E-ISSN: 1115 - 8530 P-ISSN: 3026-8958
MPRI-JFRBD | INTERNATIONAL JOURNAL OF FINANCIAL RES. AND BUSINESS DEVELOPMENT
VOL. 06 NO. 7 – OCTOBER, 2024

STRUCTURAL CAPITAL EFFICIENCY AND FINANCIAL PERFORMANCE: EVIDENCED FROM QUOTED NONFINANCIAL FIRMS IN NIGERIA

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DOI Unique ID: 10.70382/mejfrbd.v6i7.003

Abstract

The study examined how structural capital efficiency affected Nigerian publicly traded companies' financial results. It used a sample of Nigerian companies to examine the relationship between structural capital efficiency and important financial indicators, such as ROA and ROE. A descriptive study design was employed, utilizing an ex-post facto methodology. Twenty-two companies were purposefully chosen from a total of 151 publicly listed firms in Nigeria for this analysis, focusing on their financial statements. The sample included 11 manufacturing firms, 5 ICT companies, 3 health services providers, and 3 oil and gas enterprises, spanning a period from 2013 to 2022. The analysis made use of panel data techniques and a number of post-estimation tests, such as random effects models, fixed effects, and Ordinary Least Squares (OLS). In order to maintain accuracy and handle endogeneity concerns, the SGMM was also utilized. The results of the study indicated that while SCE had a positive, non-significant influence on ROE (p-value = 0.3886, β = 0.168, t-value = 0.8638), it had a significant positive effect on ROA (p-value = 0.0029, β = 0.0206, t-value = 3.0141). These results showed that while structural capital efficiency had a favorable but statistically insignificant effect on ROE, it greatly increased ROA. The study's conclusions suggest that management should give structural capital development top priority in order to enhance financial results since it has a positive effect on the financial performance of Nigerian businesses.

Keywords: Structural Capital, Return on Asset, Return on Equity and Financial Performance.

Introduction

A company's financial situation is typically assessed using the term "financial performance" during a specified period of time, offering a basis for comparison both within and across industries. In recent years, investing in structural capital has gained importance as a key

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factor for achieving competitive advantage and enhancing organizational performance (Wil, 2024). Structural capital (SC) includes a company's frameworks, databases, and methodologies that support both employee productivity and overall organizational efficiency (Kasoga, 2020).

Previous research has suggested that structural capital (SC) can improve financial outcomes by showing a positive correlation between a firm's performance and SC (Appah et al., 2023; Ogiriki & Oyakemeagbegha, 2022; Znar et al., 2022; Ali et al., 2022; Aluwong, 2022). However, a number of research found a strong negative correlation between SC and corporate performance, including those by Aybars and Oner (2022) and Pertiwi et al. (2023).

This study looks at how structural capital affects the financial performance of publicly traded companies in Nigeria. Through an examination of the correlation between financial indicators and structural capital, significant perspectives are aimed at providing to decision-makers in government, industry, and business. It is anticipated that the results will assist Nigerian businesses in improving their financial performance and cultivating closer ties with stakeholders.

Statement of the Problem

A company's success is often measured by the assets supporting its operations, which are essential for enhancing financial performance and achieving long-term goals (Leonita, 2020). Financial metrics are essential for assessing a company's capacity to maintain its operations and achieve measurable outcomes (Anindya, 2023). Studies on structural capital in Nigeria are still few, despite the fact that the relationship between structural capital and corporate performance in industrialized and developing nations has been extensively researched.

According to Soewarno et al. (2020), the majority of previous research analyzes this link using different accounting-based performance criteria. In light of the fact that Nigeria's economy is developing, it offers an important context for examining how structural capital impacts firm performance (Mohammad et al., 2023). Furthermore, the majority of previous empirical research has focused on certain industries, including banking, manufacturing, oil and gas, ICT, and health services. This sectoral focus draws attention to the need for more extensive study to fully evaluate the impact of structural capital in a variety of industries.

This study intends to bridge the research gap by assessing the effect of structural capital on the financial performance of Nigerian companies using key measures like ROE and ROA. It looks at several structural capital elements, including R&D, infrastructure, databases, software, hardware, business culture, and other factors that boost employee productivity. 22 firms from the Nigerian Stock Exchange are included in the analysis, which is divided into four industries: manufacturing (11 companies), ICT (5 companies), health services (3 companies), and oil and gas (3 companies). Financial statements from 2013 to 2022 were reviewed, based on the availability of disclosures on structural capital and the companies' annual audited financial reports.

Research Questions

The following research questions are the focus of this investigation:

1. How does SCE impact ROA of companies in Nigeria?
2. To what extent does SCE influence ROE of companies in Nigeria?

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Aim and Objectives of the Study

The primary objective of this research is to investigate the effect of structural capital on the financial performance of companies in Nigeria. The specific objectives are as follows:

i. to determine the impact of SCE on ROA of firms in Nigeria and,
ii. to examine the importance of SCE on ROE of firms in Nigeria.

Statement of the Hypotheses

To achieve the research aim and objectives, the following hypotheses were developed.

Ho1: SCE has no significant influence on ROA of firms in Nigeria.
Ho2: SCE has no significant influence on ROE of firms in Nigeria.

Conceptual Review

Structural Capital Efficiency (HCE)

Structural capital includes a wide range of components that provide competitive advantages to companies, which encompasses discoveries, structures, databases, information, frameworks, designs, and policies (Gupta et al., 2020). Additional factors that increase employee productivity are functions, hardware, software, R&D, infrastructure, business culture, and intellectual property rights (IPR) (Isma et al., 2024). In the fast-paced business world of today, characterised by rapid changes, organisations aiming for competitive edge must acknowledge the heightened value of intangible assets over traditional tangible ones. Structural capital pertains to the internal mechanisms and procedures adopted by an organisation for the distribution, knowledge management and communication in science and technology (Soewarno and Tjahjadi, 2020). Measuring structural capital facilitates the creation of wealth for the company by supporting human capital and persists even after employees leave the organisation (Pouraghajan *et al.* 2013). When all human resources have left the business, what remains is known as structural capital.

Financial Performance

The concept of performance has emerged as a significant challenge globally, leading to numerous studies investigating its impact on organizations and firms. One common statistic used to assess a business's overall stability and success over a given time period is financial performance, it enables comparisons within the same industry or across different sectors. The evaluation of financial performance often relies on annual financial statements, using various financial ratios to measure different aspects such as profitability, liquidity, financial structure (debt), and turnover. From the perspective of business owners, profit is often regarded as the key result of commercial activities. Therefore, financial performance is critically important to company owners and indirectly affects all stakeholders.

Structural Capital Efficiency (SCE) and Firms' Performance

Structural Capital Efficiency (SCE) estimates the proportion of an organization's costs to the total value it creates. It consists of essential elements like databases, procedures, management philosophy, innovative capabilities, technology breakthroughs, research and development, and

intellectual property. Making effective use of these resources is essential to raising organizational performance. Research has consistently shown that structural capital effectiveness and total business performance are positively correlated.

SCE and accounting performance indicators like ROE and ROA show a substantial positive association. Furthermore, SCE positively influences market performance, as assessed by overall quality. However, other research imply that SCE might have a deleterious influence on both accounting and market performance. For instance, SCE has a detrimental effect on the financial performance of non-financial enterprises listed on the Bangladeshi DSE, according to research done by Sohel and Hossain (2023). However, Appah et al. (2023) found that SCE had a favorable impact on profitability, while Aluwong (2022) also indicated that SCE positively influences the financial performance of firms.

Models for Measuring Structural Capital

A variety of elements make up structural capital, including corporate culture, databases, research and development, hardware, software, and intellectual property rights (IPR) in addition to other elements that boost worker productivity (Isma et al., 2024). SCE is computed as the ratio of structural capital to value added, or SC = VA - HC. Subtracting human capital (HC) from total value added (VA) yields structural capital. When human capital accounts for a larger portion of value added, structural capital decreases. Structural capital may also be insignificant if overall value exceeds investments in human capital. The formula below can be used to calculate structural capital efficiency, or SCE: SCE is equal to the product of structural capital (SC) and total value added (VA).

Financial Performance Measurement Dimensions

Evaluating performance is a crucial component of performance-oriented management practices. This process involves using information systems to assess the performance of both individuals and organizations. Instead of relying solely on raw financial data, this study utilized various financial ratios for in-depth analysis. Ratio analysis is a useful technique that stakeholders can use to assess the financial health of a company. Comparisons between businesses within the same industry, between industries, and even within the same organization can be performed by using these financial ratios. To meet the goals of the study, ROA and ROE were used as the primary measures of financial performance in addition to control variables such Firm Size (FS) and Firm Age (FA).

Conceptual Model

Three types of variables are used to analyze the relationship between structural capital and a company's financial performance: control, dependent, and independent. Measures of financial success such as ROE and ROA are examples of dependent variables. Structural Capital (SC), which includes things like databases, software, hardware, company culture, intellectual property rights (IPR), research and development, infrastructure assets, and other things that boost worker productivity, is the independent variable. By removing human capital (HC) from value added (VA), or SC = VA - HC, one can calculate structural capital. Moreover, The formula SCE = SC/VA, where SC is for structural capital and VA is for total value added, is used to determine SCE. Firm Age (FA) and

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Firm Size (FS) are examples of control variables. These variables are conceptually analyzed to illustrate their interrelationships, as shown in Figure 1.

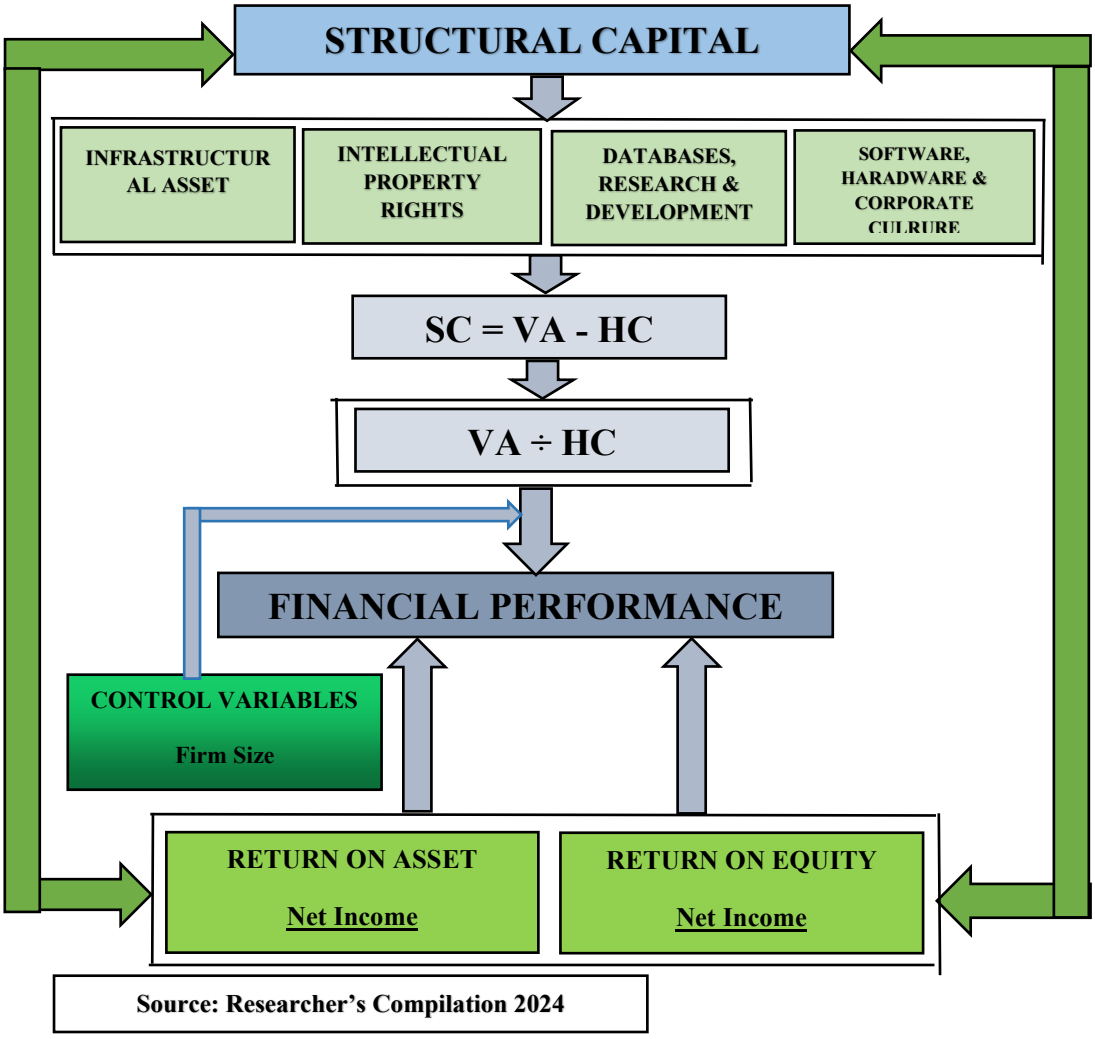

Figure 1: The Conceptual Model.
Source: Author's Conceptual Model (2024)

Theoretical Framework

Using the Resource-Based View (RBV) theoretical framework, this study investigates the relationship between structural capital and the financial performance of publicly traded enterprises in Nigeria. The RBV highlights how important it is to use a company's own resources to improve performance while recognizing the importance of both internal and external resources. By adopting this perspective, organizations can achieve competitive advantages in profitability, market positioning, and overall performance due to their unique resource endowments. This framework implies that giving structural capital investments top priority can result in notable gains in revenue generation and overall financial outcomes, so it is particularly relevant for evaluating

how SC affects a business's performance. The alignment of this theory with existing literature on structural capital reinforces the suitability of the RBV as a foundation for this study, providing insights into how effective resource management can drive financial success.

Empirical Review

The relationship between corporate performance and structural capital has drawn a lot of attention from researchers recently, especially in developing countries. Several empirical studies that are compiled in this review look at the effects of intellectual capital components, such as structural capital, on performance indicators including ROA, ROE, and economic value added (EVA).

Appah et al. (2023) examined the predictive power of intellectual capital on business value using ROA as a moderating variable. Secondary data for the study came from 240 observations of firms that were listed in the LQ-45 index between 2017 and 2021. Through panel data regression and moderated regression analysis, the Fixed Effect model was determined to be the best suitable. The results showed that while value-added human capital was not one of the capital kinds that significantly affects business value, structural capital and value-added capital were. However, there was a noticeable impact of intellectual capital on firm value. The IC-firm value relationship also showed profitability as a moderating component, emphasizing the necessity for businesses in underdeveloped nations like Indonesia to improve their intellectual resources.

Ogiriki and Oyakemeagbegha (2022) also looked on the efficacy of intellectual capital in consumer companies listed in Nigeria between 2016 and 2020. This study assessed the relationship between ROA and CEE, SCE, and HCE. The results showed that, as measured by ROA, HCE and SCE both had positive and significant benefits, while CEE had a statistically negligible but negative influence on economic value. This highlights the critical role that effective use of intellectual capital has in influencing the financial success of consumer goods companies in Nigeria.

Noel et al. (2022) extended the study of intellectual capital by utilizing the VAIC approach to evaluate the impact of intellectual capital on a number of performance metrics, including as ROA, ROE, and the Market-to-Book Value (MBV) ratio. The study evaluated 19 non-financial firms using panel data regression with fixed and random effect models during a ten-year period from 2010 to 2020. The findings showed that although human capital had a large influence on ROA and ROE, it had no discernible effect on market performance as indicated by the MBV ratio. This study underscores the critical role that human capital plays in enhancing financial performance, despite the assumption that other elements may also affect market value.

Mohammad (2022) looked at the connection between the financial performance of Jordanian industrial enterprises and their Intellectual Capital (IC). Regression models and the VAIC were used in the study to quantify IC and determine its impact on financial performance. After examining data from 788 company-year observations between 2006 and 2020 and 77 industrial businesses, the study found a substantial association between IC and financial performance. Specifically, CEE and HCE had a favorable influence on ROE, but SCE had a negative impact on performance. This illustrates the varied impacts of different IC components.

Znar et al. (2022) investigated how 409 non-financial companies listed on Bursa Malaysia performed in relation to intellectual capital and its constituent parts. MVAIC model, the study

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demonstrated a substantial positive association between the overall success of the organization and the effective use of intellectual capital. It determined that the primary factors influencing profitability were structural and physical capital. The findings suggest that a well-managed strategy for intellectual capital can greatly enhance company success.

Data Envelopment Analysis (DEA) was utilized by Aminat et al. (2022) to assess the usefulness of intellectual capital in the Nigerian banking sector between 2013 and 2019. According to their research, only 8.33% of the banks used their intellectual capital at its best, indicating major inefficiencies in the industry. While market concentration and ownership concentration were shown to have a detrimental impact on achieving ideal efficiency levels, bank size and directors' shareholdings were found to be positive contributors to intellectual capital efficiency in the study.

Okafor et al. conducted research in 2022 on the impact of human resource expenditures on the financial performance of manufacturing firms in Nigeria. In order to evaluate the effects of various human resource cost variables on capital market performance and accounting-based profitability (ROE), the study used multivariate econometric regression. Although human resource efficiency indicated a favorable but statistically negligible influence, salaries and pay were found to have considerable positive effects. This emphasizes how important human resources are in determining financial results and emphasizes the need for more effective use of human capital.

Tom-West et al. (2021) looked into the connection between intellectual capital performance and Economic Value Added (EVA) in Nigeria's information and communication technology (ICT) sector. All the components of intellectual capital, including CEE, SCE, and HCE, were found to have strong, positive correlations with one another. Using the VAIC model, the study highlighted how important it is to manage intellectual capital effectively to augment EVA, hence strengthening the correlation between intellectual resources and business value.

Adesanmi (2021) looked at the association between intellectual capital and performance in non-financial companies listed on the Nigerian Stock Exchange and how corporate governance affected it. Corporate governance significantly reduces the impact of intellectual capital on financial performance, according to the study, which looked at data from 50 organizations over a ten-year period. This highlights the critical connection between resource management and governance frameworks.

The fact that these research' findings differ emphasizes how difficult it is to gauge how structural capital affects financial performance. A number of variables impacted the results, such as the particular elements used to compute structural capital, the techniques used, and the distinct economic environments in which the research was conducted. Although the empirical data usually demonstrates that intellectual capital and company success are positively correlated, it also emphasizes the need for additional study to identify the precise variables at play in these dynamics.

In conclusion, the body of research to date indicates that structural capital and its constituent parts significantly affect financial performance in a variety of industries and situations. All of the research that have been studied demonstrate how important structural capital is, particularly in emerging nations. They also highlight the necessity of conducting in-depth study to fully comprehend the subtleties of this relationship, since different approaches, settings, and methods might produce different results when determining how structural capital affects company performance. Subsequent investigations need to endeavor to elucidate these associations and pinpoint optimal

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methodologies for harnessing structural capital to augment financial consequences inside diverse organizational settings.

METHODOLOGY

The study employs a descriptive research approach and an ex post facto design. It consists of a sample of 22 businesses selected from four industries: manufacturing, information and communication technology (ICT), health services, and oil and gas. As of June 2024, there were 151 companies listed on the Nigerian Exchange Group. Stratified sampling was employed to ensure representation across these industries, with the sample consisting of 11 manufacturing companies, 5 ICT firms, 3 health service providers, and 3 oil and gas companies, covering a period from 2013 to 2022. Selection was based on the availability of structural capital disclosures in their audited financial statements, as these companies are routinely audited and publish their financial reports annually. Panel data techniques including fixed effects, Ordinary Least Squares (OLS), and random effects analyses were used in the study, in conjunction with post-estimation tests to examine the data. Furthermore, endogeneity issues were addressed and objective outcomes were guaranteed by employing SGMM.

Variables Specification

This study builds upon the research of Ogiriki & Oyakemeagbegha (2022), Znar et al (2022) and Mohammad (2022) to achieve its objectives. In order to further address the study's scope, it expands on their work by including control factors—specifically, firm age and company size—alongside the dependent and independent variables. Additionally, this research enhances the methodological approach by using GMM technique to address endogeneity issues that were not considered in previous studies. The study further enhances the assessment of structural capital by segmenting it into different categories, including total infrastructure assets, databases, R&D activities, software, hardware, corporate culture, functions, and other elements that increase worker productivity. Value added less human capital (HC), or SC = VA - HC, is the formula for calculating structural capital. The formula for calculating structural capital efficiency (SCE) is SCE = SC/VA. Firm age (FA) and size (FS) are employed as control variables, whereas ROE and ROA are used to measure financial performance. Equations iii and iv are derived from equations i and ii by the study in order to assess the effect of structural capital efficiency (SCE) on the financial performance of Nigerian firms.

$FP(ROA/ROE) = f(SCE)\ldots\ldots\ldots

VA = Value Added (Operating profit (OP) + Employment Cost (EC) + Total Depreciation and Amortization (TD&A).

FP = Financial Performance

SCE = Structural Capital Efficiency (SCE = SC/VA)

ROA = Return on Asset (Profit after tax/Total Assets)

ROE = Return on Equity (Profit after tax/Total Shareholder's Equity)

C = Constant

β_0 = Intercept/Constant;

β_{1-4} = Slope Coefficients; and

e = Error Term.

Control Variables

FS = Firm Size (Log of Total Asset)

FA = Firm Age (Log of number of years of establishment)

Table 1: Measurement of the variables and source

S/n	Variable	Measurement	Source
1	Return on Asset (ROA)	ROA = Profit after tax / Total Assets.	Noel et al., (2022).
2	Return on Equity (ROE)	ROE = Profit after tax / Total Shareholder's Equity.	Okafor et al., (2022).
3	Structural Capital Efficiency (SCE)	SCE = SC/VA; where SC represents structural capital and VA denotes the total value added.	Ogiriki & Oyakemeagbegha (2022), and Znar et al., (2022)
4	Firm Size (FS)	FS = Log of Total Asset.	Aminat et al., (2022).
5	Firm Age (FA)	FA = Firm Age Log of number of years of establishment.	Haruna (2022).

Source: Researcher's Compilation (2024)

RESULT AND DISCUSSION

Table 2: Estimation Results for Models Objectives One and Two

Models	MODEL OBJECTIVE 1 (ROA)				MODEL OBJECTIVE 2 (ROE)			
Estimation Techniques	Random-effects Regression				Random-effects Regression			
Dependent variables ROA/ROE	Coeff	Std. Err	T-Stat	Prob	Coeff	Std. Err	T-Stat	Prob
C	0.1594	0.0589	2.7072	0.0073	0.0669	1.1727	0.057	0.9546
SCE	0.0206	0.0068	3.0141	0.0029	0.168	0.1945	0.8638	0.3886
FS	-0.0068	0.0042	-1.6133	0.1081	0.1388	0.0981	1.4147	0.1586
FA	-0.0382	0.0308	-1.2402	0.2163	-0.5973	0.5947	-1.0043	0.3164
R^2	0.0598				0.015			
Overall/Adjusted R^2	0.0468				0.0013			
F-Stat	4.5826 (0.0039)				1.098 (0.3509)			
Hausman Test	6.2603 (0.0996)				0.8467(0.838)			

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LM Test	313.86 (0.0002)	441.292 (0.0000)
Heteroskedasticity Test	2.2808 (0.0235)	0.3946 (0.6936)
Durbin-Watson Stat	1.603	2.271

Source: Author's Computation (2024)

The regression analysis for the first and second objectives examines how structural capital efficiency impacts ROA and ROE for publicly listed companies in Nigeria. In Model 1, the intercept is 0.1594 with a standard error of 0.0589. Conversely, Model 1B shows an intercept of 0.0669 with a higher standard error of 1.1727. When all independent variables are set to zero, the intercept shows the value of the dependent variable (ROA or ROE). The Structural Capital Efficiency (SCE) coefficient in Model 1 is 0.0206, meaning that an increase of one unit in SCE corresponds to a 2.06% rise in Return on Assets (ROA). Conversely, Model 2's SCE coefficient of 0.168 shows that a one-unit rise in SCE corresponds to a 16.8% increase in Return on Equity (ROE), assuming that all other variables remain constant.

The percentage of the variance of the dependent variable that the model can account for is known as R-squared (R^2). The independent components in Model 1 account for a larger percentage of the variance in the dependent variable, as seen by Model 1's much higher R^2 of 0.0598 when compared to Model 2's R^2 of 0.015. In other words, while Model 2's R^2 of 0.015 suggests that structural capital efficiency only explains roughly 1.5% of the variation in Return on Equity (ROE), Model 1's R^2 of 0.0598 suggests that structural capital efficiency explains roughly 5.98% of the Return on Assets (ROA) fluctuation.

Model 1 appears to match the data better because its adjusted R^2 value of 0.0468 is greater than Model 2's 0.0013, even after accounting for model complexity and possible overfitting. The overall significance of the regression models is assessed using the F-statistic. Model 1 shows a relatively low p-value of 0.0039, indicating strong overall significance, while Model 2 has a higher p-value of 0.3509, reflecting less overall significance. This suggests that the model in Model 1 is more appropriate given its independent and control variables. T-statistics assess the significance of individual coefficients, with lower p-values indicating greater significance. In Model 1, the coefficient for SCE has a very low p-value of 0.0029, highlighting its significant impact. In contrast, some coefficients in Model 2 have higher p-values, suggesting reduced significance relative to Model 1.

The LM Test assesses residual autocorrelation. Both models show very low p-values, indicating the presence of autocorrelation within the residuals, and suggesting an issue with serial dependence. Conversely, the Heteroskedasticity Test results show high p-values for both models, indicating the absence of heteroskedasticity and suggesting that the residuals are homoskedastic. The Durbin-Watson statistic is utilized to identify autocorrelation in the residuals, with values approaching 2 indicating a lack of significant autocorrelation. Both models exhibit Durbin-Watson values near 2, implying that substantial autocorrelation is not present.

The Hausman Test evaluates the suitability of using random-effects versus fixed-effects models. Both models in this study utilize random-effects regression, which presumes that the individual-specific effects are random variables. The random-effects model is probably more appropriate,

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based on the relatively high p-values (0.0996 for Model 1 and 0.838 for Model 2) found in the Hausman Test. Overall, these findings suggest that Model 1, which uses random-effects regression, is the better option. In comparison to Model 2, this model shows lower p-values for coefficients, F-statistics, and the Hausman Test, as well as higher R^2 and modified R^2 values.

Overall, the analysis demonstrates that SCE has a statistically significant beneficial influence on ROA but merely a favorable, albeit non-significant, impact on ROE. This is evidenced by a positive coefficient for both ROA and ROE; a p-value below 0.05 for ROA while greater than 0.05 for ROE and T-value greater than 1.96 for ROA while less than 1.96 for ROE. Consequently, the null hypothesis for the first hypothesis was rejected, whereas the null hypothesis for the second hypothesis was accepted.

Table 3: SGMM/DGMM Estimation Results for Objective One and Two

Models	MODEL 1 (ROA) (SGMM)				MODEL 2 (ROE) (SGMM)			
Dependent variables ROA/ROE	Coeff	Std. Err	T-Stat	Prob	Coeff	Std. Err	T-Stat	Prob
ROA(-1)/ROE(-1)	0.1085	0.0069	15.6254	0.0000	-0.1217	2.46	-4939.1	0.0000
SCE	0.0033	0.0007	4.87	0.0000	0.0668	0.0099	6.7527	0.0000
FS	-0.0208	0.002	-10.559	0.0000	0.0769	0.0042	18.354	0.0000
FA	0.0705	0.042	1.6791	0.0949	-0.4566	0.0202	-22.559	0.0000
AR(1)	0.0874				0.9628			
AR(2)	0.1661				NA			
J-stat	19.4333 (0.3656)				18.1433(0.4463)			

Source: Author's Computation (2024)

GMM was employed in the study for estimation in order to address endogeneity in panel data. The results indicate that the coefficients of the independent variables are SCE, FS, and FA, while the lagged values of ROA and ROE from the previous period are represented by ROA(-1) and ROE(-1). In Model 1, the coefficient for ROA(-1) is 0.1085, meaning that a one-unit rise in the lag ROA leads to a 10.85% increase in the current ROA. However, Model 2 displays a ROE(-1) coefficient of -0.1217, which, assuming other parameters stay constant, means that a one-unit rise in the lag ROE results in a 12.17% decrease in the present ROE.

The autoregressive terms in the models, denoted by AR(1) and AR(2), represent the link between the dependent variable's past values and current value. The coefficients for AR(1) and AR(2) are 0.0874 and 0.1661 in Model A, respectively, and 0.9628 for AR(1) while AR(2) reveals that second order correlation is not applicable in Model B. The residuals' presence of higher-order serial correlation is assessed using the J-statistic. A higher p-value suggests that the higher-order serial correlation is not statistically significant. The p-values for both models are fairly high, suggesting that there is no proof of higher-order serial correlation in the residuals. Model A and Model B differ mainly in their auto-regressive terms (AR(1) and AR(2)), with slightly different coefficients. However, both models seem to perform similarly, as indicated by comparable J-statistics.

Overall, both models reveal statistically significant relationships between the independent variables (lagged ROA/ROE, SCE, FS, FA) and the dependent variable (current ROA/ROE). The

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coefficients are significant at standard levels ($p < 0.05$), highlighting their relevance in explaining variations in the dependent variable. However, Model 1 seems to offer more credible and interpretable results than Model 2.

Conclusion

The analysis found that investments in structural capital—which encompasses functions, business culture, hardware, software, databases, and other components that boost employee productivity—were linked to gains in financial performance. This conclusion, which is consistent with the regression analysis, shows that SCE affects ROA but not ROE in these organizations in a positive and statistically significant way.

Recommendations

Corporate leadership should advocate for proactive investment in structural capital, comprising infrastructure assets, databases, research and development endeavors, software and hardware systems, corporate culture, operational functions, and any other elements fostering heightened employee productivity. Companies' financial performance would significantly increase as a result of this participation. The study examined the connection between structural capital and the financial performance of Nigerian publicly traded companies using RBV as its theoretical framework. These ideas highlight the significance of making structural resource investments, arguing that doing so can improve overall performance and income production. Thus, the selection of RBV is well-supported by existing literature on Structural Capital (SC) and company performance.

Suggestions For Further Studies

This study provides a thorough explanation of the relationship between structural capital and the financial success of Nigerian businesses. Nonetheless, there are limitations in this study that future researchers could address by implementing the following suggestions:

Expand Sample Size or Include Entire Population: Future research could benefit from enlarging the sample size to encompass both unquoted and private companies, rather than focusing solely on listed firms. This approach would provide a broader and more thorough understanding of the relationship between structural capital and financial success in a range of business settings.

Conduct Comparative Sector Analysis: A comparative examination of several industries, including manufacturing, agriculture, construction, real estate, healthcare, financial services, industrial goods, information technology, natural resources, oil and gas, and utilities, could be beneficial for future research. This strategy would improve knowledge of how structural capital impacts financial performance across many industries.

Employ Diverse Research Methods: A variety of research techniques, including as critical analysis, multiple surveys, interviews, and thorough inspections of financial statements, could be applied to deepen our knowledge of the relationship between structural capital and prosperity.

Adopt Multiple Research Methods: It could be feasible to gain a deeper understanding of the relationship between structural capital and financial performance by applying a variety of research

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techniques, including in-depth analysis, surveys, thorough evaluations of financial statements, and interviews.

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