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Financial Technology and Performance of Listed Small and Medium Scale Enterprises In Nigeria

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Abstract
Despite the unique role expected to be played by small and medium scale enterprises in every economy and Nigeria inclusive. The contribution of SME's to economic growth and development is still retarding, which could be due to two major reasons which are intrinsic/ controllable factors and extrinsic/uncontrollable factors. This study examined the impact of financial technology on small and medium scale enterprises performance in Nigeria. The ex-post factor research design was employed. The secondary data was sourced from the audited financial statement of the small and medium scale enterprises and Central Bank Statistical Bulleting from 2019 to 2023. The ordinary least square regression was employed to determine the relationship between return on equity, sales growth and automated teller machine, web-pay, mobile money payment.
The findings reveals that automated teller machine and point-of-sale has negative significant effect on return on equity (β: -1.78; t:-0.11) and (β: -0.75; t:-0.08). Also, web-pay and point of sale has negative significant effect on sales growth at (β: -0.05; t: -0.61) and (β: -1.11; t: -0.40) while mobile money payment has positive significant effect on sales growth (β: 0.65; t: 0.30). It is therefore recommended that SME's should consider optimizing their electronic payment systems, focusing on cost-reduction strategies and enhancing the efficiency of ATM, web pay, and POS channels. Additionally, exploring alternative payment solutions or investing in technology upgrades to streamline transaction processes may mitigate the negative impact on profitability, helping firms to better align these systems with their financial objectives.

Keywords: Sales Growth, Return on Equity, Automated teller machine and Point-of-sale

Introduction

In the late 40's the ideology of SME's came into play with the aim to stimulate the volume and value of trade and industrialization in the developed nations (OECD, 2019). The conceptualization of SME's is a function of the economic programme, policies and development architecture by agencies (government or private) empowered to build the phenomenon in any country (Igboeli & Bisallah, 2020; Lontchi, et al., 2023). The CBN (2021) in its guideline structured Small and Meduim Enterprises Investment Scheme categorized SME's as any organization or enterprises that must have an asset base of (200million) two-hundred million naira minus working capital and fixed asset to commence operation.
However, in tandem to relevance and importance of Small and medium scale enterprises. This business entity stands to be an economic pillar and stimulant of development in most emerging and developing countries (Ogidi & Pam 2021). Their operation in an economy doesnot only enhance improvement in the volume of employment rate, reduction in poverty and income inequality and increase in capital absorptive capacity of the people, but also provide laudable social welfare (Anas, et al, 2017: Marini, et al., 2024; Marus, et al., 2020). Report from SMEDAN (2021), Mohammed et al., (2022) and National Bureau of Statistics (2020) revealed that other sector's or form of business contribute to 16% to Nigerian Workforce, while SME's contribute 84% which aid to transcend to the organization/ enterprises contributing 48% to the holistic gross domestic products. The SME's makes their presence and influence visible in the agricultural sector, manufacturing sector, service sector and building & construction sector.
Moreover, all their economic function could only be actualized if their performance is sustained from now till the force able future, then would their importance to enhance economic growth and development could

be visible to the people and economic agents. The performance of SME's could be captured in their market efficiency, profit level, operational efficiency and increase in investment. Wati et al (2022) depicted performance to be linked to capability or proficiency of the organization to be linked to output. Essentially, performance of SME's could be measured financially and non-financially. Financially implies the monetary effectiveness or increase in return on investment for owners of enterprises while non-financial entails the behavioral component of performance in the enterprises (Zulqarnain, et al., 2023; Musa & Njeru., 2023; Godgift et al., 2023; Badajide et al., 2020).

The contribution of SME's to economic growth and development is still retarding, which could be due to two major reasons which are intrinsic/ controllable factors and extrinsic/uncontrollable factors (Rajid, 2023). However, intrinsic factors are attributed with resource usage, strategic plans ad goals, entrepreneur's acumen or knowledge and employee's commitment while extrinsic factors are characterized with technological innovations, cultural belief and myths, pro-activeness of competitors and government laws and policies (Anigbogu, et al., 2015; Wati et al., 2020). In addition Ogujiuba, et al., (2013) and Ehiedu & Oteme (2023) revealed that part of the challenges stifling performance of SME's in Nigeria includes; management problems, Access to fund/finance, inconsistency in government policies; multiple taxes, un-availability to modern technology, marketing challenges and un-availability to local raw-materials.

The problem of expanding the scope of financial technology in a developing country like Nigeria attributed with challenges like inadequate infrastructure and technology (Inconsistent internet, cellular networks, and electricity make it hard for FinTech services to be reliable. Although mobile network operators are working to expand coverage, they face obstacles like inadequate infrastructure (including electricity and roads), regulatory barriers, and security issues, especially in rural regions), availability of access points (E-wallet users need accessible financial points, like bank branches or ATMs, to load funds, but Nigeria has a low ratio of access points per adult, especially in rural areas. A geospatial study shows Nigeria has only 17 financial access points per 100,000 adults, far fewer than Kenya (181), Uganda (116), or Bangladesh (44).

The North West and North East regions of Nigeria have the fewest access points, with 10 and 11 per 100,000 adults. Additionally, less than half of Nigerians know of a bank branch within 30 minutes of their location), higher cost and value position (FinTech services can only thrive if they offer strong value to customers, agents, merchants, and service providers. For customers, the service must be appealing and reliable enough to justify any associated fees. On the provider side, companies face substantial costs to implement digital financial solutions, including investments in technology, product development, and raising customer awareness), customer trust and awareness (For customers to adopt digital financial services, they need to first be aware of their existence and then understand and trust them, especially for activities like saving and transferring money. While awareness of mobile money has grown, 84% of Nigerian adults are still unfamiliar with it. A 2015 survey of mobile money agents revealed that low awareness and usage were major challenges. Additionally, some customers are hesitant to trust Fin-Tech services due to concerns about scams, lack of familiarity, and previous financial sector failures). (Babajide, et al., 2020; Agboola, et al., 2023; Astari, et al., 2022). Conclusively, all these challenges has to be addressed to ensure the smooth running and application of financial technology, then could such addressed problem improve the financial performance of SME's in Nigeria.

In a competitive environment where replica of organization co-exist, but their ability to be intrinsically creative and innovative determines the continuity and their improvement in the sustainability of their own specific competitive advantage. The acceptance of technology and Fin-tech in the early 2000 have improved the banking activities and volume of transactions assistance that SME's have enjoyed for a long-period of time. Fin-tech is a tool that enables financial services to be more efficient, accessible and cost effective. Fin-tech have been a recent turning point to address the limited access of banking services and low level of financial inclusion (Akanbi & Akintunde 2018; Phinaonyekwelu & Chinwe, 2020). Based on the above premises this study examined into the impact of financial technology (automated teller machine, web pay, Point of sales and mobile money payments) of SME's performance (sales growth and return on equity) in Nigeria.

2.1 Theoretical Review

The Technology Acceptance Model (TAM), introduced by Davis (1985), serves as the foundational theory for this research, explaining how users adopt new technologies. Rauniar, Rawski, Yang, and Johnson (2014) identified two key constructs in TAM: Perceived Usefulness (PU) and Perceived Ease-of-Use (PEOU).

These constructs help explain the intention to use new technology. PU refers to a user's belief that using a system will enhance job performance, while PEOU indicates the belief that the technology will be easy to use without requiring much effort (Cheung & Thadani, 2012). TAM assumes that individual behavior is voluntary but does not account for behavioral control, meaning it overlooks situations where a user intends to act but is unable to, such as not having enough money to complete a transaction (Loh, 2011). Additionally, customer satisfaction plays a crucial role in influencing customer adaptation and the intention to use internet banking.

The Diffusion of Innovation (DOI) theory, proposed by Rogers (1995), explains how new innovations spread among end users. Sociologist Everett Rogers described "diffusion" as the process by which a new idea or practice spreads within a society through established communication networks. An innovation is defined as something both novel and useful. The diffusion of innovation theory examines the rate, method, and reasons behind the spread of new developments, aiming to identify factors influencing the adoption of new information technology innovations at both individual and SME levels (Oliveira & Martins, 2011). The theory explores how firms and individuals adapt to new technologies. It is relevant to this study as it explains why SMEs adopt technological innovations, particularly for the competitive advantage they gain over non-adopters. SMEs that embrace financial technologies enjoy superior market access. Oliveira and Martins (2011) found that over 78% of SME traders reported increased sales, customer base, market share, and revenue, contributing to business growth through the use of fin-tech.

According to DOI, the spread of an innovation depends on factors such as its competitive advantage, complexity, compatibility, reliability, and observability. "Relative advantage" refers to how much an innovation is seen as superior to its predecessor. Complexity is the extent to which a new technology is perceived as difficult to understand and use, similar to the "ease of use" concept in the Technology Acceptance Model (TAM). "Compatibility" indicates how well an innovation aligns with users' values, beliefs, experiences, and needs. Reliability measures the ability to test an innovation on a small scale. Finally, "observability" refers to how visible the results of an innovation are. The diffusion theory is relevant because it explains why financial institutions adopt new technologies. Financial institutions are motivated by the pursuit of competitive advantage, and those that quickly embrace technological advancements gain an edge over competitors (Buchak, Matvos, Piskorski & Seru, 2017).

Empirical Review

Marini, et al., (2024) investigated into the relationship between financial literacy, financial inclusion and financial technology on performance of micro, small and medium enterprises in Nigeria. The sample size was collected from nine sub-district in Bengkulu city. The questionnaire was employed to source for information while the simple and multiple linear regression is employed to determine the relationship and effect between the outcome variables and explanatory variables. The findings reveals that financial literacy and financial inclusion has no significant effect on performance of small and medium scale enterprises in Nigeria, while fintech has significant impact of the performance of small and medium scale enterprises in Bengkulu. The study does not have theoretical framework and could be made robust is some measures of fintech or financial literacy is been considered.

Poi (2024) examines into the impact of relationship between financial technology innovation and business growth of small and medium scale enterprises some selected eastern areas in Nigeria. The subject matter was to determine how the fintech products like internet banking and mobile banking enhance productivity, operational efficiency in the selected SME's. The inquiry anchors of the technology acceptance model, diffusion of innovation theory. The sample size of two hundred and eight seven as employed on total population of one thousand and sixteen in selected SME's in Portharcout Nigeria. The findings from the correlation technique and spearman rank technique depicts that there is positive and significant relationship between financial technology innovation and business growth (operational effectiveness and sales in the organization).

Lontchi et al. (2023) examined the mediating role of financial literacy in the relationship between financial technology (fintech) and the performance of small and medium-sized enterprises (SMEs) during the post-COVID-19 recovery period in Cameroon. The researchers collected data from 381 SMEs located in Yaoundé and Douala, the key commercial centers of the country, to assess how fintech innovations influence SMEs' business outcomes. Using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach, the study tested its proposed hypotheses. The findings revealed a positive and significant

relationship between fintech and financial literacy, as well as a positive and significant impact of fintech on SMEs' performance. Moreover, the study found that financial literacy significantly mediates the relationship between fintech services and SMEs' performance. Consequently, the study concluded that financial literacy is a crucial channel through which fintech services enhance the operational and financial performance of SMEs in Cameroon. This research provides valuable insights into how SMEs can boost their performance by utilizing fintech solutions in combination with financial literacy.

Rasyid (2023) examines into the attainment of performance given the deployment of fintech in the financial activities of micro, small and medium scale enterprises. The study is a qualitative inquiry that reveals the various types of fintech used in small and medium scale enterprises, performance of small ane medium scale enterprises, role of fintech in improving small and medium scale enterprises in Indonesia like easier financial access, business model development, financial inclusion, operational efficiency, risk protection, market expansion, better financial management. The findings reveals that fintech is an innovative construct that have the impetus to improve the growth and performance of micro, small and medium scale enterprises in Indonesia. The study could be made robust by including a theoretical framework that would make the study more robust, since it a theoretical paper.

Zulqarnain et al. (2023) explored the combined impact of financial inclusion and digital finance on the performance of small and medium-sized enterprises (SMEs), focusing on how technology adoption plays a role. The study surveyed 212 SMEs using an online platform, selecting experts from various fields randomly. Statistical methods such as correlation, reliability, regression, and moderation analyses were employed to assess the data. The research found that SMEs with greater access to financial resources have a higher chance of success. However, the positive relationship between digital finance, productivity, financial inclusion, and economic growth was moderated by the SMEs' willingness to adopt new technologies. SMEs that are more open to innovation and advanced tools benefit more from digital finance and financial inclusion than less adaptable ones. The study recommends that policymakers and financial institutions should promote financial inclusion and digital banking, while SMEs should focus on enhancing their technological adaptability.

Gunawan et al, (2023) examine into the micro, small, medium scale enterprises could be improved upon using the relationship between financial literacy, financial technology and financial inclusion. The study collected information from one hundred business actors in the Medan city. The study deployed the structural equation modelling and Partial Least Squares in determining the direct, indirect and total direction impact between the outcome variables and explanatory variables. The study lacked a theoretical framework and using the holistic measure of the explanatory variables may not be lucid enough. The results shows that financial literacy, financial technology and financial inclusion have impact on the performance level of deposit money banks.

Musa & Njeru (2023) examines into effect of digital financial innovation on the financial performance of small and medium enterprises. The subject matter is to examine the behavioral component of digital payment systems, mobile banking systems, digital lending, customer payment technology on the financial performance of small and medium scale enterprises. The study captured the following theories to niche on which includes; diffusion innovation theory, technology acceptance model, Schumpeter theory of innovation. The findings of the inquiry revealed that fintech measured in qualitative measures has positive significant effect on small and medium scale performance. The study could be made better if it was carried out in a quantitative measure due to the conceptualization of the measures would be better for inference deduction and policy recommendations.

Ehiedu & Oteme (2023) investigated into relationship between technological innovations and financial deepening of small and medium scale enterprises in Nigeria. The subject matter was to examine how payment services which are also financial technology employed in the banking sector influence the performance of small and medium scale enterprises in Nigeria. The secondary data was sourced from the central bank statistical bulletin from 1992 to 2021. The study could not anchor the inquiry on any empirical theory that could serve the purpose. The econometric technique that could be employed could have been short-run or long-run relationship. The findings revealed that internet banking and mobile banking does not have significant effect on performance of deposit money banks and that automated teller machine and point of sale have significant effect on performance of small and medium scale enterprises in Nigeria. The study could be made robust by capturing all other measure of financial technology and innovation.

Akande, et al., (2023) investigated into the relationship between financial inclusion, financial technology and performance of small and medium scale enterprises in Nigeria. The subject matter was to examine how the financial technology of banks influence performance of small and medium scale enterprises. The study was anchored on the pecking order theory. The descriptive survey design was employed, where the sample size of two hundred and two respondents was selected from the nine-hundred and twenty-eight population. The findings revealed that availability of financial services, financial literacy programs, and point of sales has positive significant effect performance of small and medium scale enterprises measured by customer satisfaction and profitability. The study using pecking order theory cannot capture the theoretical underpinning for the topic theories like innovation diffusion theory, technology acceptance theory should be employed.

Agboola, et al, (2023) investigated into the impact of financial technology and the survival of micro, small and medium scale enterprises. The inquiry examines into how financial technology impact the survival level of small and medium enterprises. The study employed the survey design using three hundred and three questionnaire from owner and managers of the enterprises in Lagos Nigeria. The findings from the inquiry revealed that fintech affect the sales and survival level of micro, small and medium scale enterprises in the selected geographical area. The study was anchored on the theory of planned behavior, theory of reasoned action. The inquiry did not show how theories relate with the findings and testing of other component of fintech could have made the work robust.

Effiom & Edet (2022) examines into the effect of financial innovation on the performance of small and medium scale enterprises in Nigeria. The theme of this study is to determine how financial innovation (technology) affects the performance level of small and medium scale enterprises in Nigeria. The study captured financial innovation from the perspectives of ATM. Web pay, Point of sales, NIPP while the outcome variable was captured with whole sale and retail output to gross domestic product. The study employed auto-regressive distributed lag and the Toda-Yamamoto causality test to determine the direction level of the variable when the ARDL reveals the short-run and long-run relationship. The findings revealed that financial innovation measures has a positive and significant relationship with SME's productivity in Nigeria. The study using wholesale retail output to gross domestic product may not capture the unique and micro component of productivity of the organization performance.

Sumani & Prasetya (2022) investigated into effect of financial technology on the performance micro, small and medium business. The subject matter was to empirically test financial technology on performance from four cities in Indonesia. The study employed a purposive sampling technique in selection of one-hundred and thirty respondent. The findings revealed that financial technology does not have effect on performance of micro, small and medium enterprises. The lacks a theoretical framework. The combining of testing financial technology may not be logically.

Astari, et al., (2022) examines into the effect of financial literacy, fintech and monetary performance of micro, small and medium enterprises. The subject matter implies to test the combine effect of financial literacy, financial technolog on micro, small and medium enterprises on the performance using the non-probability sampling technique and the structural equation model and partial least square which revealed that financial technology has a positive effect on the financial performance of the enterprises. The study does not have a theoretical framework and the study cannot also measure financial performance in a qualitative manner.

Adiandari (2022) investigated into financial performance innovation and tandem with digital technology and performance of micro, small and medium scale enterprises in Nigeria. The study tried to understand the relevance of accounting performance based on the core of the problem of electronic payment. As comprehensive literature review on the component was carried out which revealed that many micro, small and medium enterprises can still adopts the digital technology in their financial system.

3.1 Methodology

The study employed the quantitative research design, which data to be sourced from the financial statement of the small and medium scale enterprises listed on the Nigerian Stock Exchange from the period of 2019 to 2023, this companies some are listed on the first tier and second tier of the stock exchange market. The purposive sampling technique was employed in selecting the following companies which includes; Chellaram plc, Juli plc, Cham Plc, Ellah Lakes Plc, Smart Plc, Morrison Plc, Capoil Plc, Living Trust, Citi Trust Holdings and The initiates Plc.

3.1.1 Model Specification

The section captured the model that was employed for testing the relationship between financial technology measures and performance small and medium scale enterprises in Nigeria. These model was adapted and adjusted to explore the present study from the study Ehiedu & Oteme (2023) and Ubi & Mba (2019).

The linear equation is given below;

$SMEP_{ROE,SQ} = f(FT)$……1

$FT_{it} = (\gamma_0 + \beta_1 ATM_{it} + \beta_2 WEB_{it} + \beta_3 POS_{it} + \beta_4 MOM_{it} + \varepsilon_t)$……..2

Model one

$ROE_{it} = (\gamma_0 + \beta_1 ATM_{it} + \beta_2 WEB_{it} + \beta_3 POS_{it} + \beta_4 MOM_{it} + \varepsilon_t)$……..3

Model two

$SG_{it} = (\gamma_0 + \beta_1 ATM_{it} + \beta_2 WEB_{it} + \beta_3 POS_{it} + \beta_4 MOM_{it} + \varepsilon_t)$……..4

Where;

SMEP; Small and Medium Scale Performance at time t

FT; Financial Technology at time t

Dependent variables

ROE: Return on equity at time t

SG: Sales growth at time t

Independent variable

ATM; Automated teller machine value at time t

POS; Point of sale value at time t

WEB; Web-pay/internet value time t

MOM; Mobile money payment value at time t

i= number of individuals or cross section

U= Disturbance term/White noise at time t

α = Intercept

α_1– α_6 = Coefficient of the Independent Variables.

4. Results and Discussion

4.1 Descriptive Analysis

	ROA	ROE	SG	ATM	WEB	POS	MOM
Mean	0.309091	0.209078	7.417506	9.055667	8.764621	8.929846	8.652111
Median	0.253631	0.343808	7.719454	8.986070	9.079739	8.642083	8.576647
Maximum	1.461525	2.430468	9.267048	9.203899	10.14811	9.589478	9.269831
Minimum	-1.106941	-3.994369	5.100367	8.924186	7.044695	8.396332	8.097861
Std. Dev.	0.516442	1.285897	1.081816	0.114232	1.118306	0.491018	0.411962
Skewness	-0.009455	-0.010216	-0.470246	0.296742	-0.349565	0.350142	0.198983
Kurtosis	4.498198	3.744782	2.136444	1.288239	1.743347	1.284371	1.803381
Jarque-Bera	4.676992	1.156497	3.328438	6.838224	4.308250	7.153713	3.313073
Probability	0.096473	0.560880	0.189339	0.032742	0.116005	0.027963	0.190799
Sum	15.45454	-10.45392	363.4578	452.7834	438.2310	446.4923	432.6055
Sum Sq. Dev.	13.06888	81.02307	56.17563	0.639401	61.27979	11.81385	8.315911
Observations	50	50	50	50	50	50	50

Author's Compilation, 2024

Note: ROA (Return on Asset), ROE (Return on Equity), SG (Sales growth), ATM (Automated Teller Machine), WEB (Web pay), POS (Point of Sales), MOM (Mobile Money payment).

ROA (Return on Asset) has mean value of 0.30% and median value of 0.25%, ROE (Return on Equity) has a mean value of 0.20% and median value of 0.34. SG (Sales growth) has mean value of 7.41% and median

value of 7.71%, ATM (Automated Teller Machine) has a mean value of 9.05 and median value of 8.98. WEB (Web pay) has a mean value of 8.76 and median value of 9.07. POS (Point of Sale) has a mean value of 8.92 and median value and 9.64 and MOM (Mobile Money payment) has a mean value of 8.65 and median value of 8.57.

The minimum value and maximum value of ROA (Return on Asset) his -1.10 and 1.46. Return on equity has a minimum value and maximum value of -3.99 and 2.43. SG (Sales growth) has a minimum value and maximum value of 5.10 and 9.26. ATM (Automated Teller Machine) has a minimum value and maximum value of 8.92 and 9.20. WEB (Web pay) has a minimum value and maximum value of 7.04 and 10.1. POS (Point of Sales) has a minimum value and maximum value of 8.39 and 9.58. MOM (Mobile Money payment) has a minimum value and maximum value of 8.09 and 9.26.

The Jarque-bera test is an asymptotic test which has ROA (Return on Asset) has a value of 4.67699 at 0.0964 probability which is normally distributed. ROE (Return on Equity) has a value of 1.1564 at 0.5608 probability which is normally distributed. SG (Sales growth) has a value of 3.3284 at 0.1893 probability which is normally distributed. ATM (Automated Teller Machine) has a value of 6.8382 at 0.1893 probability which is not normally distributed. WEB (Web pay) has a value of 4.3082 at 0.1160 probability which is not normally distributed. POS (Point of Sales) has a value of 7.1537 at 0.0279 probability which is not normally distributed. MOM (Mobile Money payment) has a value of 3.3130 at 0.1907 probability which is not normally distributed.

4.2 Correlation Matrix

	ROA	ROE	SG	ATM	WEB	POS	MOM
ROA	1						
ROE	0.0483	1					
SG	-0.1939	0.1741	1				
ATM	-0.1464	-0.1136	0.0068	1			
WEB	-0.2032	-0.1218	-0.0102	0.6061	1		
POS	-0.1734	-0.0985	-0.0039	0.9299	0.7121	1	
MOM	-0.1860	-0.0794	-0.0123	0.7885	0.7661	0.9576	1

Author Compilation, 2024

The table above revealed that ROA (Return on Asset) has negative relationship with ATM (Automated Teller Machine), WEB (Web pay), POS (Point of Sales), and MOM (Mobile Money payment). ROE (Return on Equity) has negative relationship ATM (Automated Teller Machine), WEB (Web pay), POS (Point of Sales), and MOM (Mobile Money payment). SG (Sales growth) has negative relationship with ATM (Automated Teller Machine), WEB (Web pay), POS (Point of Sales), and MOM (Mobile Money payment).

Regression Analysis

Table 4.3: Dependent Variable: Return on Equity (ROE)

Variable	Pooled	Fixed	Random
C	11.6016 (0.9522)	14.6016 (0.0049)	13.6996 (0.8948)
ATM	-1.8150 (0.9420)	-1.7850 (0.0089)*	-1.9950 (0.9087)
WEB	-0.0717 (0.0092)*	-1.0227 (0.3802)	-0.0744 (0.0099)*
POS	-0.2039 (0.3871)	-0.7539 (0.0197)*	-0.2999 (0.2796)
MOM	0.8178 (0.0325)	0.8199 (0.8940)	0.7830 (0.0338)
R^2	0.5161	0.6631	0.6391
Adjusted R^2	0.5713	0.6887	0.6562
Durbin-Watson	0.5126	1.5920	1.2788
F-Statistics	0.1846	5.9714	0.4893

Prob (F-Statistics)	0.0452	0.0000	0.9935
Hausman Test	0.0060		

Significant 1%; 5%**; 10%**** **Author's Compilation, 2024**

The Pooled regression model revealed that ATM (Automated Teller Machine) has a negative insignificant effect on ROE (Return on Equity) which implies that a percentage increase in ATM (Automated Teller Machine) will lead to -1.81 decrease in ROE (Return on Equity). WEB (Web pay) has a negative significant effect on ROE (Return on Equity) which implies that a percentage increase in WEB (Web pay) will lead to -0.07 decrease in ROE (Return on Equity). POS (Point of Sales) has a negative insignificant effect on ROE (Return on Equity) which implies that a percentage increase in POS (Point of Sales) will lead to -0.20 decrease in ROE (Return on Equity). MOM (Mobile Money payment) has positive significant effect on ROE (Return on Equity) which implies that a percentage increase in MOM (Mobile Money payment) will lead to 0.81 increase in ROE (Return on Equity). The coefficient of determination using r-squared shows that the independent variables ATM (Automated Teller Machine), WEB (Web pay), POS (Point of Sales), and MOM (Mobile Money payment) explained 51.61% variation in the selected deposit money banks in Nigeria. Adjusted R-squared is 57.13% of other variables that was not included in the model.

The Fixed regression model revealed that ATM (Automated Teller Machine) has a negative significant effect on ROE (Return on Equity) which implies that a percentage increase in ATM (Automated Teller Machine) will lead to -1.78 decrease in ROE (Return on Equity). WEB (Web pay) has a negative insignificant effect on ROE (Return on Equity) which implies that a percentage increase in WEB (Web pay) will lead to -1.02 decrease in ROE (Return on Equity). POS (Point of Sales) has a negative significant effect on ROE (Return on Equity) which implies that a percentage increase in POS (Point of Sales) will lead to -0.75 decrease in ROE (Return on Equity). MOM (Mobile Money payment) has positive insignificant effect on ROE (Return on Equity) which implies that a percentage increase in MOM (Mobile Money payment) will lead to 0.81 increase in ROE (Return on Equity). The coefficient of determination using r-squared shows that the independent variables ATM (Automated Teller Machine), WEB (Web pay), POS (Point of Sales), and MOM (Mobile Money payment) explained 66.31% variation in the selected deposit money banks in Nigeria. Adjusted R-squared is 68.87% of other variables that was not included in the model.

The Random effect regression model revealed that ATM (Automated Teller Machine) has a negative insignificant effect on ROE (Return on Equity) which implies that a percentage increase in ATM (Automated Teller Machine) will lead to -1.99 decrease in ROE (Return on Equity). WEB (Web pay) has a negative insignificant effect on ROE (Return on Equity) which implies that a percentage increase in WEB (Web pay) will lead to -0.07 decrease in ROE (Return on Equity). POS (Point of Sales) has a negative insignificant effect on ROE (Return on Equity) which implies that a percentage increase in POS (Point of Sales) will lead to -0.29 decrease in ROE (Return on Equity). MOM (Mobile Money payment) has positive significant effect on ROE (Return on Equity) which implies that a percentage increase in MOM (Mobile Money payment) will lead to 0.78 increase in ROE (Return on Equity). The coefficient of determination using r-squared shows that the independent variables ATM (Automated Teller Machine), WEB (Web pay), POS (Point of Sales), and MOM (Mobile Money payment) explained 63.91% variation in the selected deposit money banks in Nigeria. Adjusted R-squared is 65.62% of other variables that was not included in the model.

Based on the test results, it can be inferred that the fixed effects in the model are correlated with the independent variables. This means that the fixed effect model is preferred over the random effect model ($p < 0.05$). Therefore, the fixed effect model is used for drawing inferences for the objectives. The findings in tandem with the fixed effect model suggest that reliance on electronic payment channels like ATMs, web pay, and POS negatively impacts Return on Equity (ROE). This could imply higher transaction costs, inefficiencies, or lower profitability for firms using these payment systems, potentially indicating the need for better optimization or alternative strategies to enhance ROE in the banking sector. This findings agree with the works of Rasyid (2023) and Gunawan et al, (2023).

Table 4.3: Dependent Variable: Sales Growth (SG)

Variable	Pooled	Fixed	Random
C	11.6853 (0.0944)	-13.7124 (0.7503)	-13.4320 (0.7581)

ATM	-0.4823 (0.9821)	2.8639 (0.6067)	8.5551 (0.0134)*
WEB	0.0088 (0.0397)**	-0.0553 (0.0425)*	-0.9961 (0.0499)**
POS	0.4547 (0.0065)**	-1.1187 (0.0097)	-1.0006 (0.0064)*
MOM	-0.4666 (0.9550)	0.6556 (0.0195)	0.5499 (0.0661)
R^2	0.6009	0.9472	0.7561
Adjusted R^2	0.6898	0.9276	0.7896
Durbin-Watson	0.0771	1.4120	1.1788
F-Statistics	0.0102	48.3062	0.6679
Prob (F-Statistics)	0.0007	0.0000	0.7912
Hausman Test	0.0076		

Significant 1%; 5%**; 10%**** **Author's Compilation, 2024**

The Pooled regression model revealed that ATM (Automated Teller Machine) has a negative insignificant effect on SG (Sales growth) which implies that a percentage increase in ATM (Automated Teller Machine) will lead to -0.48 decrease in SG (Sales growth). WEB (Web pay) has a positive significant effect on SG (Sales growth) which implies that a percentage increase in WEB (Web pay) will lead to 0.00 increase in SG (Sales growth). POS (Point of Sales) as a positive significant effect on SG (Sales growth) which implies that a percentage increase in POS (Point of Sales) will lead to 0.45 increase in SG (Sales growth). MOM (Mobile Money payment) as negative insignificant effect on SG (Sales growth) which implies that a percentage increase in MOM (Mobile Money payment) will lead to -0.46 decrease in SG (Sales growth). The coefficient of determination using r-squared shows that the independent variables ATM (Automated Teller Machine), WEB (Web pay), POS (Point of Sales), and MOM (Mobile Money payment) explained 60.09% variation in the selected deposit money banks in Nigeria. Adjusted R-squared is 68.98% of other variables that was not included in the model.

The Fixed effect regression model revealed that ATM (Automated Teller Machine) has a positive insignificant effect on SG (Sales growth) which implies that a percentage increase in ATM (Automated Teller Machine) will lead to 2.86 increase in SG (Sales growth). WEB (Web pay) has a negative significant effect on SG (Sales growth) which implies that a percentage increase in WEB (Web pay) will lead to 0.05 decrease in SG (Sales growth). POS (Point of Sales) as a negative significant effect on SG (Sales growth) which implies that a percentage increase in POS (Point of Sales) will lead to -1.11 decrease in SG (Sales growth). MOM (Mobile Money payment) as positive significant effect on SG (Sales growth) which implies that a percentage increase in MOM (Mobile Money payment) will lead to 0.65 increase in SG (Sales growth). The coefficient of determination using r-squared shows that the independent variables ATM (Automated Teller Machine), WEB (Web pay), POS (Point of Sales), and MOM (Mobile Money payment) explained 94.72% variation in the selected deposit money banks in Nigeria. Adjusted R-squared is 92.76% of other variables that was not included in the model.

The Random effect regression model revealed that ATM (Automated Teller Machine) has a positive significant effect on SG (Sales growth) which implies that a percentage increase in ATM (Automated Teller Machine) will lead to 8.55 increase in SG (Sales growth). WEB (Web pay) has a negative significant effect on SG (Sales growth) which implies that a percentage increase in WEB (Web pay) will lead to -0.99 decrease in SG (Sales growth). POS (Point of Sales) as a negative significant effect on SG (Sales growth) which implies that a percentage increase in POS (Point of Sales) will lead to -1.00 decrease in SG (Sales growth). MOM (Mobile Money payment) as positive insignificant effect on SG (Sales growth) which implies that a percentage increase in MOM (Mobile Money payment) will lead to 0.54 increase in SG (Sales growth). The coefficient of determination using r-squared shows that the independent variables ATM (Automated Teller Machine), WEB (Web pay), POS (Point of Sales), and MOM (Mobile Money payment) explained 75.61% variation in the selected deposit money banks in Nigeria. Adjusted R-squared is 78.96% of other variables that was not included in the model.

Based on the test results, it can be inferred that the random effects in the model are correlated with the independent variables. This means that the random effect model is preferred over the fixed effect model ($p > 0.05$). Therefore, the random effect model is used for drawing inferences for the objectives. The findings in

tandem with random effect model reliance on web pay and POS systems negatively impacts sales growth, potentially due to inefficiencies or transaction barriers. However, mobile money payments positively influence sales growth, indicating that mobile-based transactions may enhance customer access and drive higher sales, emphasizing the importance of leveraging mobile payment systems for business expansion. The findings agree with the works of Marini, et al., (2024), Akande, et al., (2023) and Agboola, et al, (2023).

5.1 Conclusion and Recommendation

From the findings on model one the study concludes that the use of ATM, web pay, and POS systems has a negative and significant impact on Return on Equity (ROE). This suggests that these electronic payment methods may increase operational costs or reduce profitability, affecting the overall financial performance of firms. It highlights potential inefficiencies within these payment channels that could be contributing to lower shareholder returns. The findings from model three revealed that WEB (Web pay), POS (Point of Sales) has negative significant effect on SG (Sales growth) while MOM (Mobile Money payment) has positive significant effect on SG (Sales growth). The study concludes that web pay and POS systems have a negative impact on sales growth, possibly due to transaction inefficiencies or limitations in customer access. In contrast, mobile money payments positively influence sales growth, suggesting that they offer a more convenient and accessible payment method, thereby boosting customer engagement and driving higher sales. It is therefore recommended that to improve ROE, SME's should consider optimizing their electronic payment systems, focusing on cost-reduction strategies and enhancing the efficiency of ATM, web pay, and POS channels. Additionally, exploring alternative payment solutions or investing in technology upgrades to streamline transaction processes may mitigate the negative impact on profitability, helping firms to better align these systems with their financial objectives.To maximize ROA, SME's should continue leveraging web pay and POS systems, optimizing them for greater efficiency. However, firms should reassess their mobile money payment strategies, aiming to reduce operational costs and improve transaction management. Investing in advanced mobile technology or refining payment processes could help mitigate the negative effects on ROE and enhance overall financial performance.

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