive Statistics

| | ET | DLP | BBP | R0A |
	MB	DLP	BBP	R0A
Mean	0.406880	0.115320	0.648880	0.011800
Median	0.401000	0.108700	0.648900	0.011600
Maximum	0.464600	0.147000	0.708200	0.016900
Minimum	0.356200	0.094000	0.586800	0.007200
Std. Dev.	0.038322	0.018289	0.042116	0.003240
Skewness	0.226641	0.738876	-0.073524	0.211944
Kurtosis	1.843410	2.371114	1.924027	
Jarque-Bera	1.607465	2.686720	1.228481	
Probability	0.447655	0.260967	0.541052	
Sum	10.17200	2.883000	16.22200	0.295000
Sum Sq. Dev.	0.035246	0.008028	0.042571	0.000252
Observations	25	25	25	25

Table 1 shows descriptive statistics for 4 variables - ET, DLP, BBP and R0A - across 25 observations from 2018 to 2022. The mean, median and range can help understand central tendency and dispersion for each variable. ET has the highest mean of 0.406880 while R0A is the lowest at 0.011800. DLP has the narrowest range between its maximum and minimum values. Standard deviation measures how far values are spread from the mean. DLP has the lowest standard deviation of 0.018289, indicating values are clustered more closely to the mean compared to other variables. Skewness and kurtosis describe the shape and peakedness of distributions. Positive skewness for ET and DLP and negative for BBP suggest right-tail distributions. Kurtosis above 3 for all variables shows more outliers than normal distribution. The Jarque-Bera statistic tests whether data has a normal distribution at the 5% level of significance. With probabilities above 0.05, the null hypothesis of normality cannot be rejected for any variable. Sum and sum of squared deviations are useful for other analyses like regression. Finally, multicollinearity between independent variables can impact regression results. Variance Inflation Factors (VIFs) greater than 10 typically indicate multicollinearity but here centered VIFs are all under 2, within the acceptable range. This analysis provides a statistical overview and baseline understanding of variables before further modeling or hypothesis testing.

Table 2 Muti-colinearity

Variance Inflation Factors

Date: 08/08/24   Time: 19:19

Sample: 2018 2022

Included observations: 25

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	6.28E-05	581.8297	NA
ET	0.000123	190.7674	1.610869
DLP	0.000469	59.10788	1.393600
BBP	7.51E-05	294.2573	1.185274

Table 2 shows variance inflation factors (VIFs) to detect multicollinearity among independent variables C, ET, DLP and BBP used in regression models. The centered VIF for each variable is below the threshold of 10, which is the typical level used as a cutoff to indicate problematic multicollinearity. C has the highest uncentered VIF of 581.8297 but its centered VIF cannot be calculated since it is a constant. ET has the next highest uncentered VIF of 190.7674 while its centered VIF of 1.610869 is well below the threshold of 10, meaning it does not exhibit strong multicollinearity with other variables after accounting for the effects of other independent variables. Similarly, the centered VIFs of 1.393600 for DLP and 1.185274 for BBP are below 10, suggesting multicollinearity is not a concern within these variables according to the standard 5% level of significance. In summary, the Variance Inflation Factors indicate multicollinearity is unlikely to impact regression analyses with these independent variables.

4.2 Test of Hypotheses

The Panel Least Squares was used to address heteroskedasticity in the error terms of the regression model, while estimating the regression coefficients for hypotheses testing (Egbunike, Ogbodo & Ojimadu, 2019). The use of the panel data model was because of the unobserved, time-invariant characteristics of the individual firms that are correlated with the explanatory variables, which need to be accounted for to obtain unbiased estimates of the impact of disruptive technologies on corporate profitability.

Table 3 Panel Model Regression

Dependent Variable: R0A

Method: Panel Least Squares

Date: 08/08/24   Time: 19:02

Sample: 2018 2022

Periods included: 5

Cross-sections included: 5

Total panel (balanced) observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.018481	0.007925	2.331801	0.0297
ET	0.051553	0.011106	4.641775	0.0001
DLP	-0.174445	0.021645	-8.059297	0.0000
BBP	-0.011619	0.008669	-1.340361	0.1945

R-squared	0.775001	Mean dependent var	0.011800
Adjusted R-squared	0.742858	S.D. dependent var	0.003240
S.E. of regression	0.001643	Akaike info criterion	-9.839137
Sum squared resid	5.67E-05	Schwarz criterion	-9.644117
Log likelihood	126.9892	Hannan-Quinn criter.	-9.785047
F-statistic	24.11127	Durbin-Watson stat	3.933505
Prob(F-statistic)	0.000001		

Table 3 shows results of a panel regression model with R0A as the dependent variable and ET, DLP, BBP and a constant as independent variable. All coefficients except BBP have p-values below 0.05, meaning they are statistically significant at the 5% level. ET and DLP have positive and negative coefficients respectively, indicating their direction of the effect on R0A. The R-squared of 0.775001 means 77.5% of variation in R0A is explained by the model. The adjusted R-squared of 0.742858 adjusts for the number of explanatory terms and number of observations to prevent overfitting. Both R-squared values are relatively high, indicating the model has a reasonably good fit to the data.

The Durbin-Watson stat of 3.933505 is very close to 2, suggesting the residuals are uncorrelated and there is no autocorrelation violating the independence assumption of regression. The panel regression results show the model fits the data well in explaining R0A

with the selected variables according to the 5% level of significance, and autocorrelation is not evident based on the Durbin-Watson statistic.

4.2.1 Hypothesis 1

H_{o1}:   Electronic transfer has no significant effect on the return on assets ratio in listed financial institution on the Nigeria Exchange Group.

Electronic transfer has no significant effect on the return on assets ratio in listed financial institution on the Nigeria Exchange Group. Given the coefficient of 0.051553 for ET, a 1% increase in ROA would be associated with a 0.051553% increase in electronic transfer. This effect is positive and statistically significant at the 1% level (p-value of 0.0001). Therefore, this hypothesis can be rejected.

4.2.2 Hypothesis 2

H_{o2}:   Digital lending platforms has no significant effect on the return on assets ratio in listed financial institution on the Nigeria Exchange Group.

Digital lending platforms has no significant effect on the return on assets ratio in listed financial institution. Given the coefficient of -0.174445 for DLP, a 1% increase in ROA would be associated with a 0.174445% decrease in digital lending platforms. This effect is negative and statistically significant at the 1% level (p-value of 0.0000). Therefore, this hypothesis can be rejected.

4.2.3 Hypothesis 3

H_{o3}:   Blockchain-based payments has no significant effect on the return on assets ratio in listed financial institution on the Nigeria Exchange Group.

Blockchain-based payments has no significant effect on the return on assets ratio in listed financial institution on the Nigeria Exchange Group. Given the coefficient of -0.011619 for BBP, a 1% increase in ROA would be associated with a 0.011619% decrease in blockchain-based payments. However, this effect is not statistically significant at the 1% level (p-value of 0.1945). Therefore, this hypothesis cannot be rejected.

The results of the regression analysis provide several key findings regarding the effect of disruptive technologies on the corporate profitability of listed financial institutions on the Nigeria Exchange Group. Electronic transfer was found to have a positive and statistically significant effect on return on assets, suggesting that greater adoption of electronic transfer

services enhances profitability. This could be because electronic transfer lower costs and widen access to customers, increasing fee revenues that boost margins. However, digital lending platforms were shown to reduce profitability. While FinTech lenders charge lower interest rates, their proliferation has intensified competition in lending markets and put downward pressure on net interest incomes for banks.

Blockchain-based payments did not demonstrate a statistically significant effect on returns. This nascent technology has seen limited adoption in Nigeria so far. While it holds promise for reducing transaction times and costs, its deflationary impact on intermediation revenues makes the direction of influence unclear. Established banks also face challenges integrating decentralized systems with legacy infrastructure. Overall, the results indicate that disruptive technologies present a mixed impact, with some new digital channels helping enhance profitability through new streams even as they can threaten existing business lines. Careful strategic adaptations will be needed to leverage benefits while mitigating risks to overall performance.

5. CONCLUSION AND RECOMMENDATIONS

Based on the analysis conducted, it can be concluded that disruptive technologies have had a mixed effect on the corporate profitability of listed financial institutions on the Nigeria Exchange Group. While the adoption of electronic transfer was found to enhance profitability by lowering costs and expanding customer reach, digital lending platforms have put downward pressure on margins by intensifying competition in lending. Blockchain-based payments do not seem to have significantly influenced profitability as adoption remains limited in Nigeria currently. Overall, traditional banks will need to strategically adapt to challenges from new digital channels by leveraging profitable technologies like electronic transfer while mitigating risks to income from threats to existing business lines. With careful innovation that balances opportunities and risks, incumbents can maintain competitiveness moving forward as the financial sector undergoes continued technological transformation.

Based on the findings and conclusions of the study, the following are the recommendations:

1. Listed financial institutions should continue investing in and promoting electronic transfer banking services to capitalize on its ability to boost profitability through lower costs and increased customer access. Developing integrated digital ecosystems and partnerships can help strengthen this revenue channel.

2. Strategies are needed to mitigate the downward pressure on margins from digital lending platforms. Options include offering competitive loan products, integrating lending capabilities into other digital touch points, and leveraging big data insights to enhance risk assessments and pricing.

3. While blockchain-based payments did not significantly affect profitability yet, financial institutions should monitor adoption trends and consider pilot programs. Collaborating with fintech startups can help identify viable use cases and integration approaches to position themselves for this evolving area.

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