

FINTECH OPERATIONS AND BANKS' PROFITABILITY

ABSTRACT

How FinTechs affect the banks' profit was explored in this study. The intent of this research was to see how the advancement of FinTechs has affected banking performance in Nigeria. Annual transaction volumes from digital payment platforms, digital banking platforms, digital lending and loans platforms, and digital investment and crowd contributory platforms were used to achieve this, while profitability in Nigeria was measured using the aggregate ROA for all deposit money banks (DMBs). For a period of 11 years, from 2010 to 2020, secondary data on the selected FinTech platforms and banks was acquired. The ordinary least square (OLS) regression estimation technique was utilized for data analysis, with diagnostic tests such as ADF for unit root detection, Jarque-Bera for data normality, and Relation matrix for suspected multicollinearity being employed to assess the data's and model's fitness. The F-statistics of 1.567905, Probability of 0.009181, and an Adjusted R^2 value of 74 percent indicated that the model was fit for prediction. The Durbin Watson score of 1.98 demonstrated that there was no evidence of autorelation. Finally, due to the increased amount of transactions flowing through these technologies in conjunction with banks, the regression result demonstrated that the introduction of FinTechs has greatly boosted the banks' profit. Because of their collaboration with FinTech companies that provide these platforms for bank clients, Nigerian banks have reaped enormous benefits from financial innovations. As a result of this research, banks should guarantee that they take advantage of financial innovations to immediately boost their profitability by reaching out to the unbanked. These FinTechs make it possible for banking to be initiated and completed without emphases on physical appearance.

Key Word: FinTechs, Profitability, Digital Payments, Digital Banking Digital Lending, Digital Investments

1.1 INTRODUCTION

Some economic and banking reforms in particular have changed our perception about the financial system as a whole (see Ebiringa, Onuorah & Obi, 2014). In the banks, clients' perceptions of business transactions, payments, and money transfers have evolved as a result of the rise of financial techs (FinTechs) in recent years. According to Ekanem, Alhaji, Adeniyi, and Adeogun (2017), the corporate world has seen a significant increase in digital innovations, particularly in FinTech start-up formation and market volume. Traditional actors in the sector, such as financial institutions, have only recently begun to participate in new technological advances, according to Asidok and Michael (2018). Because many banks, aside from the popular ones, continue to provide old-fashioned, expensive, and inconvenient services (Asidok & Michael, 2018), FinTech firms will increasingly take over some of traditional banks' core

functions (Li, Spigt, & Swinkels, 2017). In other words, there is likely to be a replacement effect with FinTech enterprises, where banks will lose some of their commercial activity. There are a few exceptions: (a) Cumming and Amu and Nathaniel (2016), who use a global sample of enterprises to analyze the pattern of venture capital investment in FinTech.

The hypothesis is tested with data from DMBs in Nigeria. Nigeria is being considered because it stands out among other African nations in terms of FinTech business growth, which has been tremendous. This is seen in Figure 1. Nigeria is a fascinating case study for examining the effects of climate change of FinTech on bank performance, especially in the emerging market environment, where less is known about FinTech's role in affecting the banking industry. Using data from ten publicly traded deposit money institutions, our panel model will look at how FinTech entities hike the overall financial well-being of the banks in Nigeria. Only a few researches for this subject matter have been produced.

Given the banks' fast developments and the advent of FinTech startups in Nigeria, with highly innovative FinTechs for national and cross-border payments, the importance of examining the effects of these innovations on traditional banks' performance cannot be overstated. Previously, traditional banks handled the amounts of transactions that now move via these FinTech enterprises and FinTechs. The earnings produced by traditional institutions are expected to either shrink when these transactions are taken over by FinTech firms, or increase if a profit-sharing model is adopted- thereby giving shareholder more returns (Onuorah & Chigbu, 2013). In the instance of Nigeria, however, no research into the impact of FinTechs on profitability has been conducted. It is due to this premise that we have investigated the impact of FinTechs on the banks' profit.

2.0 LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 FinTechs (FinTech)

FinTechs, according to Pyun, Scruggs, and Nam (2016), are techs-driven financial systems that produce products, services, fund techs, or new business models and can affect monetary stability, financial system stability funds, or smoothness, security, and reliability of payment systems.

2.1.2 Types of Financial Techs

According to Susanne and Janos (2016), digital-based financial services include:

Payment Channel System: an electronic service that serves to replace banknotes and demand deposits as a mode of payment.

Digital Banking: is a type of banking that makes use of digital techs to satisfy the demands of its clients.

P2P lending: is a type of financial business that uses digital techs to connect those who need money with others who are prepared to lend it to them.

Online/Digital Insurance: uses digital techs to provide clients with insurance services such as premium comparison services (digital consultants) and agency services (digital marketers) via websites or mobile applications.

Crowdfunding: is a type of fundraising that takes place on a website or through other digital techs for investment and social causes.



Fig 1:

Source: https://www.astrikosconsulting.com/home/fin_tech

Internet Financial Transactions:

This entails the conduct of traditional banking and non-banking financial activities through the internet. Internet financial transactions, by decreasing traditional banks' overhead expenses, can theoretically provide clients better interest rates on deposits than traditional banking's average rate. According to Mabrouk and Mamoghli (2017), banks frequently use the Internet to disseminate information about financial products to the general public, to replace business conducted at branch offices, which eliminates the need to open additional branches, and to provide more efficient service to consumers. Internet banking services offer a more convenient

way for clients to handle their accounts, including bill payment, mortgage and auto loan searches, credit card applications, and finding the nearest ATM or branch location. Several Internet banks now provide 24-hour phone support, allowing clients to speak with bank professionals directly about their needs. Internet banking has the drawbacks of being vulnerable to internet fraud, network outages, and malware infection. According to Mabrouk and Mamoghli (2017), banks frequently use the Internet to disseminate information about financial products to the general public, to replace business conducted at branch offices, which eliminates the need to open additional branches, and to provide more efficient service to consumers. Internet banking services offer a more convenient way for clients to handle their accounts, including bill payment, mortgage and auto loan searches, credit card applications, and finding the nearest ATM or branch location. Several Internet banks now provide 24-hour phone support, allowing clients to speak with bank professionals directly about their needs. Internet banking has the drawbacks of being vulnerable to internet fraud, network outages, and malware infection.

Telephone Banking

Telephone banking is a banking invention that allows clients to do banking over the phone. It can be thought of as a type of remote or virtual banking, in which bank clients can conduct retail banking by dialing a telephone or mobile communication unit that is connected to a bank's system via Automated Voice Response (ABR) techs (Domeher, Frimpong&Appiah, 2015). The client must first be authenticated via a numeric or vocal password, or through security questions answered by a live representative at a center or branch, in order to ensure the system's security. It provides practically all account balance information, standing orders, ordering of check books, and change of address operations, with the exception of cash dispensing in the form of deposits and withdrawals. In addition to the self-service activities mentioned previously, telephone banking agents are typically trained to perform tasks that were previously only available at branch locations.

Electronic Money Movement through POS

An EFTPOS, according to DeYoung, Lang, and Nolle (2017), is an online arrangement that allows clients to transfer money directly from their accounts to a merchant's account after making purchases (at purchase points). An EFTPOS An electronic money movement is initiated via a debit card, resulting in greater banking efficiency. EFTPOS is used to support clients' shopping payment conditions as an alternative to bookkeeping chores in handling cheque and cash withdrawals for purchases. Furthermore, the system continued to function even after regular

banking hours, allowing the bank to maintain efficiency even after regular banking hours. Clients save time and energy by not having to go to branches or ATMs for cash withdrawals, which can be put to better use in other ways (Oseigbu & Onuorah, 2011).

In recent years, however, the usage of POS for electronic money movement in Nigeria has taken on a new dimension. FinTech companies like O-Pay and Monie-Point, Paystack, Paydirect, and others have carved out a niche for themselves by bringing clients closer to the usual banking process of cash deposit and withdrawal. These businesses have agents in every corner of the country, including rural areas, bringing services to the unbanked.

2.1.3 Measuring Profitability

Profitability, according to Llewellyn (2019), is a measure of an entity's success in achieving its objectives. Measures of how an entity generates revenue by utilizing its resources. To this intent, performance is defined as the ratio of revenues to available resources. Some financial measurements include total sales revenue, profitability, and return on assets. Performance can be measured using both monetary and non-monetary criteria (Lawrence, 2018). Performance may include measurements such as profits after taxes, market share, and client happiness to this intent. Because the agency outlets are handled by independent agents, Lerner and Tufano (2019) observe that agency banking allows banks to save money on the floor for banking halls and on payroll. Additionally, agency banking hours may be longer, resulting in more transactions.

The progress of a DMB can be measured in terms of its ROA (Cherotich, Sang, Shisia&Mutung'u, 2015). The success of a DMB is influenced by a number of outside factors that operate in the bank's surroundings. Because the banking business operates in a turbulent environment, banks must adapt in order to survive. It is pertinent to pinpoint that banks' performance is usually tied to what is reported as profit after tax (PAT) and from which dividend is paid to their investors (see Onuorah & Chigbu, 2013). According to Boot and Thakor (2015), banks must set appropriate measures for achieving performance goals. Financial innovations, according to Sana, Mohammad, and Hassan (2016), is able to improve the well-being of financial institutions. Total revenue, client happiness, and market share are among metrics that commercial banks might use to evaluate their performance. One of the overarching goals of profit-driven companies is to make more money in order to assure their long-term survival and growth. Financial rise in the banks result in better goods and service delivery. A higher ROInterprets that the firm is converting its resources effectively, according to Malhotra and Singh (2019).

2.2 Theoretical Framework

The following theories will be used in this research: the theory of innovation and the innovation diffusion theory.

2.2.1 Theory of Innovations

Independent entrepreneurs, according to Schumpeter, could create profit opportunities. This, to Schumpeter was particularly noticeable among independent innovators or persons working in R&D engineering. As a result of the unusual profits, new groups of imitators would form, lowering revenues as a result of the innovation. However, Schumpeter idealized that before equilibrium could be achieved, a new set of innovations would emerge, resulting in a new business cycle. As a result, something new is being invented in the economy at any given time, and the sector is not immune. The primary concept of this theory is that entrepreneurship contributes to identifying new opportunities and generating usefulness in the economy. In addition, the author asserts that there is a distinction to be made between invention and innovation. To this intent, Schumpeter considers invention to be the pursuit of new dimensions that may be adopted by entrepreneurs, whereas innovations are viewed as the forces that drive growth in such system. The brave individuals who have the enthusiasm to take risks by self-will are said to seek out innovations, according to this viewpoint. According to Schumpeter, innovations are always occurring in the industry, and institutions must be aware of them.

2.2.2 The Innovation Diffusion:

This theory aims to explain how innovations spread within a company. According to Rogers, a number of factors contribute to the spread of inventions from one location to another. For example, if the new innovation has a relative benefit over existing tools, it will be considered an enhancement and may be embraced throughout the entity. In addition, the compatibility of the innovations with existing tools and procedures is critical, as those that are compatible are more easily adopted. Innovations are also judged on their ease of use, if they can be tested before being implemented fully, and whether their inputs and outputs are easily assessed. It's vital to note that simplicity of use is considered subjective because no one's skill is the same. Because of the disparities in operations, diffusions across departments of an entity may not be possible. This idea is important because it explains how innovation spreads from one sector of the economy to another, or from one department within an entity to another.

2.3 Empirical Framework

Lerner and Tufano (2019) looked into the association between financial innovations and growth of bank. FinTechs such as venture capital, equity funds, mutual and exchange traded funds, and securitization, according to the study's conclusions, helps to expand financial markets and improve economic growth. Banks, on the other hand, would make less money from transaction fees as a result of this.

Financial techs developments, according to Abaenewe, Ogbulu, and Ndugbu (2018), have had a favorable impact on commercial banks' return on equity in Nigeria. They honed in on electronic banking, emphasizing the fact that more client transactions are tracked, resulting in higher transaction fees and thus more revenues. This is because these transactions have been linked to banks, from which charges are directly extracted and divided between banks and FinTech companies.

In Adaora, Jisike, and Amalachukwu (2018) the effect of FinTechs on performance was explored. This is consistent with banks passing risk management benefits on to corporate borrowers, according to the authors, but not with alternative routes via which credit derivative use may affect loan pricing. They discovered that, while risk management level had not changed, banks had not reaped considerable benefits from financial techs adoption.

The association between FinTechs innovation and the creation of unique competitive positions in Australian retail banking was investigated by Roberts and Amit (2016). They found out that FinTechs and creative activity had a core negative impact on banks' current performance.

From 2005 to 2015, Arnaboldi and Rossignoli (2015) looked at the determining indicators of finTech innovation in quoted European and US commercial banks. They discovered that innovation of financial products is prevalent in both Europe and U.S, but that it has decreased since 2005. Not only are banks creating fewer categories, but are also innovating less. When banks control a greater share in the less-concentrated market and more efficient banking systems, they possess a competitive advantage that drives innovation. The report also portrays that the emergence of FinTechs has led to a significant improvement in profitability.

3.0 RESEARCH METHODOLOGY

A focus on DMBs has been made across banks just to check the influence of FinTechs on bank profit. FinTechs such as digital payment techs, digital banking techs, digital lending techs, and digital investment techs have all gained traction. In this study, the ROA is utilized to determine the banks' profit (ROA). Secondary data was acquired from yearly reports of selected Nigerian banks, and ex post facto design was used. The data was analyzed using the Panel Least Square (PLS) regression estimation method. All of the specified deposit money banks were employed for this study, and the data was analyzed utilizing the ordinary least square (OLS) regression estimate approach.

Model Specification:

$$AROA = \alpha_0 + \beta_1 DPTC + \beta_2 DBTC + \beta_3 DLTC + \beta_4 DITC + \epsilon_i$$

Where:

AROA: Average return on assets

DPTC: Digital payments transaction counts for the year 2020

DBTC: Digital bank transaction counts for the years 2020

DLTC: Digital landing and loan transaction counts for the years 2020

DITC: Digital investments and crowd funding transaction counts for the years 2020

α_0 : a constant, equals the value of Y when the value of X = 0

β : coefficient of the independent variables

ϵ_i : the error term

4.0 PRESENTATION OF DATA, RESULTS AND DISCUSSION

4.1 Data Presentation and Analysis

Table 1: Data on Selected Variables

YEARS	AROA	DPTC	DBTC	DLTC	DITC
	A:B	No. (000)	No. (000)	No. (000)	No. (000)
2010	0.2157	12,263,213	24,526,426	1,350,951	5,450,317
2011	0.2194	21,324,966	42,649,932	2,433,288	9,477,763
2012	0.2811	39,852,653	79,705,306	3,136,871	17,712,290
2013	0.2574	61,256,846	122,513,692	8,675,795	27,225,265
2014	0.5068	83,655,236	167,310,472	11,540,315	37,180,105
2016	0.2512	154,865,236	309,730,472	96,486,981	68,828,994
2016	0.2356	175,362,412	350,724,824	153,816,549	77,938,850
2017	0.3216	189,253,622	378,507,244	252,338,163	84,112,721
2018	0.2183	215,453,566	430,907,132	287,271,421	95,757,140
2019	0.1910	261,523,633	523,047,266	348,698,177	116,232,726
2020	0.3391	274,653,211	549,306,422	366,204,281	122,068,094

Sources: McKinsey FinTech Database, Panorama Global Banking Pools

Table 2: Descriptive Statistics

	AROA	DPTC	DBTC	DLTC	DITC
Mean	0.276102	1.35E+08	2.71E+08	1.81E+08	60180388
Median	0.251175	1.55E+08	3.10E+08	2.06E+08	68828994
Maximum	0.506812	2.75E+08	5.49E+08	3.66E+08	1.22E+08
Minimum	0.190975	12263213	24526426	16350951	5450317.
Std. Dev.	0.089071	0.526333	1.92E+08	1.28E+08	0.253669
Skewness	1.680506	0.080194	0.080194	0.080194	0.080194
Kurtosis	5.144273	1.558974	1.558974	1.558974	1.558974
Jarque-Bera	5.648754	22.83229	7.417111	10.94475	7.415332
Probability	0.059346	0.059811	0.064513	0.054201	0.084535
Sum	3.037125	1.49E+09	2.98E+09	1.99E+09	6.62E+08
Sum Sq. Dev.	0.079337	9.21E+16	3.68E+17	1.64E+17	1.82E+16
Observations	11	11	11	11	11

Source: Eviews 9.0 Output, 2021

From the descriptive statistics above, the average AROA for banks throughout the study period is approximately 28% with a maximum AROA of approximately 51% recorded in 2014 as shown on Table 1, and a minimum AROA of 19% recorded in 2019 as shown on Table 1. For digital payment techs transaction counts, the average DPTC is 135.4 million transactions, while with a steady increase from 12.3 billion payment transactions in 2010 to 276.7 billion payment transactions in 2020 as shown on Table 1. For Digital banking transaction counts, the average DBTC for the study period is 270.8 billion transactions, with a minimum of 24.5 billion banking in 2010 and a maximum of 549.3 billion transactions in 2020 as shown on Table 1. For digital

lending transactions, the average volume of lending transactions through FinTechs was 139.3 billion for the study period selected. Furthermore, Digital lending rose from 1.4 billion in 2010 to 366.2 billion in 2020. Finally, digital investments and crowd funding platforms received a whopping average of 60.2 billion transactions for the period under review. This started from a total of 5.5 billion in 2010 to 122.1 billion in 2020.

4.2 Unit Root Test (Augmented Dicker-Fuller)

Table 3 Unit Root Test Result

Data Series	Augmented Dicker-Fuller (ADF)	Test Critical Values @ 5% (TCV)	Probability of ADF
AROA	5.484154	2.412365	0.0000
DPTC	4.827807	2.412365	0.0001
DBTC	5.085790	2.412365	0.0000
DLTC	3.159088	2.891234	0.0255
DITC	7.313629	2.412365	0.0000

Source: Author's Computation using Eviews 9.0

The ADF test statistics for all of the selected variables can be seen to be larger than the test critical values, and each variable revealed the absence of root at the 5% significance, according to what is given on Table 3. As a result, we refuse the null hypothesis.

4.3 Multi-Collinearity (Relation Matrix)

Table 4 Relation Matrix

Covariance Analysis: Ordinary
Date: 11/01/21 Time: 07:31
Sample: 1 110
Included observations: 110

Covariance Relation	DPTC	DBTC	DLTC	DITC
DPTC	0.085147 1.000000			
DBTC	0.005012 0.078104	9.870540 1.000000		
DLTC	-0.073832 -0.251053	0.139151 0.284315	0.070780 1.000000	
DITC	0.000726 0.095542	0.002073 0.025319	0.000473 0.068253	0.000679 1.000000

Source: Eviews9 Output (2021)

Table 4 illustrates the degree of relation between the study's independent variables as described previously. For the intents of this study, the relation between DPTC and FRMZ is roughly 10% positive, whereas the relation between DPTC and DLTC is strong and negative at 25%. It may be argued that profitable businesses have a decreased proclivity to issue stock. The association between DBTC and DLTC, on the other hand, is the strongest and most unfavorable, at around

28%. Finally, there is no evidence of collinearity because the relation between the independent variables is always less than 50%.

4.4 Tests for Normality (Jarque-Bera Statistics)

Table 5 Test for Normality

Data Series	Jarque-Bera Statistics	Probability Values
AROA	5.648754	0.059364
DPTC	22.83229	0.059811
DBTC	7.415332	0.084535
DLTC	10.94475	0.054201
DITC	7.417111	0.064513

Source: Eviews9 Output (2021)

According to the results of the normalcy test, the probability is as stated above. The JB value for all variables is larger than 1.0, while the related probability values are greater than 0.05 level of significance, according to the Jarque-Bera (JB) chi-square statistic at a 5% level of significance. As a result, the majority of the chosen variables are normally distributed, and the variables are appropriate for conducting the analysis.

4.5 Impact of FinTechs on Banks Profitability

Table 6: Ordinary Least Square

Dependent Variable: AROA

Method: Least Squares

Date: 11/01/21 Time: 06:08

Sample: 1 110

Included observations: 110

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.146133	0.313676	0.465873	0.0424
DPTC	0.268990	0.285373	0.241754	0.0214
DBTC	0.212043	0.017506	0.687931	0.0013
DLTC	0.166287	0.318512	0.522073	0.0366
DITC	0.465612	0.959364	0.485335	0.0233
R-squared	0.761929	Mean dependent var		0.414939
Adjusted R-squared	0.742431	S.D. dependent var		0.249615
S.E. of regression	0.246799	Akaike info criterion		0.088225
Sum squared resid	5.786446	Schwarz criterion		0.218484
Log likelihood	0.588742	Hannan-Quinn criter.		0.140943
F-statistic	1.567905	Durbin-Watson stat		1.984653
Prob(F-statistic)	0.009181			

Source: Eviews9 Output (2021)

FinTechs and Banks' Profitability

From the result on Table 6 above, digital payment transaction counts (DPTC) has a significant relationship with banks' profitability as revealed by 0.268990 and $0.0214 < 0.05$; digital banking transaction counts (DBTC) has a significant relationship with banks' profitability as revealed by

0.212043 and $0.0013 < 0.05$; digital lending and loan transaction counts (DLTC) has a significant relationship with banks' profitability by 0.166287 and $0.0366 < 0.05$; while digital investment transaction counts (DITC) has a significant relationship with banks' profitability as revealed by 0.465612 and $0.0233 < 0.05$.

This result reveals that the association between FinTechs and banks' profit has been a beneficial to banks. At present, the cooperation between banks and FinTechs is such that charges are shared between the FinTech companies who manage these technologies and the bank. Banks acquire FinTech platforms to facilitate digital transactions, while FinTech companies use banking platforms to reach the banked population. This result confirms the claims of Abaenewe, ZephChibueze, et al (2018) which argued through their findings that FinTech innovations have positively influenced the profitability of commercial banks. This, according to the authors, is owing to the fact that those transactions are linked to the banks from which charges are drawn directly and shared between the banks and the FinTech firms.

The implication of this result is that; First, a better bank will emerge as a result of transformation so that it can provide digital services. Second, conventional banks do not transform and lag but new digital banks emerge. Third, distributed banks will emerge where banks carry out general processes, but specific things are done by digital companies or bank degradation. Banks only carry out general activities. While relations with clients, the relationship to further guidance is carried out by digitalized companies. Fourth, banks will be degraded, only certain services can be done by banks and special services will be provided by FinTech. Banks only carry out general activities while the relationship to guidance will be carried out by companies that have been digitalized. Fifth, the role of bank intermediation will be completely lost because the public can already be in contact with these digitalized companies whose services are faster and cheaper, but the scenario will not happen if there is continuous cooperation between banks and FinTech firms.

5.0 CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Owing to the results obtained on Table 6 and the accompanying discussions, it can be concluded the emergence of FinTechs have significantly promoted the banks' profit due to the increased volume of transactions flowing via these techs in collaboration with banks. Banks have benefited immensely from FinTechs because of their cooperation with the FinTech companies who have provided these platforms for bank clients.

5.2 Recommendation

Following the findings obtained as shown above, this study hereby recommends that;

1. The government of Nigeria should encourage entrepreneurship through funding for FinTech start-ups in Nigeria, as this industry is still young and promising. Because of its direct link to Nigeria's sector, this industry has the ability to generate economic growth.
2. Banks should also ensure that they use financial innovations to directly boost their profitability by reaching out to the unbanked. Banking can now be begun and completed without regard for physical appearance thanks to these financial techs.

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