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INFRASTRUCTURAL ASSET AND FINANCIAL PERFORMANCE OF DEPOSIT MONEY BANKS

BY

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Abstract
Over the past decade, the profitability of banks in Nigeria has faced considerable challenges, with financial reports showing declining profitability, negative retained earnings, net losses, and fluctuating net profits. These financial strains have led to the acquisition of some banks by others, as well as mergers due to an incapability to meet stakeholders' needs, resulting in the eventual wind-up of several banks. This has significantly diminished the positive impact of deposit money banks in Nigeria. It is against this backdrop that the inspiration for this study arose. The primary purpose of this study is to examine the impact of infrastructural assets on the financial performance of deposit money banks listed in the Nigerian Exchange Group from 2014 to 2023. Secondary data were obtained from the audited annual reports of selected listed banks in Nigeria spanning from 2014 to 2023. The study employed multiple linear regression techniques to analyze the data collected, focusing on the relationship between infrastructural assets and financial performance.The analysis revealed that infrastructural assets have an insignificant negative effect on the financial performance of deposit money banks listed in the Nigerian Exchange Group, with a P-value of 0.497 and a t-value of -0.680. This suggests that infrastructural assets do not significantly influence the financial performance of the banks during the period under study. Based on these findings, the study concludes that infrastructural assets have no significant impact on the financial performance of deposit money banks listed in the Nigerian Exchange Group from 2014 to 2023. Therefore, the study recommends that banks should invest more in other intellectual capitals, such as human capital and capital employed efficiency, to enhance the financial performance of deposit money banks in Nigeria.
Keywords: Profitability, Infrastructural Assets, Financial Performance, Deposit Money Banks, Nigerian Exchange Group

Introduction

Over the past decade, the profitability of banks in Nigeria has faced significant challenges. Financial reports from this period consistently show declining profitability, negative retained earnings, net losses, and fluctuating net profits. According to the Nigeria Exchange Group (2019), Nigerian banks reported an average net loss of N196.6 billion between 2010 and 2019. Despite this general trend, certain banks like UBA experienced profit fluctuations with profits of N20.486 billion in 2014, N15.885 billion in 2016, and N12.839 billion in 2017. On the other hand, GTB reported negative retained earnings ranging from N85 billion in 2011 to N51 billion in 2012. Fidelity Bank and FCMB also reported fluctuating profits and negative retained earnings during this period (Nigeria Exchange Group, 2019).

The poor performance of several banks, such as Oceanic, Intercontinental, Afri, and Fin, led to their acquisition by other banks as reported by the Central Bank of Nigeria Bulletin in 2010. Skye Bank's underperformance resulted in its takeover and subsequent renaming to Polaris Bank (Central Bank of Nigeria Bulletin, 2008). More recently, Access Bank's poor performance led to its acquisition and rebranding as Diamond Bank (Central Bank of Nigeria Bulletin, 2019). Furthermore, the banking sector in Nigeria witnessed a reduction in total headcount from 96,975 at the end of 2019 to 94,498 by June 2020, with approximately 2,477 employees laid off in the second quarter of 2020 (National Bureau of Statistics, 2022).

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Given the highlighted poor performance of banks and the decision-making surrounding financial choices, there is a pressing need to address the impact of infrastructural assets on the profitability of Nigerian banks. Duru, Okpe, and Nwosu (2018) argued that infrastructural assets, organizational image, and research and development are crucial resources in the knowledge economy. Despite the shift from the industrial age to the information age, many companies still struggle to identify, measure, and manage their infrastructural assets effectively. Traditional accounting models, which were developed for industrial economy companies, often overlook these intangible assets, leading to a growing gap between market value and book value (Duru, Okpe, & Nwosu, 2018).

In the knowledge-intensive banking industry, infrastructural assets play a vital role in the value creation process. Conventional performance measurement techniques, based on traditional accounting principles, may not accurately capture the performance of companies with significant investments in infrastructural assets (Duru, Okpe, & Nwosu, 2018). Therefore, it is crucial to investigate whether conventional financial performance measurement techniques are influenced by infrastructural asset performance. The present study aims to explore the relationship between infrastructural asset performance and the financial performance of banks in Nigeria.

Infrastructural assets are perceived as the hidden value missing from financial statements, providing organizations with a competitive advantage. With the increasing gap between market value and financial performance, there is a growing recognition of the importance of including infrastructural assets in financial performance measures. The absence of infrastructural asset information in financial statements raises concerns about the reliability and adequacy of traditional accounting methods in the current age.

Wealth maximization is the primary objective of every business entity, and this can only be achieved through efficient utilization of both physical and infrastructural assets. Financial performance, proxied by net profit margin, serves as the measurement indicator in this study. Prabath (2022) argued that infrastructural assets, organizational image, and research and development are critical factors for firms to achieve their financial targets. The absence of these elements can hinder the performance of human capital in organizations.

Given the mixed and inconclusive findings from studies conducted in advanced economies, there is a need for further research using country-specific data to substantiate existing findings (Ifeanyi, 2022). Therefore, this study aims to answer the question: to what extent does the impact of infrastructural assets (organizational image, research & development, and physical infrastructure) affect the financial performance of listed deposit money banks in Nigeria.

Literature Review

Infrastructural Asset (IA)

Daniel (2019) defined infrastructural asset as an asset that serves as a tool, equipment and machine that enhance human capital in functioning well in an organization. It is a weapon and devices that when default, it absolutely results to failure of human capital in performing is duties in an organization. Infrastructural assets refer to all tangible asset that provide utilities or services to deposit money banks customer, which include software, hardware, telephone, data base and technology (Aggies, 2019). Infrastructural asset refers to long lasting capital asset that add value to land and tend to be part of a larger system, infrastructural asset is long lived capital asset that are stationary in nature and normally preserved for a specifically greater number of years than most capital asset (Jennifer, Bennett & Robert, 2019). Infrastructural asset comprises the basic system and services of banking industry such as computer, information, server and network, Automated Teller Machine (ATM), Point of Sales machine (Kornfelt, 2018). These assets need to be in place before the commencement of business by any sector of an organization. Infrastructural Assets play a paramount

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role in banking industry, in which their role cannot be overemphasis. Virtually, almost every bank in the banking industries invest huge amount on infrastructural asset so as to make them relevant in the industry and to be persistently compete among the competitor in the industry (Jerel, Slaughter & Jonathan, 2020; Khavandkar, 2018). The current (international public sector accounting standard IPSAS guidance) does not define infrastructural asset but specified that these assets meet the definition of property, plant and equipment and should be accounted for in accordance with IPSAS17 (Aggies, 2019). The standard also states that infrastructural assets usually display some or all of the following characteristics: they are part of system or network, they are specialized in nature and do not have alternative uses, they are immovable and they may be subject to constraints in disposal (Florin, Lubatkin & Schulze, 2019). Infrastructural asset in an organization includes: email system, telephone and communication system, personal computer, wireless devices, accounting, payroll and other enterprises system (Jerel, Slaughter & Jonathan, 2020).

Financial Performance Measurement

Financial performance is an indicator of the firm attainment of economic and financial objectives. The financial performance can be categories into profitability and market value measures. Profitability indicate efficiency with which operation of business are carried out, which can be measures with return on asset, return on equity, return on capital employed, return earned on fund and net profit margin etc. this study employed the net profit margin to measure the financial performance (Prabath, 2022; Meritt, 2023; Abeysiriwardana, 2022). Net profit margin ratio is a financial ratio used to calculate the percentage of profit a company product produces from its total revenue. It measures the amount of net profit a company obtain per naira of revenue gained. Net Profit margin is an instrument used to measures management efficiency that may be used to push firms toward better efficiency by presenting it as a major yardstick for assessing management efficiency (Meritt, 2023; Harward & Upton, 2012). Profit measuring is an inevitable aspect to every organization which cannot be ignored in every organization. In order to evaluate whether the standard level of performance has been met, the basic performance measurement can be assesses in various ways likes return on asset, return on investment, return on profit, return on average asset, return on average investment and net profit margin. This study uses net profit margin in measuring financial performance of deposit money banks in Nigeria.
Ifeanyi, (2022) Opined that financial Performance of the banking sector is a major subject that has received much attention in recent years. Many studies have evaluated the financial performance of banks under various operating parameters, thus; better quality management of resources is the main factor contributing to bank performance, as evidenced by numerous studies on the U.S. banking system and other western developed countries (Gan and Saleh, 2008, Stewart, 2020). Firm performance can be measured through different tools based on the financial and non-financial aspects. Performance measurement tools can help businesses evaluate their resource allocation processes to determine how resources can be better managed and distributed to the appropriate channels (Chen et al, 2005). Traditionally, many performance measures have been based around financial aspects, omitting important non-financial aspects including the importance of dynamic capability through accumulating research and development as well as marketing capability over time, to further enhance firm performance (Mondal & Ghosh, 2012). Besides that, the evaluation of the performance of banks, for example, usually employs financial indices, providing a simple description of the bank's financial performance alone is not enough for management to deal with the changing business environment. Kurfi (2017) financial statements are a common measure of banks generally in terms of financial health over a given period and they can be used to compare similar banks across the same industry or to compare industries or sectors in aggregation. The performance can be measured by using various methods such as accounting-based techniques, which consist of Return on Asset (ROA) and Return on Equity (ROE) (Meressa 2016). Another study by Poh (2018) shows that management researchers would prefer to use various accounting-based measures to measure performance. The most common variables are ROA and ROE. Ifeanyi (2022) in a study tried out several alternatives by gathering data on Return on Assets (ROA), Return on Equity (ROE), and Return on Investment (ROI).

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Theoretical Review

Resource Based View Theory

Wernerfelt (1984) proposed the resource-based theory (RBT), which was further – refined by Barney in 1991 and heavily borrows on Penrose's earlier work (1959). The core idea behind RBT is that a business is nothing more than the sum of its valuable, scarce, non-substitutable, and difficult-to-replicate resources and abilities (Barney, 1991). According to this theory, which is supported by studies of successful business strategies, a company's success is more likely to stem from its own unique set of assets than from any particular industry's structure (Guthrie, et al., 2004). Hall (1992) and Grant (1996) divided resources into three categories: tangible assets, intangible assets and human resources, with human beings being considered the most valuable asset. In terms of potential investment and effective resource usage, RBT elucidates the study's underlying issues. The core idea behind resource-based theory is that every company has its own special collection of assets that provide it an edge over rivals in the long run. Edom et al. (2015) provided a useful framework by classifying an organization's assets as either material or human. Human resources include of employees' experience, knowledge, skills, and social interactions, whereas physical assets include plants, technical equipment, land, and buildings. Organizations are heterogeneous entities that rely on particular knowledge assets to improve their financial and nonfinancial performance, and advocates of the Resource-Based Theory argue that efficient utilization of intangible assets can lead to competitive advantage and improved financial performance (Lazzolino & Laise, 2013). This research is based on the resource basis idea and capture both independent and dependent variable.

Score Card Theory

Balanced scorecard theory was propounded by Robert Kaplan and David Norton (1992) postulated the theory of a balanced scorecard which assumes that there are four perspectives in which the performance of a company can be measured. These perspectives include financial, customer, internal, and learning perspective (Farshad, 2012). This theory can be understood as a management system, which is structured according to the logic of the management circle ("plan–do-check-act"). Kaplan and Norton position the balanced scorecard as a tool for organizations to translate strategies into action. When conceiving the balanced scorecard, Kaplan and Norton, maintained that companies lack sophisticated tools for the management of intangible or qualitative asset (e.g., customer satisfaction, processes quality, infrastructures, knows how). Intangible assets, however, seem vital in order to stay competitive in the future. It is a theory that enables management to translate an organization strategy into performance objectives, measure, target and initiatives (Macro, 2006). Balance scorecard is a strategy performance management tool – a well structure report that can be used by managers to keep track of the execution of activities by the staff within their control and to monitor the consequences arising from these actions. The phrase balanced scorecard primarily refers to a performance management report used by a management team and typically this team is focused on managing the implementation of a strategy or operational activities. (2GC balanced scorecard usage 2020 survey). This theory is a management system that enables organization to translate the vision and strategy into action (Chakrabarty, 2007). This system provided feedback on internal business processes and external outcomes to continually improve organization. Financial data reflect an organization past performance; therefore, they may not accurately represent the current state of the organization or what is likely to happen to the organization in the future. The theory was originally developed and propounded by Robert Kaplan and David Norton in (1992). In 1990, Kaplan and Norton led a research study of a lot of companies with the purposed of exploring the new method of performance measurement. The scorecard theory primarily aims as measurement system which is concern with performance of an organization be it nonprofit and public organization. This theory is strictly on the measurement of private company, public company and nonprofit organization financial performance which is the key and backbone of any organization or company (Nicholas, 2006).

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This theory was developed to anchor the financial perspectives, customer perspective, internal perspective and learning perspective. The aforementioned above are the primary objective of the theory. Furthermore, the theory is used to accomplish the following management process; clarifying and translating vision and strategy, communicating and linking strategies objectives and measures, planning, setting target and aligning strategic initiatives and enhancing strategic feedback and learning, both dependent and independent variable are capture by this theory.

Empirical Review

Cliffort, Etonye, Siminalayi and Ngoze (2023) investigate intellectual capital on the financial performance of deposited money banks in Nigerian. The model and collected data were analyzed using simple regression analysis. The research revealed a significant relationship between structural capital and return on asset; it also found a significant association between human capital and earnings per share. Akinsulire (2022) investigate intellectual capital cost on performance of selected deposit money banks quoted in Nigerian. Expo factor design was employed and multiple regression techniques were used to determine the existence of relationship between the variables. The result revealed that human capital adequacy, relational capital adequacy and capital employed adequacy were all positively and significantly related to return on asset. Ogunbanjo (2022) examined structural capital and performance of small scale business in Alaba International Lagos State. Correlation analysis was employed as method of data analysis. The result indicated that structural capital has a positive and significant relationship with operational performance and growth of small business in Alaba International Market. Lambe, Ame and Dzugwahi (2022) examine the effect of intellectual and natural capital on financial performance of listed multinational companies in Nigerian. Multiple regression analysis was used for the data analysis. The result revealed that intellectual capital enhances financial performance. Awotomilusi, Donatus and Ogunleye (2022) examined intellectual capital and financial performance of selected consumer goods of manufacturing firms in Nigerian. Multiple regression analysis were used for the data analysis. The result revealed that human capital, structural capital and relational capital significantly and positively affect the financial performance of Nigerian consumer goods manufacturing companies. Salman (2022) examined intellectual capital on financial performance of Nigerian companies. Pearson correlation and regression analysis were used for the data analysis. The study revealed positive and significant relationship between structural capital efficiency, return on equity and return on asset. The study concluded that intellectual capital efficiencies influence companies' performance. Aminat, Anthonia and Wakeel (2022) examined intellectual capital efficiency of listed banks in Nigerian. Tobit regression technique analysis was used for data analysis. The result reveals that banks sizes and director shareholding positively impact intellectual capital efficiency, while market and ownership concentration debar the attainment of optimum intellectual capital efficiency. Seyedeh, Kamran, Seyed, Hakimeh and Yeser (2022) examined effect of intellectual capital on business performance through the use of customer knowledge management in the branch's banks in Iran. The study used Likert scale to analyses the data obtain, the finding revealed that intellectual capital which comprises human capital, structural capital and relational capital have a significant impact on business performance.

Husham and Ghodratallah (2022) examined relationship between intellectual capital and financial performance of companies listed in Iraq stock exchange. Data obtain was tested using regression model. The result revealed there is no significant difference according to the finding of this study. Shahid, Ghulam and Martina (2022) examined intellectual capital and financial performance. Modified value-added intellectual coefficient model regression analysis is performed. The result revealed that structural capital and capital employed have a significant impact on Pakistani and Indians firms. Hesniati and Erlen (2021) examined the influence of intellectual capital on organization performance of rural bank in Batam city. The study used path coefficient test to analyses the data obtain from 54 director of the rural bank. The result of this empirical study indicates that there is a significant relationship between structural capital, customer capital, human capital, technology capital and spiritual capital on organization

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performance in Batam city. Meanwhile, social capital and spiritual capital show no significant relationship to organization performance in Batam city. Gallegos, Contreras, Vargas, Prada and Yucra (2021) examined the impact of intellectual capital on financial performance of electricity industry in Argentina. The estimates are considered using a panel analysis and the generalized methods of moments and the fixed effect are used. The results are not conclusive when estimating a contemporary relationship between human capital, relational capital and structural capital and financial performance. However, a significant positive relationship is observed when lagged measures are used for each proposed measure of intellectual capital. Xiao-bing, Tran and Eugene (2021) examined the impact of intellectual capital value – added intellectual capital (VAIC) and its component on financial performance in term of return on asset and return on equity. A total of 149 Vietnamese firms comprising of 108 financial firms and 41 pharmaceutical firms were examined. The finding revealed VAIC and HCE show beneficial impact on both financial performance measures.

Hadeel and Asma (2021) assess intellectual capital and financial performance of market banks in Jordanian. Two empirical models were designed to test the effect of intellectual capital. The result revealed that there is a significant and positive relationship between intellectual capital and banks profitability presented by return on asset. Aziz, Ejaz and Anan (2021) investigate intellectual capital efficiency on banks performance the study employed two step system generalized of moment estimator to analyze the data collected from 129 Islamic Banks. The result indicate that structural capital efficiency and relational capital efficiency are the essential drivers of value in achieving high performance at Islamic banks while human capital efficiency negatively affect the performance of Islamic banks.

Sylvia, Mariolin and Rudiawie (2021) examined the role of intellectual capital on financial performance of SME in Jayapura city. The study consists of 54 respondent who had business fields consisting of culinary businesses, fashion, daycare services, lodging services and futsal fields. The analytical tools is used in Smart PLS 3 by looking at the measurement of the outer model and inner model. The result shows that the component of human capital and relational significantly affect the financial performance of SME. Jian and Yizhang (2021) investigate intellectual capital measurement matter in financial performance in Chinese agricultural listed companies. The paper used the original value added intellectual coefficient model and the modified model to measure intellectual capital. The result shows a positive and significant relationship between intellectual capital and financial performance. Adiputra, Suprastha and Affandi (2020) investigate the influence of intellectual capital on the market value of food and Beverage Company in Indonesia. The study used purposive sampling method with 34 total sample companies and applies the value added intellectual capital method in carrying out its measurements. The data was analyze using convergent validity, heterotrait ratio and path analyses. The result shows that intellectual capital as a whole has significant positive effect on market value. Human capital has significant positive effect on market value. Structural capital does not significantly affect the market value of the company. Capital employed has significant negative effect on the market value.

Alqershi, Zakaria and Sany (2020) assessed the intervening effect of structural capital on the relationship between strategic innovation and manufacturing of small and medium enterprises in Yemen. The study sample is 284 of small and medium enterprises of manufacturing company in Yemen, the data obtained from the various manufacturing company were analyze using partial least squares – structural equation modeling. The result revealed there is a significant influence of strategies on performance so as structural capital too. Abdelmohsen and Gehan (2020) investigate impact of intellectual capital on firm's financial performance. The study employs canonical correlation analysis as a unique statistical method to analyze data gathered from 29 sampled companies, representing 145 firm-year observations over the five years. The finding revealed that the component (human capital, customer capital and structural capital) have positive correlation with firms performance except for the labor costs variable which has a negative correlation with firms performance. Human capital is also found to be the most significant component of the intellectual capital, while structural capital is reported as the lowest effect on the firms' performance. Gunadi, Wiksuana, Purbawanaga and Rahyuda (2020) evaluated the impact of structural capital and company size on growth

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of firm value through financial performance with good corporate governance on real property estate business in Indonesia. Data collection is done by distributing questionnaires offline and online using Google form that has been tested, the data analyses techniques used is partial least square – structural equation modeling (PLS – SEM) and descriptive statistic. The finding revealed that the mechanism of good corporate governance in the form of board affiliation, the size of the board of directors, and the presence of an audit committee moderate the decision of capital structure and firm size that influence financial performance and firm value.

Hafiz, Sadia, Faiza, Abdul and Nazish (2020) examined impact of intellectual capital on financial performance of food and personal care and textile sectors in Pakistan. Data obtain was analyze using multiple regression analysis and paired sample T-test. The finding proposes direct and significant influenced of capital employed efficiency on selected firms' financial performance. Dulanjani and Priyanath (2020) evaluated intellectual capital and business performance of self – employers in Sri Lanka. The data were collected from 115 self – employers in Ingiriya divisional secretary division in Sri Lanka, the data were analyzed using partial least square – structural equation modeling (PLS-SEM). The findings revealed that human capital and relational capital have a positive and significant impact on the business performance of self – employers except structural capital. Reza (2020) examined relationship between intellectual capital and financial performance in Iranian companies. Value added intellectual coefficient method has been used for measuring the value based performance of the company. The intellectual capital (human capital and structural capital) and physical capital of the company have been analyzed and their impact on corporate performance has been measured using multiple regression technique. The findings from the empirical analysis indicate that the relationship between the performance of a company intellectual capital and profitability, employee productivity and growth in sales are informative. Hapsah and Bujang (2019) assessed the intellectual capital influence on financial performance of construction, finance and plantation firms in Malaysian. Data were drawn from a panel consisting of 108 firms and the data were analyses using descriptive analyses and Pearson correlation matrix. The findings revealed significant and positive association between intellectual capital and financial performance in construction and finance. Whereby, in plantation, the result indicated significant but negative association. On the component of intellectual capital, the finding revealed that firms in finance employ human capital and structural capital to create value. On the contrary, a negative relationship was documented between human capital, structural capital and financial performance in construction and plantation. Nevertheless, the result indicated that capital employed is significant and positively associated with financial performance in all the three industries implying that physical capital remained the most influential value drivers in generating firms profitability regardless of the industries types.

Wiagustini, Artini and Ramantha (2019) examined intellectual capital as a base for determining capital structure and financial performance of handicraft industry in Indonesia. The sampling company is 82 of small handicraft in Gianyar Bali in Indonesia. The analyses model used was Partial least square, the finding revealed that intellectual capital which comprises human capital, structural capital and relational capital has a positive effect on capital structure and financial performance; and capital structure has a positive effect on financial performance. Mohammad (2019) investigated the effect of intellectual capital on financial performance of non-financial firms in Pakistan. The study sample 100 non-financial firms listed on Pakistan stock exchange between 2007 to 2016, the study also used ordinary least square regression in analyzing the data obtain from Pakistan stock exchange. The finding revealed firm performance has positive and significant impact on intellectual capital of non-financial firms of Pakistan.

Mohammad, Shah, Khan and Afridi (2019) evaluated intellectual capital on financial performance of banks in Pakistan. The data is obtained from annual report of banks listed in Pakistan stock exchange; the data were analyzed using multiple regression techniques and Pearson correlation. The findings revealed that value added intellectual capital is positively associated with return on asset, while the three component of value added intellectual capital showed mixed result on banks performance. Christian and Oscar (2019) examined the impact of intellectual capital on financial performance and value added of the production in Chile. Multivariate techniques was used to test the data

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obtain; the finding revealed value added coefficient of intellectual capital is a determining factor in the financial performance of companies. Jian and Binghan (2018) examined intellectual capital financial performance and companies' sustainable growth on manufacturing industry in Korean. Data collected from 390 manufacturing companies were analyzed using multiple regression models and the result revealed that intellectual capital has a positive impact on financial performance and companies' sustainable growth. In addition, companies' performance and sustainable growth are positively related to physical capital, human capital and relational capital. Nawaz (2018) assessed the intellectual capital performance profiles on financial performance of Islamic banking in United Kingdom. The data obtained was analyzing using regression analyses. The findings suggest a positive relationship between physical and financial capital employed efficiency, human capital efficiency and performance. Helin, Manurung and Husnataria (2018) examined relationship between value added capital employed, value added human capital, structural capital value added and financial performance of company in Indonesia. The method of the sample was purposive with total 34 sample analyze by using panel data regression, multicollinearity test, heteroscedasticity test and autocorrelation test. The result stated that value added capital employed has no effect on return on asset, value added human capital has an effect on return on asset and structural capital value added has an effect on return on asset.

Filipe, Zelia and Helena (2018) investigate effect of intellectual on small and medium sized hotel financial performance for the period between 2007 and 2015. Using a sample of 934 Portuguese small and medium sized hotels, the study adopted GMM system estimator, to analyze a dynamic panel data. The finding suggested that intellectual capital component provide positive impact on hotel financial performance. Filipe, Serrasqueiro and Alves (2018) investigated the relationship between intellectual capital and financial performance of small and medium enterprises hotel in Portugal. Using a sample of 934 Portuguese small and medium size hotels, the study adopted the GMM system (1998) estimator to analyze a dynamic panel data, the result suggested that intellectual capital component i.e., human capital, structural capital and relational capital provide a positive impact on hotel financial performance. Human capital and relational capital seemed to be key element for the success of hotels, being the basis of service quality in the hotels sectors. Furthermore, the results showed that human capital and structural capital are capitalized by the establishment and maintenance of long – term relationship with the key stakeholders. Erinos and Yurniwati (2018) examined influence of intellectual capital and financial performance of manufacturing companies in Indonesia. Data were analyzed using multiple regression and the findings revealed intellectual capital has positive effect to financial performance but the effect is not significant.

Abiodun (2019) examined the effect of structural capital efficiency on financial performance of listed oil and gas firm in Nigeria, for the period 2006 to 2018, nine firms were sampled. Data were obtained from the audited annual report of the firms and regression analyses were used for inference and test of hypothesis. The result of the regression analyses revealed that both intellectual capital efficiency and external capital efficiency have positive and significant effect on return on asset thus implying the prominence of these two variables in determining the financial performance of listed oil and gas firms in Nigeria. Saifullahi (2019) examined intellectual capital on the performance of consumer goods firms listed in Nigeria stock exchange. The data obtain were analyses using multiply regression analyses and the result revealed that value added intellectual coefficient has a significant positive effect on return on asset whereas market to book value was found to have negative impact on the return on asset. Nnubia, Ndu and Nwoleji (2019) examined effect of intellectual capital on performance of non-financial firms in Nigeria. A sample of 21 Nigerian non – financial firms listed on Nigeria stock exchange for the period of 10 years (from 2007 – 2016) was selected. The data collected were analyzed using ordinary least square method. The results show that for the Nigerian listed non – financial firms, the explanatory variables – capital employed efficiency, human capital efficiency and structural capital efficiency has positive significant effect on dependent variable – earning per share and market to book value (performance).

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Victor and Ebieri (2019) investigated effect of intellectual capital cost on financial performance of listed commercial banks in Nigeria during the period 2007 to 2016. The data were obtained from cross section of three banks from ten (10) year annual report, the data were analyses using ordinary least squares. The findings proved that individually, human capital efficiency has positive significant relationship with return on equity while structural capital efficiency and capital employed efficiency individually have positive but insignificant relationship with return on equity. The study therefore substantiated that intellectual capital cost significant affect return on equity and therefore concludes that intellectual capital cost has significant effect on financial performance of listed commercial banks in Nigeria.
Chitom and Cheluchi (2018) examined intellectual capital on performance of Nigeria banks listed in stock exchange. The data were analyses using Pearson coefficient correlation statistical tools to test the hypothesis. The result revealed that there is a relationship between values added intellectual coefficient indices human capital efficiency, structural capital efficiency, capital employed efficiency and employee productivity in Nigeria bank. Another finding is that there is a negative relationship between values added intellectual coefficient indices human capital efficiency, structural capital efficiency, capital employ efficiency and growth in revenue of banks in Nigeria. Onyekwelu, Osisioma and Ugwuanyi (2018) evaluate the impact of human resources on financial performance and market valuation of four (4) quoted banks in Nigerian. Data were analyzed using a percentage and chi – square statistical tests. The result shows that when investment in human capital are treated as asset and capitalized, there is a significant increase in bank net worth as against the current practice where investments in human resources are deal with as ordinary revenue expenses there by leading to gross undervaluation of banks' income statement and statement of financial position.

Methodology

This chapter covers the plan, method and techniques that were adopted in the study. It also discusses the research designs, the population of the study, sources and types of data, the technique of data analysis, and model specification.

Model Specification

The study evaluates the relationship between structural capital and financial performance of deposit money banks listed in Nigerian exchange group. The model of Al–Hawajreh (2013) was adopted and modified. The model was presented as.

$FP_{it} = \beta 0 + \beta_1 IA_{it} + U$……...……3.1

Where:

FP = Financial performance

IA= Infrastructural Asset

$\beta_1 - \beta_3 =$ parameter of the model to be estimated, which represent the slope of model and measure the amount of change in the dependent variable caused by each of the independent variables.

FP = Financial Performance proxy with (net profit margin)

SC = Structural Capital proxy with Infrastructural Asset (IA).

Research Design/Population

An ex–post factor research design was used in this study. Ex- post facto research is conducted after an event has occurred; data has already been collected and cannot be changed or controlled (Adefila, 2014). The study population is (23) twenty-three deposit money banks listed in Nigerian Exchange Groups floor as of December 31, 2023, eight

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out of the twenty-three are commercial banking license with international authorization, fifteen out of the twenty-three are commercial banking license with national authorization. The study population are the aforementioned above.

Sampling Technique and Sample Size

The study used a census sampling technique, sampling all of the deposited money banks. The sample sizes for the study comprises of the twenty-three (23) deposit money banks listed in Nigerian Exchange Group floor as of December 31, 2023.

Sources and Data Collection Method

The main data source for the study was the audited published annual financial statements of all deposit money banks listed in Nigerian exchange group floor as of 31 December 2023. The secondary source of data was used because data for all of the variables were found in the audited financial statement of deposit money banks.

Method of Data Analysis and Estimation Techniques

For systematic analysis of the data collected, both Descriptive method and inferential statistical tools of analysis were employed for this study. The inferential statistics used was multiple linear regressions. This technique was used for both dependent and independent variable.

Results

Table 1:
Descriptive Statistics of Variables (Dependent and Independents)

Variables	Mean	Std. Deviation	N
Financial Performance	.561	.705	310
Infrastructural Asset	447,597,459.503	1,611,168,660.663	310

The table above presents the descriptive statistics of the variables under consideration. It indicates the mean and standard deviation of each variable in our data set, so the financial performance has mean value of 0.561, which signifies the average financial performance of banks under study, while its standard deviation value is 0.705. This statistical indicator shows that data points are close to the mean because the standard deviation value is relatively small compare to the value of its mean. The table shows that average amount of 14 million is spent on research and development among the selected banks, if this is compared to its standard deviation of 81 million which is large relative to the mean value. It therefore implies that the amount of money spent on research and development among the selected banks is distant from the mean (meaning that the average amount indicated by the mean underestimates the actual (observed) amount spent on research and development by the observed banks. The same thing is applicable to amount of infrastructural asset (Mean = 447 million and S.D. = 1.6 billion) and organization image (mean = 480 million S.D. = 4.2 billion) presented in the table. Their standard deviation is large relative to their mean and this signifies that the observed amount of infrastructural asset, organization image and research and development are distant from their respective average amount indicated by the mean in the above table. In all, it can be said that mean is not an accurate representation of the data set. This also gives justification for the use of proposed method of statistical analysis (Multiple Linear Regression).

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Multi-Collinearity Test

Table 1:
Results of Collinearity Diagnostics (Variance Inflation Factor)

Variable	VIF	1/VIF
Infrastructural Asset	1.325	.755

The results in table provided evidence that all the three independent variables have no strong inter-correlations and inter-associations with one another based on the collinearity statistics of Variation Inflation Factor (VIF), which for all the independent variables are between 1 and 10, suggesting no problem of multicollinearity.

Table 3:
Breusch-Pagan/Cook-Weisberg IM-test

Breusch-Pagan/Cook-Weisberg heteroskedasticity
Ho: Constant variance
Variables: fitted values of Financial Performance
$chi^2(1)$ = 0.05
Prob>chi^2 = 0.8302

The Breusch-Pagan/Cook-Weisberg test for the data collected was carried out and the result is presented above. It shows a heteroskedasticity test for the assumption of constant error variance. It does this by examining whether squared standardized residuals are linearly related to predicted values. As seen above, no reason to reject the null hypothesis of constant variance ($p = 0.8302 > 0.05$). That is, we see no significant heteroscedasticity and therefore, there is constant variance.

Table 4:
Cameron & Trivedi's Decomposition of IM-test

Source	chi^2	Df	P
Skewness	1.610	3	0.658
Kurtosis	1.240	1	0.265
Total	3.220	13	0.997

Table 4 above presents a normality test, it made use of the skewness and kurtosis statistics to formally evaluate the null hypothesis that the sample at hand came from a normally-distributed population. From the results of the test presented above, no reason to reject the null hypothesis that our data is from normally-distributed population skewness ($p = 0.654 > 0.05$) and Kurtosis ($p = 0.265 > 0.05$).

Table 5:
Model Summary

Mean dependent var	0.561	SD dependent var	0.705
R-squared	0.003	Number of obs	310

F-test	0.328	Prob > F	0.805
Akaike crit. (AIC)	664.935	Bayesian crit. (BIC)	672.408

The Table 4 above describes the overall model, provides very important information about the model and it shows whether the model is successful in predicting financial performance. The above model table refers to predictor (Infrastructural Asset) are used in predicting Financial Performance. The column labeled R contains value of the multiple correlation coefficients between the predictors and the outcome which equals 0.57. i.e., when the variables are used as predictors, the correlation between the predictor and financial performance is (0.057). The next column gives us a value of R^2, which is a measure of how much of the variability in the outcome is accounted for by the predictors. For this model the R^2 value is 0.003, which means that Infrastructural Assets account for 0.3% of the variation in financial performance of deposit money banks listed in Nigerian exchange group for the financial years of 2014 to 2023. The R^2 value of 0.003 denotes that the predictor can account for 0.3% of the variation in financial performance. In other words, if we are trying to explain why financial performance of one bank is better than that of others, there might be many factors that can explain this variation, but our model, which includes three predictors, can explain just 0.3% of it. This means that 99.7% of the variation in financial performance cannot be explained by independent variables considered in this study. Therefore, there must be other variables that have an influence also.

Table 4:
Model Parameters (Coefficients)

Financial Performance	**Coef.**	**St. Err.**	**t-value**	**p-value**	**[95% Conf. Interval]**	
Infrastructural Asset	-1.95e-11	2.87e-11	-0.68	0.497	-7.61e-11	3.70e-11
Constant	.5618586	0.0418844	13.41	0.000	0.4794406	0.6442765

Hypothesis One: *Infrastructure asset has no significant effect on financial performance of deposit money banks listed in Nigerian exchange group*

Results in Table 4 revealed that the partial elasticity coefficient of infrastructural asset with respect to financial performance is -1.955-11, indicating that infrastructural asset has insignificant negative effect on the financial performance of the selected listed deposit money banks in Nigerian Exchange Group. This value indicates that as the amount of infrastructural asset increases by one unit, financial performance decrease by -0.1955-10units. Infrastructural asset is measured in millions of Naira; therefore, for every N1,000,000 increase in infrastructural asset, a reduction of 0.0000195 (-0.0000000000195484 x 1,000,000 = -1.95-5) in financial performance take place.

Discussion

The findings reveal that infrastructural asset does not have a significant impact on the financial performance of listed deposit money banks in Nigerian Exchange group. The findings is similar to that of Saifullahi (2019), Ahmad & Mushraf (2011), Salman et al. (2012), Ogbo et al. (2013), Ameneh et al. (2015), Anuoye (2016), Garlinia et al (2018), Sardo et al. (2018), Victor and Ebieri (2019), Adiputra et al (2020), Alqershi et al (2020), who all found insignificant, but differs from Chitom and Cheluchi (2018) as well as Dulanjani and Priyanath (2020), the study find out positively and significantly relationship between factors. In general, the findings demonstrate that structural capital has no significant impact on financial performance of deposit money bank listed in Nigerian exchange group. Which are the same with the findings of Garlinia et al (2018), Dulanjani and Priyanath (2020), Ameneh et al. (2015), Ahmad and Mushraf (2011), Saifullahi (2019), Anuoye (2016) Sardo et al. (2018), Ogbo et al. (2013), Victor and Ebieri (2019),

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Adiputra et al. (2020), Alqershi et al. (2020), but not to Lambe, Ame and Dzugwahi (2022) and Onuchi and Jones (2019).

Conclusion

The analysis presented in Table 4.5 provides insightful information regarding the relationship between infrastructural assets and the financial performance of deposit money banks listed in the Nigerian exchange group for the financial years 2014 to 2023. The model, which uses infrastructural assets as predictors for financial performance, yielded a multiple correlation coefficient (R) of 0.57. However, the R^2 value, which measures the proportion of the variability in the outcome accounted for by the predictors, was found to be 0.003. This indicates that infrastructural assets can only account for 0.3% of the variation in the financial performance of these banks. In simpler terms, while infrastructural assets play a role in determining the financial performance of banks, they explain only a minimal portion of the overall variability. Given the low R^2 value of 0.003, it is evident that 99.7% of the variation in financial performance remains unexplained by the infrastructural assets considered in this study. This suggests that there are other influential factors that are not captured in the current model, which significantly impact the financial performance of banks.

Recommendations

Inclusion of Additional Variables: Future research should consider incorporating other relevant variables such as organizational culture, management efficiency, customer satisfaction, and macroeconomic factors, which might have a significant influence on the financial performance of banks.

i. Deep Dive into Infrastructural Assets: While the current study has considered infrastructural assets as a predictor, a more detailed analysis focusing on the specific components of infrastructural assets, such as technological infrastructure, physical infrastructure, and organizational image, could provide more nuanced insights into their impact on financial performance.
ii. Enhanced Measurement Techniques: Given the intangible nature of infrastructural assets, more sophisticated and comprehensive measurement techniques should be employed to accurately capture their value and impact on financial performance.
iii. Strategic Focus on Intangible Assets: Banks should recognize the increasing importance of intangible assets, including infrastructural assets, in creating competitive advantages and driving financial performance. Therefore, there is a need to invest strategically in these assets to enhance their contribution to overall bank performance.
iv. Regular Performance Evaluation: Banks should regularly evaluate and monitor the performance of their infrastructural assets to ensure optimal utilization and alignment with the organization's strategic objectives.
v. Policy Implications: Regulatory bodies and policymakers should also consider the findings of this study in their policy formulation processes. There should be a focus on encouraging banks to invest in and effectively manage their infrastructural assets to ensure stability and sustainability in the banking sector.

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