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FINANCIAL EVOLUTION AND FIRM VALUE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT

This study assessing the link between the Financial Evolution and Firm Value of Listed DMBs in Nigeria. Secondary data of the sampled banks were obtained from Nigeria exchange groups for a period of 11 years. Multiple Regression estimation analysis was adopted through Stata version 13. Model. It revealed that the Mobile Banking Transaction (MBT), Automated Teller Machine (ATM), Online Transactions (OLT), and Point of Sales Transactions (POS) have significant positive effect on price-earnings ratio (PER) and Price-to-Book Value (PBV),while Electronic Fund Transaction (EFT) have negative significant effect on price-earnings ratio (PER). Also, Internet Banking Transaction (IBT) and Agent Banking Transaction (ABT) have insignificant positive effect on PER and PBV but EFT has insignificant positive effect on PER. This study concludes that financial evolution in terms of MBT, ATM, OLT, and POS significantly impact the firm value. Therefore, the study recommended that DMBs in Nigeria should continue to innovate, upgrade and strategically optimize the utilization of financial innovations to enhance the value of firms. This evolution can lead to improvements in financial performance, risk management and the overall firm value.

KEYWORDS: - Financial Evolution Firm Value, Price-to-Book Value, price-earnings ratio.

1.0 INTRODUCTION

Given how financial technology and banking are developing, research on how financial innovation affects firm value in Nigerian Deposit Money Banks (DMBs) is essential. Nigeria's financial sector has seen a dramatic upheaval in recent years, mostly due to shifting customer tastes and technology improvements. One of the main pillars of this transition has been the use of

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digital payment technologies, which have completely changed how banks function and engage with their clientele. The adoption of these financial innovations by the Nigerian banking industry takes place against a backdrop of changing client expectations, growing fintech competition, and regulatory changes. The regulatory framework for digital banking has been meaningfully fashioned by the Central Bank of Nigeria (CBN), which has also had an impact on the rate and direction of innovation in the industry. The performance of banks and, by extension, company value is significantly impacted by this change. Two popular ratios that are used to assess a corporation's market worth in relation to its assets and financial performance are the Price-to-Book (PBV) value ratio and the Price-to-Earnings (PER) ratio. These ratios may be affected by a number of variables in the context of Nigerian DMBs, such as the uptake and effectiveness of digital payment methods.

This study's precise goals centre on seven crucial financial innovation domains, namely, Electronic Funds Transfer (EFT), Internet Banking Transactions (IBT), Mobile Banking Transactions (MBT), Point of Sale (POS) Transactions, Electronic commerce (E-commerce), Automated Teller Machines (ATMs), and Agent Banking Transactions (ABT). The electronic movement of funds, consumers' abilities to have convenient, round-the-clock access to internet banking services, smartphones accessibility to banking solutions, smooth payment due to POS technologies in retail transactions, digital wallets and e-commerce payments mechanisms, the effectiveness and accessibility of ATM networks; and the use of independent agents to provides financial services to underrepresented communities significantly impact the bank's operational effectiveness and customer satisfaction as well as the bank's market worth. In addition to a bank's overall market position, income streams, client acquisition and retention strategies, book value, and market perception can all be impacted by these factors and operational efficiency could all be impacted by any one of these digital payment systems, which can also affect the PER and PBV ratios. These financial breakthroughs and corporate value have a nuanced and intricate relationship. On the one hand, investments in digital payment systems may result in higher short-term operating costs, which could strain profits and have an impact on the P/E ratio. However, if these technologies are used successfully, they may result in increased customer satisfaction, a wider market reach, and increased efficiency, all of which may have a beneficial long-term effect on profitability and market valuation (Ugbede, et al., 2019). Additionally, a bank's asset structure and efficiency may be impacted by the acceptance of digital payment systems, which may have an impact on the bank's book value and, therefore, its PBV ratio. Investing in digital infrastructure, for example, could broaden a bank's asset base and possibly eliminate the need for physical branches, resulting in a more effective use of available assets (Dabwor, et al., 2017).

The swift adoption of digital payment methods and financial technologies has resulted in a notable shift of the Nigerian banking sector in recent times. Although these innovations offer

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better customer service, increased operational efficiency, and a wider market reach, it is yet unknown and little researched how they may affect DMBs' overall firm value. Major problems concerning this inquiry centered on lack of thorough knowledge of particular digital payment innovations, conflicting financial implications of these technologies, changing market dynamics due to the quick speed of technological advancement, the emergence of fintech rivals and unclear picture of the modifications, regulatory uncertainty in Nigeria's digital banking landscape, differing adoption rates of various digital payment systems among banks and client sectors, limited research in the Nigerian context due to the distinctive features of the Nigerian banking system and economy, difficulties with making strategic decisions on which digital innovations yield the highest returns, and measurement complexities to quantify the direct effect of particular digital payment systems on intricate financial ratios like PER and PBV.

By offering a thorough examination of how different digital payment innovations impact the firm value of Nigerian DMBs, this research seeks to address these problems. The study will provide insights into how these innovations affect fundamental financial performance as well as market perceptions, which are reflected in stock prices, by looking at the effects on both PER and PBV ratios. The outcomes of this inquiry will be critical for investors assessing bank stocks, bank management making well-informed decisions regarding technology investments, and legislators developing laws that encourage innovation while maintaining financial stability. Additionally, it will further the academic community's comprehension of how financial innovations affect business value in developing nations. The outcomes as well add to the corpus of knowledge already available on firm value and financial innovation, especially as it relates to emerging economies and assist in bridging the knowledge gap between conventional banking theories and the reality of the digital era, which could result in the development of new theoretical frameworks for comprehending the fintech era of bank valuation. This will support both theoretical comprehension and practical decision-making in the quickly changing field of digital finance.

In the end, the aim of the inquiry is to have a detailed investigation of how financial/evolution innovation (different digital payments systems) affect firm value (PER and PBV ratios) of DMBs in Nigeria. The research aims to determine which technologies have the biggest influence on bank valuations and to comprehend the mechanisms underlying these impacts by looking at each of these advances separately. The specific objectives on which hypotheses are tested are to (i) examine the effect of EFT on firm value (PER and PBV) of DMBs in Nigeria; (ii) inspect the effect of IBT on firm value (PER and PBV) of DMBs in Nigeria; (iii) determine the effect of MBT on firm value (PER and PBV) of DMBs in Nigeria; (iv) assess the effect of POS on firm value (PER and PBV) of DMBs in Nigeria; (v) investigate the effect of OLT on firm value (PER and PBV) of DMBs in Nigeria; (vi) examine the effect of ATM on firm value (PER and PBV) of

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DMBs in Nigeria; and (vii) determine the effect of ABT on firm value (PER and PBV) of DMBs in Nigeria

2.0 LITERATURE REVIEW

2.1 Conceptual Framework

Financial evolution and financial innovation are closely related concepts that refer to the development and introduction of new financial products, services, technologies, and practices within the financial sector. Financial evolution is the gradual and continuous process of change and adaptation in the financial system over time (Arner, et al., 2016). It involves the transformation of existing financial instruments, institutions, and practices in response to changing economic conditions, regulatory environments, technological advancements, and market demands. Financial evolution is driven by various factors, including globalization, deregulation, technological progress, and market competition (Arner, et al., 2016). A variety of factors, including institutional and regulatory changes, market integration, and technology breakthroughs, can contribute to the evolution of finance (Frame, et al., 2019). Institutional changes refer to the restructuring of financial institutions, such as mergers, acquisitions, or the establishment of new types of financial firms that result in changes to the financial landscape (Gomber, et al., 2017). Regulatory changes, on the other hand, are modifications to financial regulations and policies that can lead to the evolution of financial practices and the emergence of new financial products or services (Frame, et al., 2019). Additionally, technological advancements refer to the adoption of new technologies that have the potential to completely transform the way financial services are provided and accessed, such as blockchain, digital banking, and fintech solutions (Gomber, et al., 2017). Market integration, on the other hand, deals with the integration of financial markets across borders and the increased interconnectedness of different financial systems driving the evolution of financial practices and instruments (Frame, et al., 2019).

Tufano (2003) said financial innovation is the act of developing and promoting novel financial tools, equipment, institutions, and markets. The deliberate development and launch of new financial services, products, procedures, or business models within the financial industry is referred to as financial innovation (Gomber, et al., 2017). It entails the creation of cutting-edge trading plans, risk control methods, financial instruments, and organisational frameworks that offer fresh approaches to risk management, capital raising, and financial service delivery (Gomber, et al., 2017). New financial products, services, procedures, and business models are only a few examples of the diverse ways that financial innovation manifests itself (Frame, et al., 2019). New financial services, such as peer-to-peer lending, online investment platforms, or mobile banking, pertain to the introduction of new services that enhance access to financial services or provide new avenues for conducting financial transactions. New financial processes,

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on the other hand, deal with the development of new methods or technologies for executing financial transactions, managing risks, or analyzing financial data, such as algorithmic trading or artificial intelligence-driven portfolio management. Finally, new business models deal with the emergence of new types of financial institutions or intermediaries, such as fintech companies, crowd-finding platforms, or crowd sourcing firms. The needs to solve inefficiencies in the market, better manage risks, or satisfy changing investor and consumer needs are often the driving forces behind financial innovation. It may also result from modifications to regulations, developments in technology, or the financial industry's quest of competitive advantages.

Financial innovation or financial evolution can plausibly be defined as the creation and adoption of new financial instruments, technologies, organizations, and markets. Financial innovation and evolution are both essential to shape the financial environment, promote efficiency, expand access to financial services, and stimulate economic growth. Within the framework of this research, the principal areas of interest are electronic financial services and digital payment systems or digital financial services also refer to as Fintech. According to Frame et al. (2019), financial technology, or Fintech, describes businesses that use novel technologies to contend with conventional banking techniques in providing financial services. Technologies to improve public accessibility to financial services include using smartphones for mobile banking, investing, borrowing, and cryptocurrency.

Digital financial services, or DFS, are the many different financial services that may be accessed and offered through digital means. These services include payments, credit, savings, remittances, insurance, and financial information (Abbasi & Weigand, 2017). According to AFI (2016), "digital channels" include the internet, mobile phones (including smartphones and feature phones), ATMs, POS terminals, NFC-equipped devices, chips, electronically enabled cards, biometric devices, tablets, phablets, and any other digital system. In order to address the problems of globalisation and consumers' increasingly complicated needs, DFSs are expanding and gradually replacing traditional banking services due to breakthrough technologies. The companies (service providers) benefit from these diverse digital offerings by increasing company performance and maintaining market competitiveness. Additionally, it helps them get more market share, which boosts their profitability and strengthens their financial situation. EFT,IBT, MBT, POS, OLT, ATM, and ABT are the variables of digital financial services considered in this inquiry.

According to Humphrey (2002), electronic fund transfers (EFT) allow money to be moved electronically between bank accounts, whether they are located in the same financial institution or not. A bank's operational effectiveness and customer satisfaction can be greatly impacted by the effectiveness and dependability of its EFT systems, which may have an impact on the bank's

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market worth. IBT is an online banking operation that let users undertake a variety of remote financial transactions (Sathye, 1999). The way consumers engage with their banks has been completely transformed by internet banking, which provides convenient, round-the-clock access to banking services. An institution's capacity to draw in and keep consumers may be impacted by the uptake and efficacy of online banking systems, which could have an effect on the institution's bottom line and image in the marketplace. MBT is a platform where customers can perform financial transactions whenever and wherever they choose by using mobile devices to access banking services (Barnes & Corbitt, 2003). Mobile banking in Nigeria has grown in popularity as smartphones have proliferated and a bank's ability to successfully differentiate itself in the market through its mobile banking solutions may have an impact on valuation measures. POS is a credit or debit card payments performed electronically at retail locations (Mallat & Tuunainen, 2008). Electronic payments have become smoother thanks to point-of-sale (POS) technologies in retail transactions. Banks' fee-based revenue and competitive position may increase if they manage and deliver POS services well. OLT is a more general term that includes e-commerce transactions as well as other electronic payment methods made via the internet (Laudon & Traver, 2013). Digital wallets and e-commerce payments are two examples of the different digital payment mechanisms that fall within the larger category of online transactions. The competitive position and financial performance of a bank might be influenced by its capacity to enable and safeguard these transactions. An automated teller machine (ATM) is an electronic banking device that allows consumers to do basic transactions without help from a teller or branch professional (Batiz-Lazo, 2009).Even though they are an older type of banking technology, ATMs are nevertheless a crucial component of Nigeria's financial system. Customer satisfaction and operational expenses can be impacted by the effectiveness and accessibility of ATM networks. Agent Banking Transactions (ABT) is a location where there are few bank branches, banks offer financial services via non-bank agents like pharmacies or grocery stores (Lyman et al., 2006). Through the use of independent agents, agent banking provides financial services to underrepresented communities. A bank's reach and client base could develop as a result of this approach, especially in rural areas, which could have an effect on the bank's growth prospects and valuation.

A company's firm value is its overall worth as determined by the market. It is frequently assessed utilising several financial ratios such as asset-based valuation, market and income approaches. The market technique, which can be easily discovered in company reports regularly, is arguably the easiest way to value a bank. This study uses a market valuation technique and two key metrics: the price-to-book (P/B) ratio and the price-to-earnings (P/E) ratio. The price-to-earnings ratio (P/E ratio) compares the share price and earnings per share of a firm (Damodaran, 2012). In general, a higher P/E ratio indicates that investors expect higher rates of profit growth in the future. It is a function of three factors that illustrate certain particulars for bank valuation:

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the payout ratio, the cost of equity, and the predicted growth rates in earnings. By calculating the market price per share by the firm's earnings per share (PER), one can determine the price earnings ratio.

$$\text{PE Ratio} = \frac{\text{market price per share}}{\text{Earnings per share}}$$

On the other hand, P/B ratio is the market value to book value ratio evaluation of a corporation (Damodaran, 2012). It is calculated as the corporation's current stock price per share divided by its book value per share (BVPS)

$$\text{PBV Ratio} = \frac{\text{market price per share}}{\text{Book value per share}}$$

It is important for financial institutions such as DMBs to pay special attention to P/B ratio because of the nature of their assets. DMBs are financial establishments that have the authority to accept deposits and provide loans. They are important to Nigeria's financial system and are governed by the Central Bank of Nigeria (CBN) (CBN, 2020). By comparing the stock price of a firm to its profits per share, the P/E ratio shows investors how much they are ready to pay for every naira of earnings. In contrast, the P/B ratio provides insight into how the market values affect a company's net assets by contrasting its market value with its book value. This thorough backdrop will examine how different digital payment methods affect the Price-to-Earnings (P/E) ratio and the Price-to-Book (P/B) value ratio, two important indicators of company value.

2.2 Theoretical framework

Many theories explain the relationship between the constructs under investigation. Technology Acceptance Model (TAM) created by Davis in 1989, labels how people adopt and utilize technology. It's important to comprehend how banks and their clients are utilizing digital payment systems. Theory of Diffusion of Innovation is a theory, which was put forth by Rogers in 1962, describes how, why, and how quickly new concepts and innovations proliferate. It can be used to examine how quickly different digital payment methods are being adopted by Nigerian banks. View Based on Resources (RBV), according to this strategic management idea, which was created by Barney in 1991, businesses can obtain a long-term competitive advantage by using resources that are valued, uncommon, unique, and non-replaceable. Digital payment systems can be seen in this light as assets that have the ability to increase a bank's competitive edge and, in turn, its firm value. The hypothesis of the efficient market (EMH) developed by Fama (1970) posits that stock prices are a reflection of all available information. This idea is pertinent to comprehending the potential reflection of digital innovation information in bank

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stock prices and, consequently, in P/E and P/B ratios. The function of financial institutions in the economy is explained by the Theory of Financial Intermediation examined by which Allen and Santomero (1997). The introduction of digital payment methods represents a development in the way banks carry out their role as intermediaries.

2.3 Empirical Review

Nurdin, et al. (2023) determine the factors influencing the use of digital payments in the digital era and understand the extent of financial technology services' use in society. Quantitative research was conducted through a survey distributed via Google Form to 102 respondents aged 14-30, with data analyzed using PLS-SEM. Data collection, validity and reliability tests, measurement model assessment, and structural model assessment were conducted using the extended UTAU model. The findings show that intent to use digital payment is highly influenced by effort expectation and performance expectancy, but not by culture, perceived security, or social variables. Xu, et al. (2023) use data on A-share listed businesses in China from 2012 to 2019 to investigate the effect of digital inclusive finance on company value from the standpoint of financing limitations. Data is collected and analyzed to understand the relationship between these variables. Statistical analysis techniques are employed to assess how digital inclusive finance affects firm value, considering factors like company size and ownership structure. According to the report, inclusive digital finance contributes to higher business value. The regulatory environment has a big impact on how digital banking is adopted and how much it increases the value of companies. The impact of e-banking on the operational effectiveness of Nigerian banks is examined by Taiwo and Agwu (2017). Pearson correlation was used to analyse primary data that was gathered by giving questionnaire copies to employees of four banks—Ecobank, UBA, GTB, and First Bank—that were specifically chosen. It has been noted that, in comparison to the conventional banking age, the introduction of electronic banking has enhanced Nigerian banks' operational efficiency. The profitability of banks in 23 developed and developing countries was examined by Akhisar et al. (2015) in connection to electronic banking. Using data from 23 industrialised and developing nations' electronic banking services from 2005 to 2013, the effects of ROA and ROE performance were examined using dynamic panel data methodologies. They found a favourable correlation between bank profitability and the adoption of electronic banking services, particularly in developed countries.

Jegede (2014) looks into how ATMs affect Nigerian banks' operational efficiency. The enormous difficulties posed by the expansion of ATM infrastructure and the resulting, frequently unreported financial losses to banks serve as the driving force behind this study. Data from 125 convenience sample employees of five chosen banks in Lagos State with inters witch network was gathered using a questionnaire. As a result, the chi-square approach was used to statistically analyse the data gathered through the questionnaire. The findings show that, despite the

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advantages, the performance of Nigerian banks has only slightly improved as a result of the installation of ATMs. The goal of Ndungu and Njeru's (2014) study was to evaluate some of the elements that lead to Kenyans' acceptance of agency banking. Three distinct factors were evaluated: agent quality, customer service, and convenience. The total commissions that agents occasionally earned at intervals of six months served as the dependent variable. The multiple regression analysis's findings show that system availability influences service reliability, and that good reliability boosts agency banking adoption and improves performance. In summary, the investigation found a positive relationship between agency banking and bank profitability. Agwu and Carter (2014) looked into the issues surrounding the extent to which Nigerian bank clients adopted and used mobile phone banking services. In Nigeria, eleven banks were chosen at random, and stakeholders that were questioned included bank employees, clients, and university students. An unstructured series of interview questions was used to collect study data, which was then analysed using thematic evidence. The results showed that although ATM services were more widely available, mobile phone banking was more well-established than internet banking.

Abaenewe et al. (2013) looked at the profitability performance of Nigerian banks following the adoption of electronic banking. The method of judgmental sampling was employed, utilizing information gathered from four banks in Nigeria. Returns on equity (ROE) and returns on assets (ROA) were used to assess the profitability performance of these banks. The data was gathered, examined in the pre- and post-adoption of e-banking performance, and the difference between means for performance indicators like ROE and ROA was calculated at the five percent significant level. According to the report, Nigerian banks' return on equity has increased dramatically and favourably as a result of the use of electronic banking. Conversely, research also showed that Nigerian banks' return on assets (ROA) has not increased appreciably as a result of e-banking. Ling and Waiman (2011) used data from e-channel announcements from 2008 to 2010 and event research technique to determine the impact of the e-channel strategy on the firm's worth. In order to determine if the type of e-channel, product type, company's e-channel presence or absence, and network type can influence the relationship between e-channel announcement and firm market value, the study created a research model to examine how the stock market responds to e-channel investment. It computes the CARs and assesses their relevance using the sample firms' data. The association between the business market value and the e-channel initiatives did not exhibit any noteworthy beneficial effects. Adewuyi (2011) investigated the benefits, obstacles, and factors influencing Nigerians' adoption of electronic banking. In order to simulate the factors influencing electronic banking, the study used generalised structural equation modeling, or GSEM, on a sizable sample of respondents who were polled from five of Nigeria's six geographic zones. It was noted that although Nigerians' usage of internet banking has improved operational efficiency, further study is required to ascertain how it influences firm value metrics.

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The empirical review shows a noticeable lack of research clearly connecting these innovation variables to firm value measurements, especially in the Nigerian setting, notwithstanding the body of current literature proposes astute evidence about the adoption and effects of various digital payment methods in banking. Few studies look at the effect on market-based valuation metrics like P/E and P/B ratios; most concentrate on operational efficiency or profitability. Furthermore, many of the studies that have already been done may not adequately capture the current situation of digital banking systems in Nigeria due to the quick speed of technical change. Current, thorough research that looks at how each of these digital innovations affects the firm value of Nigerian DMBs both separately and collectively is needed. By offering a thorough analysis of the relationship between particular digital payment innovations and firm value metrics in the Nigerian banking industry, this research seeks to close these gaps.

3.0 METHODOLOGY

This study used ex-post facto research design, this design method is appropriate because secondary data was drawn from the yearly reports of the sampled banks for the period 2012-2022. The secondary data will be collected from the financial statements of the sampled banks. The population consists of thirty-two (32) listed DMBs in Nigeria quoted on the Nigerian Exchange Group (NGX) as at 31st January, 2022. Eight (8) DMBs (Access, Fidelity, FCMB, First Bank, GTB, Union, UBA and Zenith) with international commercial license and five (5) DMBs (Eco, Keystone, Polaris, Sterling, Stanbic IBTC) with national commercial license were selected making a total of thirteen (13) DMBs. Other banks (Citibank Heritage, Standard Chartered, Titan Trust Bank, Unity Bank, Wema) were left out from the sample selection due to non-availability of data and the non-interest banks ((Jaiz, Taj, Lotus banks) due to fresh in their years of establishment. The sampled year selected is 11 years (2012 - 2022), as the period serves as the peak of financial evolution. Study data sourced from the NGX, CBN Bulletin (2022) and websites of the DMBs.

3.1 Data Analysis Technique

The statistical method used for this research work is the Ordinary Least Squares (OLS) of the STATA Version13.0. Two types of variables are used dependent variables, independent variable.

The dependent variable is the firm value proxy by the price earnings ratio (PER), price-to-book value ratio (PBV), the independent variable is financial evolution proxy Electronic Fund Transfer (EFT), Internet Banking Transactions (IBT), Mobile Banking Transactions (MBT),Automated Teller Machine (ATM), Point of Sales Transactions (POS), Online Transactions (OLT),Agent Banking Transactions (ABT). Hence, the following models are used:

$$PER = \alpha o + \beta_1 EFT + \beta_2 IBT + \beta_3 MBT + \beta_4 ATM + \beta_5 POS + \beta_6 OLT + \beta_7 ABT + \varepsilon \ldots (1)$$

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$$PBV = \alpha o + \beta_1 EFT + \beta_2 IBT + \beta_3 MBT + \beta_4 ATM + \beta_5 POS + \beta_6 OLT + \beta_7 ABT + \varepsilon \ldots. \quad (2)$$

Where: PER = Price Earnings Ratio, PBV Price-to-Book Value Ratio, EFT = Electronic Fund Transfer, IBT = Internet Banking Transactions, MBT = Mobile Banking Transactions, ATM = Automated Teller Machine, POS = Point of Sales Transactions, OLT = Online Transactions, ABT = Agent Banking Transactions, α= Regression Intercept, ε= Error term.

4. RESULT AND DISCUSSION

4.1 Descriptive Statistics

Table 4.1: Summary of Descriptive Statistics

Variables	No. Obs	Mean	Std. Dev.	Maximum	Minimum	Skewness.	Kurtosis
PER	143	9.9308	24.569	-88.616	97.106	0.5637	0.0000
PBV	143	9.9692	0.6889	7.7297	10.993	0.0003	0.0622
EFT	143	3.7756	3.5533	0.786	33.778	0.0000	0.0000
IBT	143	4.3758	8.2678	0.0917	92.336	0.0000	0.0000
MBT	143	7.2283	6.0303	0.0921	49.666	0.0000	0.0000
ATM	143	11.558	0.9088	9.4387	13.513	0.2178	0.1332
OLT	143	10.9718	1.5605	9.1018	13.894	0.0000	0.0205
POS	143	10.9687	0.8831	9.3292	12.613	0.1957	0.0185
ABT	143	11.0694	0.9983	8.3766	12.974	0.1013	0.0745

Source: Output generated from STATA 13 Software.

The tables provide the result for descriptive statistics for the variable under investigation. There all 143 observations for all the variables. Price-to-Earnings Ratio (PER) has highest mean (9.9308), standard deviation (24.569), wide range (-88.616 to 97.106), and positive skewness (0.5637). Price-to-Book Value (PBV) has high mean (9.9692), relatively low standard deviation (0.6889), a range from 7.7297 to 10.993, and near-zero skewness (0.0003). EFT, IBT, and MBT means are 3.7756, 4.3758, and 7.2283 respectively. EFT and IBT have lower means and higher variability. MBT has a higher mean (7.2283) and moderate variability. ATM, OLT, POS, and ABT have similar means (between 10.9-11.5), a relatively low standard deviations and a slight positive skewness for ATM and POS. Most variables have low kurtosis, indicating relatively normal distributions. Generally, most variables show little to no skewness and PER stands out with its high variability and range. The data suggests a diverse set of indicators with varying degrees of volatility and distribution characteristics, implying a complex, high variability, and stable data.

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4.2 Correlation Matrix

The purpose of the correlation matrix is to evaluate the degree and strength of the relationship between the independent factors and the dependent variables. This aids in determining the strength or degree of the association between each independent variable, since high correlation may result in multicollinearity and erroneous findings and conclusions.

Table 4.2: Correlation Matrix of Dependent and Independent Variables

	PER	PBV	EFT	IBT	MBT	ATM	OLT	POS	ABT	VIF
PER	1									
PBV	0.2531	1								
EFT	-0.334	-0.548	1							1.08
IBT	0.0427	0.1269	-0.288	1						1.04
MBT	-0.210	-0.099	0.3100	-0.123	1					1.06
ATM	0.3425	-0.093	-0.378	0.1629	-0.343	1				1.09
OLT	0.1423	-0.231	-0.159	0.0673	-0.230	0.7483	1			1.07
POS	0.2861	-0.119	-0.327	0.2249	-0.345	0.6757	0.7304	1		1.03
ABT	0.2905	-0.110	-0.337	0.1865	-0.362	5912	0.8400	0.6013	1	1.05

Source: Output generated from STATA 13 Software.

This table presents a correlation matrix with Variance Inflation Factors (VIF) for the indicators. Most correlations are relatively weak to moderate. Strongest positive correlations are between ATM and OLT (0.7483), OLT and ABT (0.8400), and POS and OLT (0.7304). Strongest negative correlation is between EFT and PBV (-0.548). All reported VIF values are low (between 1.03 and 1.09), indicating low multicollinearity among the variables. PER has a moderate positive correlation with ATM (0.3425). EFT shows negative correlations with several variables, including PBV, ATM, and ABT. ATM, OLT, POS, and ABT generally show positive correlations with each other. This implies that the low VIF values suggest that multicollinearity is not a significant concern in this dataset, allowing for more reliable regression analysis. However, the moderate correlations between some variables indicate potential relationships that could be explored.

4.3: Regression Result

Table 4.3 Summary of Regression Result

	Model 1			Model 2		
Variables	Coef	t-value	P>|t|	Coef	t-value	P>|t|
Constant	-90.268	-2.90	0.004***	10.670	11.93	0.000***
EFT	.22725	0.38	0.704	-.0287	-1.67	0.097*

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IBT	.18961	0.79	0.433	.0049	0.71	0.478
MBT	.80138	2.40	0.006**	.02107	2.19	0.011**
ATM	13.090	3.18	0.002***	.22834	1.92	0.081*
OLT	5.4729	2.09	0.039*	.12648	1.67	0.096*
POS	2.7719	2.48	0.005**	.38835	2.63	0.007**
ABT	3.3364	0.66	0.512	.02416	0.17	0.869
R^2			0.133			0.086
Adj. R^2			0.090			0.039
Obs			143.0			143.0
F(sig)			2.96*			1.82*
Prob >F			0.065			0089
VIF mean			0.030			3.30
Sktest			7.390			7.390
Sktest Prob>chi^2			0.084			0.084
Root Mean			0.524			0.675

Source: Computation via STATA 13. Note *, **, *** significance at 10%, 5% & 1% respectively.

The p-values of the Models (0.0065 and 0.0086) indicate that the link between financial evolutions on firm value of listed DMBs in Nigeria is statistically significant. More so, the estimation Log-likelihood (F-Statistics) values of 2.96 and 1.82 indicate that the models are well fit and the variables were properly selected, combined and used. As such the p-value of Prob > chi2 are statistically significant at 5% which means that dependent variables are reliably predicted by its predictors. The models 1 and 2 have R^2 of 0.13 and 0.9, showing the extent of association between independent variables and dependent variables. This implies that 13% and 9% of the total variation in PER and PVB could be explained by the explanatory variables (EFT, IBT, MBT, ATM, OLT, POS and ABT) respectively. Only 87% and 91% are responsible for factors not captured in the models. The adjusted $R^2$of 9% and 4% are leaving an error of 91% and 96% showing the models' strength, applicability, and usefulness in ascertaining the extent to which financial evolution (EFT, IBT, MBT, ATM, OLT, POS and ABT) impacted on PER and PBV of the firms, which are considered satisfactory.

4.2 Hypotheses Testing

Ho_1EBT has no significant effect on the PER and PBV of listed DMBs in Nigeria.

Table 4.3 shows that the EBT relationship with PER and PBV have coefficients of 0.227 and-0.0287, t-values of 0.38 and -1.67 and P-values of 0.704 and 0.097 respectively. The magnitude of the impact of EBT indicates an insignificant positive effect on PER and a significant negative effect on PBV. This means that EBT has no significant effect on the PER but has a negative

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significant effect on PBV. Subsequently, the relationship is statistically insignificant for PER at 10% (0.704>0.1) and statistically significant for PBV at 10% (0.097<0.1). Thus, the Ho_1 that EBT has no significant impact on the PER was accepted and concludes that EBT does not determine the PER of listed DMBs in Nigeria; and the other part of Ho_1 that EBT has no significant impact on the PBV was rejected and concludes that EBT does determine the PBV of listed DMBs in Nigeria. This indicates that EBT has an insignificant positive effect on the PER but a significant negative effect on the PBV, meaning firm value via PER is not determine by electronic fund transfer but the proportion of electronic fund transfer to price-to-book value ratio does negatively determine firm value. The apriori expectation of the impact of EBT on the PER and PBV is that it has a positive impact as the theoretical backing proposed by Rogers (1995) propagates the intervention of the diffusion of financial advancement are debated through definite networks among persons from a common gathering over time. Thus, the insignificant positive effect of EBT on PBV and the significant negative effect of EBT on PBV undermined this position. However, the result contradicts the existing literature. Akani and Aboiosa (2020); Malerba and Orsenigo (1997) found a strong connection between EBT on PER and PBV. On the contrary, Motwani (2021) found a negative effect of EBT on the PBV which is in line with the EBT/PBV result.

Ho_2IBT has no significant effect on the PER and PBV of listed DMBs in Nigeria.

Table 4.3 indicates that the IBT relationship with PER and PBV have coefficients of 0.1896 and 0.0049, t-values of 0.79 and 0.71 and P-values of 0.433 and 0.478 respectively. The magnitude of the impact of IBT on the PER and PBV indicates an insignificant effect, meaning that IBT has an insignificant positive effect on the PER and PBV (0.433>0.1 and 0.478>0.1). Subsequently, the link is statistically insignificant. Thus, we accept the Ho_2 that IBT has no significant impact on the PER and PBV and concludes that IBT does not determine the PER and PBV of listed DMBs in Nigeria. This means that the proportion of internet banking transfers in Nigeria does not determine PER and PBV. The apriori expectation of the impact of IBT on the PER and PBV is that it has a positive impact as the theoretical backing proposed by Silber (1983), the theory of constraint-induced financial revolution, which was highly regulated, posing restrictions on revolution and as a result, innovation may be limited in the banking sector. Thus, the insignificant positive effect of the results undermined this position. However, the result contradicts the existing literature as the studies of Akani and Aboiosa (2020); Malerba and Orsenigo (1997) found a strong connection between EBT on PER. On the contrary, Motwani (2021) found a negative effect of EBT on the PER.

Ho_3.MBT has no significant effect on the PER and PBV of listed DMBs in Nigeria.

MBT link with PER and PBV has coefficients0.801 and 0.021, t-values of 2.40 and 2.19, and p-values of 0.006 and 0.011 respectively. This connotes that MBT has a significant positive effect

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on PER and PBV (0.006 < 0.1 and 0.011 < 0.1). Subsequently, the relationship is statistically significant, indicating that an increase in the mobile banking transactions will yield a positive firm value. Thus, we fail to accept the Ho_3 that MBT does impact on firm value and conclude that there is a significant positive impact of MBT on PER and PBV of listed DMBs in Nigeria. The apriori expectation of the impact of MBT on the PER and PBV is to have a positive impact as the theoretical backing proposed by Rogers (1995). Thus, this result's positive effect reminds the DMBs that there is a need to enhance financial evolution of the sector via MBT to ensure increasing firm value. This result confirms the existing literature on this phenomenon. For example, the studies of Akani and Aboiosa (2020); Malerba and Orsenigo (1997) found a strong connection between MBT on PER and PBV. On the contrary, Motwani (2021) found a negative effect of MBT on the PER and PBV.

Ho_4.ATMhas no significant effect on the PER and PBV of listed DMBs in Nigeria.

ATM link with PER and PBV have a coefficients13.09 and 0.228, t-values of 3.18 and 1.92, and p-values of 0.002 and 0.08 respectively. This connotes that ATM has a significant positive effect on PER and PBV (0.002 < 0.01 and 0.081 < 0.01). Subsequently, the relationship is statistically significant, indicating that an increase in the automated teller machine transaction will increase firm value (PER and PBV). Thus, the inquiry fails to accept the Ho_4 that ATM does not impact on PER and PBV and conclude that there is a significant positive impact of ATM on PER and PBV of listed DMBs in Nigeria, which indicates that financial evolution in financial institution via ATM is worthwhile. The apriori expectation of the impact of ATM on the PER and PBV is to have a positive impact, as proposed by Rogers (1995). Thus, this result reminds the DMB that there is a need to enhance financial evolution of the sector using ATM to ensure increasing firm value. This result confirms the existing literature on this phenomenon. For example, the studies of Akani and Aboiosa (2020); Malerba and Orsenigo (1997) found a strong connection between ATM on PER and PBV. On the contrary, Motwani (2021) found a negative effect of ATM on the PER and PBV.

Ho_5 OLT has no significant effect on the PER and PBV of listed DMBs in Nigeria.

OLT relationships with PER and PBV have coefficients of 5.472 and 0.126, t-values of 2.09 and 1.67, and P-values of 0.039 and 0.096. This connotes that OLT has a significant positive effect on PER and PBV (0.039 and 0.096 less than 10%). Thus, the study fails to accept the Ho_5 that OLT does impact on firm value (PER and PBV), and conclude that there is a significant positive impact of OLT on PER and PBV of listed DMBs in Nigeria. The apriori expectation of the impact of OLT on the PER and PBV is to have a positive impact as the theoretical backing proposed by Rogers (1995). Thus, this result reminds the DMBs that there is a need to enhance financial evolution of the sector via OLT to ensure increasing firm value. This result confirms the existing literature on this phenomenon. For example, the studies of Akani and Aboiosa

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(2020); Malerba and Orsenigo (1997) found a strong connection between OLT on PER and PBV. On the contrary, Motwani (2021) found a negative effect of OLT on the PER and PBV.

Ho_6 POS has no significant effect on the PER and PBV of listed DMBs in Nigeria.

POS relationships with PER and PBV have coefficients of 2.772 and 0.388, t-values 2.48 and 2.63, and P- values of 0.005 and 0.007 respectively. This means that POS has a significant positive effect on PER and PBV (0.005 and 0.007 less than 1%).The magnitude of the impact of POS on the PER and PBV indicates a significant positive effect, meaning that POS has a significant positive impact on PER and PBV. Thus, the study fail to accept the Ho_6 that POS does not have significant impact on firm value and conclude that there is a significant positive impact of POS on PER and PBV of listed DMBs in Nigeria, indicating that financial evolution in financial institution via POS is worthwhile. The apriori expectation of the impact of POS on the PER and PBV is to have a positive impact as proposed by Rogers (1995). Thus, this result reminds the DMB that there is a need to enhance financial evolution of the sector via POS to ensure increasing firm value. This result confirms the existing literature on this phenomenon. For example, the studies of Akani and Aboiosa (2020); Malerba and Orsenigo (1997) found a strong connection between POS on PER and PBV. On the contrary, Motwani (2021) found a negative effect of POS on the PER and PBV.

Ho_7.ABT has no significant effect on the PER and PBV of listed DMBs in Nigeria.

Table 4.3 shows that ABT links with PER and PBV have coefficients of 3.336 and 0.388, t-values of 0.66 and 0.17, and P-values of 0.512 and 0.869 respectively. This relationship is statistically insignificant (0.512 and 0.869 are more than 10%). This means that ABT has an insignificant positive effect on PER and PBV. Thus, the inquiry accept the Ho_7 that ABT has no significant impact on the PER and PBV and concludes that ABT does not determine the PER and PBV of listed DMBs in Nigeria, meaning that the proportion of agent banking transaction in Nigeria does not determine firm value (PER and PBV). The apriori expectation of the impact of ABT on the PER and PBV is that it has a positive impact as the theoretical backing proposed by Silber (1983), the theory of constraint-induced financial revolution, which was highly regulated, posing restrictions on revolution and as a result, innovation may be limited in the banking sector. Thus, the insignificant positive effect of this result undermined this position. However, the result contradicts the existing literature on this phenomenon. For example, the studies of Akani and Aboiosa (2020); Malerba and Orsenigo (1997) found a strong connection between ABT on PER and PBV. On the contrary, Motwani (2021) found a negative effect of ABT on the PER and PBV.

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5.0 CONCLUSION AND RECOMMENDATIONS

Based on the findings from the analysis, the inquiry concludes that financial innovation in terms of MBT, AMT, OLT, and POS has a significant positive impact on firm value, particularly, PER and PBV, of listed DMBs in Nigeria. Recommendations are given subsequently based on the findings.

Even though EBT doesn't directly affect PER for DMBs in Nigeria, banks and investors should continue to invest in and promote electronic banking services instead of focusing too much on EBT volume because these services appear to positively influence market valuations through PBV. Banks should reevaluate the importance of internet banking in their valuation plans and take it into consideration as part of a larger digital banking strategy, as IBT has no discernible effect on either PER or PBV for listed DMBs in Nigeria. In order to improve overall bank performance and customer satisfaction, the focus should be on how internet banking combines with other services.

Banks should prioritise and improve their mobile banking services in light of MBT's strong beneficial effects on PER and PBV. This could entail boosting user adoption, adding features to mobile banking apps, and enhancing app functionality by devoting additional resources and integrate mobile banking performance as a crucial statistic in strategic planning and performance assessments. In light of the noteworthy benefits that ATMs provide for both PBV and PER, banks ought to think carefully about growing their ATM network and investing in cutting-edge ATM technology that provides sophisticated features beyond cash withdrawal, like deposit capabilities, bill payment, smart ATMs, and account management features, to improve the ATMs' value proposition to consumers.

Banks should see their online banking platforms as an integral part of their business strategy, one that continuously innovates to affect their market valuation rather than merely as a service providing. In order to maximize the benefits of online transactions on PER and PBV, this improved user experience and extended possibilities. Banks should see their point-of-sale (POS) products as an essential part of their overall business plan, as they have a direct influence on market value through the development of POS networks, technological advancements, and value-added services for retailers. Banks can ultimately boost firm value by doing this, since it will optimise the favourable effects of POS transactions on their PER and PBV.

Banks should carefully assess the broader strategic significance of agent banking in their operations, even when the studies show that ABT does not directly increase company value. Prioritising current agent banking networks, considering their possible repurposing to provide more significant services, and thoroughly assessing any upcoming investments in this field

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should be the main goals. Prioritising programmes and services that have been demonstrated to have a direct influence on PER and PBV is advised for banks, as they look for methods to include agent banking into these more beneficial services.

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