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INTELLECTUAL CAPITAL AND FINANCIAL PERFORMANCE OF MANUFACTURING FIRMS IN NIGERIA

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ABSTRACT

The study evaluated the effect of intellectual capital efficiency on the corporate performance of quoted manufacturing companies in Nigeria. The population of the study consists of 20 companies quoted on the Nigeria stock exchange under the consumer goods sector as at 2019. A total of sixteen (16) companies with updated financial information for the relevant years were selected and analyzed. Data for the study were extracted from annual reports and accounts of selected companies for the period 2012-2018. The study applied the Value Added Intellectual Coefficient (VAIC) model. Three research hypotheses were formulated for the study. In testing the research hypotheses, the study adopted both descriptive statistics and multiple panel regression techniques for quoted sampled firms analyzed with the aid of E-Views version 9. The findings revealed that Intellectual capital (IC) has a positive significant effect on ROCE and ROA. There was no significance found for earnings per share. Based on the findings, it was concluded that intellectual capital has a significant and positive effect on the corporate performance of manufacturing firms in Nigeria. Consequent upon this, the study, it was recommended that adequate attention be given to firm's human capital since human capital efficiency is considered as the most important asset of any organization.

1INTRODUCTION

The transition from an industrial economy, focused on physical assets like factories, machinery, and equipment, to a knowledge-based economy has redefined the sources of wealth and competitive advantage for modern businesses. The emphasis has shifted to intellectual capital, which includes expertise, creativity, skills, and experience (Inyada, 2018;

Ekwe, 2012). This shift has profoundly impacted production systems, now driven by technology and knowledge, with intellectual capital becoming a crucial resource for organizational success (Ahangar, 2011; Hojatollah & Alireza, 2013). In the knowledge economy, intangible assets are recognized as vital for the survival and performance of organizations, particularly in service industries like finance and pharmaceuticals, where intellectual capital is central to revenue generation (Firer & William, 2003). Despite this shift, traditional accounting practices continue to prioritize physical assets, often neglecting the value of intellectual capital in financial statements. This oversight deprives management of critical information needed for decision-making, particularly concerning human resources, which can ultimately impact financial performance (Ewereoke, 2018; Amahalu, Ezechukwu & Okudo, 2022; Amahalu, Okudo, Okafor & Onyeka, 2023). The gap between a company's book value and its market value, often attributed to intangible assets, underscores the importance of recognizing and reporting intellectual capital (Umenzekwe, Okoye, Nwoye, Adeniyi & Uchegbu, 2022; Sullivan, 1999).

In Nigeria, the manufacturing sector, a key component of the economy, has experienced significant growth, largely due to the contributions of human capital. However, the sector faces challenges such as increasing competition, high operating costs, and an unfriendly business environment, which have stunted its growth (Nnorom, 2017). Competitive pressures have forced organizations to enhance quality and innovate, relying heavily on intellectual capital development. Given the critical role of intellectual capital in driving competitive advantage and financial performance, this study seeks to provide empirical evidence on its impact on manufacturing firms in Nigeria. It aims to bridge the gap in the literature by exploring how intellectual capital influences corporate performance (Amahalu & Okudo, 2023), particularly in a dynamic and challenging business environment like Nigeria's industrial sector.

1.1 Objectives

Generally, this study seeks to explore the impact of intellectual capital on financial performance of manufacturing firms in Nigeria. However, it is set to achieve the following specific objectives:

1. To examine the effect of value added intellectual capital on return on asset of listed manufacturing firms in Nigeria.
2. To analyse the influence of value added intellectual capital on the return on equity of listed manufacturing firms in Nigeria.

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3. To determine the effect of value added intellectual capital on earnings per share of listed manufacturing firms in Nigeria.

1.2 Research Questions

To achieve the above objective, the research seeks to provide answers to the following research questions:

1. To what extent does value added intellectual capital significantly affect the return on asset of listed manufacturing firms in Nigeria?
2. What level of influence does value added intellectual capital have on the return on equity of listed manufacturing firms in Nigeria?
3. To what degree does value added intellectual capital influence earnings per share of listed manufacturing firms in Nigeria?

1.3 Hypotheses

To proffer useful answers to the research questions and realize the study objectives, the following hypotheses will be tested:

H_0: Value added intellectual capital does not significantly affect the return on asset of listed manufacturing firms in Nigeria.

H_0: Value added intellectual capital does not significantly influence the return on equity of listed manufacturing firms in Nigeria.

H_0: Value added intellectual capital does not have any significant impact on the earnings per share of listed manufacturing firms in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Intellectual Capital

Intellectual capital (IC) is an intangible asset essential in today's knowledge-driven economy, significantly influencing corporate performance. Researchers like Rastogi (2000) and Lev and Radhakrishan (2003) argue that traditional measures fail to capture IC's true value, as it is both invisible and intangible. IC, comprising Human Capital Efficiency, Structural Capital Efficiency, and Capital Employed Efficiency, fosters innovation, competitive advantage, and value creation (Efenyumi, Okoye & Nwoye, 2022; Dewi & Saudah, 2012). Flamholtz (1999) notes the shift from industrial to post-industrial economies, where IC, rather than

manufacturing capabilities, is central to profitability. Effective harnessing of IC provides firms with a competitive edge (Ordonez de Pablos, 2003; Bontis, 2004).

2.1.2 Measurement of Intellectual Capital

Pulic (2000) introduced the Value Added Intellectual Coefficient (VAIC) method to measure IC by evaluating the efficiency of capital employed, human capital, and structural capital. This method, despite its limitations, is valued for its simplicity and reliability (Maditinos et al., 2011). VAIC assesses a company's ability to create value from its resources, with value added representing the gross global value created by the firm. Other methods of measuring IC are often customized to specific companies, making them difficult to generalize (Firer & Williams, 2003).

2.1.3 Return on Assets (ROA)

Return on Assets (ROA) is a financial ratio indicating a company's profitability relative to its total assets. It is calculated by dividing net income by total assets and reflects how efficiently a firm uses its assets to generate profit (Idekwulim, 2014). ROA is a widely used measure of economic performance in studies on the relationship between IC and business performance (Muhammad & Ismaila, 2009). Research shows a strong positive correlation between VAIC and ROA, suggesting that companies with better IC efficiency achieve higher profitability (Apiti et al., 2012; Chen et al., 2005; Shiu, 2006; Sydler et al., 2013).

2.1.4 Return on Capital Employed (ROCE)

Return on Capital Employed (ROCE) measures overall business performance by comparing profits with the capital invested. It is an essential tool for assessing managerial effectiveness in utilizing funds (Idekwulim, 2014). Studies, such as Wang (2008) and Maditinos (2011), show a positive relationship between IC efficiency and company value, with IC contributing to better financial performance, including higher returns on equity and capital employed.

2.1.5 Earnings per Share (EPS)

Earnings per Share (EPS) represent the profits attributable to each unit of a company's ordinary shares. It measures the equity earnings available to shareholders and is a key indicator of a business's investment potential (Idekwulim, 2014). Effective utilization of IC components is argued to stimulate earnings, making EPS a critical metric in assessing a company's financial health and shareholder value (Anuonye, 2015).

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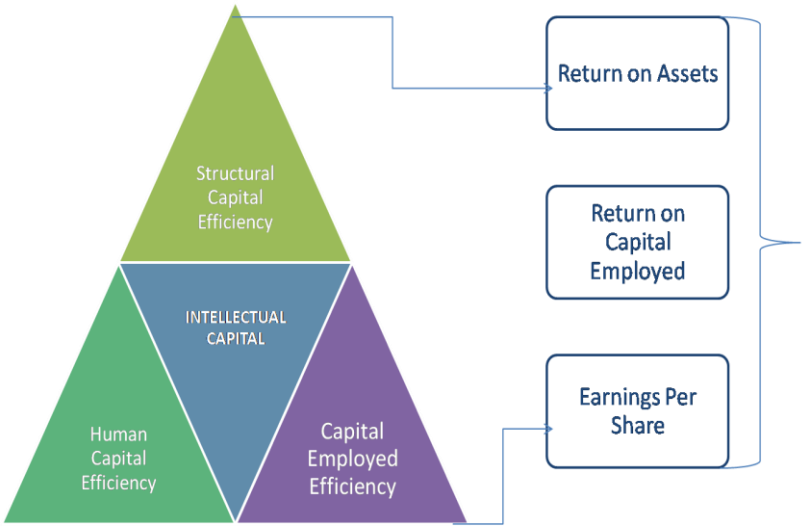


Figure 1 Conceptual Diagram: Intellectual Capital and Firm Performance

Source: Researcher's Conceptualisation

With human capital, structural capital and capital employed all embedded in intellectual capital as shown in the net of triangles, they do not exist out of themselves and all intertwine in organisations. The apriori expectation of this study is that intellectual capital in its forms will have significant influences on the measures of performance, return on assets, return on capital employed and earnings per share as depicted by the arrow connectors.

2.2 Theoretical Framework

Thus work was anchored on the resource-based theory discussed below:

2.2.1 Resource-Based Theory

The resource-based theory, introduced by Birger Wernerfelt in 1984, emphasizes the strategic importance of a firm's resources in achieving sustainable competitive advantage (Mahoney & Pandian, 1992). Rooted in Penrose's (1959) earlier work, the theory views a firm as a collection of productive resources, both physical and human, that can be utilized in various ways to generate value. The theory argues that competitive advantage arises when a firm's resources are valuable, rare, imperfectly imitable, and non-substitutable (Barney, 1991). Barney (1991) identifies three main categories of resources: material (physical capital), human (human capital), and organizational (organizational capital). Material resources include technology, equipment, and access to raw materials. Human resources encompass the skills, experience, and knowledge of employees. Organizational resources involve the firm's structure, systems, and internal and external relationships.

This study adopts the resource-based theory, focusing on human and structural capital as key components of intellectual capital. Human capital includes knowledge, skills, and experience, while structural capital covers business processes, intellectual property, and organizational culture. Together, these resources drive a firm's efficiency and effectiveness, contributing to sustained competitive advantage (Bontis & Fitz-enz, 2002; Hitt & Ireland, 2002).

2.3 Empirical Review

The measurement of intellectual capital (IC) in Nigerian companies is minimal, despite the recognition of human capital in annual reports. The underreporting of IC contributes to a significant undervaluation of firms. Recent studies highlight the impact of human capital on corporate performance, emphasizing the need for better measurement and reporting of IC. Kwarbai and Akinpelu (2016) investigated human capital efficiency in Nigerian industrial goods companies, finding a positive relationship between human capital and performance metrics like Return on Assets (ROA) and Earnings per Share (EPS). Similarly, Ofurum and Aliyu (2018) explored the relationship between IC and financial performance in Nigerian banks, revealing that certain elements of IC significantly influence return on investment.

Tatiana and Tatiana (2017) analyzed Russian manufacturing companies and found that human and structural capital positively affect organizational performance, while relational capital did not. This suggests that the value of IC varies across industries, with internal processes being more critical in manufacturing. Recent studies also emphasize the broader role of IC in organizational success. For instance, Inyada (2018) examined the relationship between IC and bank performance in Nigeria, finding that IC, including physical and structural capital, positively impacts financial outcomes. Similarly, Kurfi, Udin, and Bahamman (2017) demonstrated that IC significantly influences the financial performance of Nigerian food product companies.

International studies provide further insight. Holienka and Pilková (2014) studied Slovak SMEs and found that IC's role in predicting financial performance increased during the post-crisis period. This underscores the growing importance of IC in enhancing firm resilience and performance. Nezhad, Yamrali, and Aboujafari (2014) explored IC's impact on financial performance in Iranian companies, concluding that while IC affects overall asset returns, it has less impact on fixed assets. This highlights the differential effects of IC components on various aspects of financial performance. The importance of IC is further supported by

Yasmin and Milé (2014), who examined Australian SMEs and found that human, structural, and relational capital positively impact performance, particularly when mediated by organizational innovation. This study suggests that companies should invest in IC to drive innovation and improve performance.

Ewereoke (2018) and Anuonye (2016) also examined IC in Nigerian firms, with both studies concluding that IC significantly impacts financial performance, particularly through the efficiency of human capital. These findings align with the broader literature, which consistently shows that IC is a critical driver of corporate success. The underreporting of IC in Nigeria's financial statements is a significant oversight. Recent studies consistently demonstrate the importance of IC in enhancing organizational performance across various industries. As such, there is a strong case for more rigorous measurement and reporting of IC in Nigerian companies to accurately reflect their value and potential.

Previous empirical studies highlight the positive relationship between intellectual capital (IC) and financial performance across various countries. Ahangar (2011) found that IC significantly impacts financial returns in Iranian companies, while Saudah (2005) and Raihi-Belkauui (2003) reported similar findings in other contexts. In Nigeria, Onyekwelu et al. (2017) also confirmed IC's influence on bank performance. However, limited research focuses on the effect of IC on financial performance in Nigeria's manufacturing sector, particularly within the consumer goods sector. This study aims to bridge this gap using data from 2012 to 2018.

3. MATERIAL AND METHOD

This study employs an ex-post facto research design, a non-experimental approach that examines pre-existing groups to determine relationships between independent and dependent variables. The ex-post facto design was chosen to effectively explore the relationship between intellectual capital and financial performance, based on historical data from company annual reports. The population comprises all consumer goods companies listed on the Nigerian Stock Exchange (NSE) as of 2019, totaling 20 companies. The study sample includes 16 companies, as shown below, selected based on the availability of complete financial data from 2012 to 2018:

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Table 1 List of Companies

S/N	Company
1	Champion Brew. PLC
2	Dangote Sugar Refinery PLC
3	Flour Mills Nig. PLC
4	Guinness Nig. PLC
5	Honeywell Flour Mill PLC
6	International Breweries PLC
7	Cadbury PLC
8	N Nig. Flour Mills PLC
9	NASCON Allied Industries PLC
10	Nestle Nigeria PLC
11	Nigerian Brew. PLC
12	Nigerian Enamelware PLC
13	P Z Cussons Nigeria PLC
14	Unilever Nigeria PLC
15	Vitafoam Nig. PLC
16	Dangote Flour Mills PLC

It is however important to note that Golden Guinea Breweries Plc, Mcnichols Plc, Multitrex Integrated Foods Plc, and Seven-Up Bottling Company Plc were excluded due to incomplete financial reports. Secondary data were collected from the annual reports of the sampled companies for the 2012-2018 financial years, accessed through company websites and the NSE. Data were extracted from various financial statements, including the Statement of Profit, Loss and Other Comprehensive Income, Statement of Financial Position, and Notes to the Accounts. Firm performance was the dependent variable in this study and was measured using three profitability ratios which are: Return on Capital Employed, Earnings Per Share and Return on Assets.

1. **Return on asset:** this is the ratio of annual net income to average total assets of a business during a financial year. It measures efficiency of business in using its assets to generate net income. It is a profitability ratio that is calculated as:

   $$ROA = \frac{\text{Annual Net Income}}{\text{Total Assets}}$$

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2. **Return on capital employed:** A financial ratio that measures a company's profitability and the efficiency with which its capital is employed. Return on capital employed (ROCE) is calculated as:

   ROCE= Earnings Before interest and Tax (EBIT)

   Capital Employed

'Capital employed' as shown in the denominator is the sum of shareholder's equity and debt liabilities; it can be simplified as (total asset- current liabilities).

3. **Earnings per share (EPS):** Earnings per share are the portion of a company's profit allocated to each outstanding share of common stock. EPS serve as an indicator of a company's profitability.

   EPS = Net Income – Dividends on Preferred stock

   Average outstanding shares

The independent variable was Intellectual capital and this had Structural Capital efficiency, Human capital efficiency and Capital employed efficiency as proxies.

1. **Capital Employed Efficiency** (CEE) which shows the efficiency of the capital employed.

   CEE = Value Added (VA)

   Capital Employed (CE)

   Where;

   Capital Employed (CE) = Total Assets – Current liabilities.

2. **Human Capital Efficiency (HCE)** is an indicator of the value added efficiency of human capital. According to this model, total cost for personnel is considered as human capital and is calculated thus;

   HCE = Value added/Human capital.

3. **Structural Capital Efficiency (SCE**) is an indicator of the value added efficiency of structural capital and is calculated thus;

   Structural Capital (SC) = Value Added (VA) – Human Capital (HC)

   SCE =Structural capital/Value added.

Descriptive statistics such as mean, median, minimum, maximum, and standard deviation were calculated. The relationship between intellectual capital and financial performance was analyzed using Pearson correlations and multiple Panel Least Squares regression analysis. Multicollinearity and Hausman tests were conducted to determine the appropriateness of

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regression models. The decision rule was based on a P-value of 0.05, determining whether to reject or accept the null hypothesis.

The Value Added Intellectual Coefficient Model (VAIC^{TM}) developed by Pulic (2000) was adopted for this study. The model measures the value added by Intellectual Capital of the various companies studied. The hypothesized relationship was analysed using simple regression analysis. For this study, a model was developed in order to evaluate the impact of intellectual capital on financial performance. Here, financial performance (dependent variable) is explained by the reaction of intellectual capital.

The functional notation form is stated below:

Performance (PERF) = f (Intellectual capital) ……..Eqn 1.

The proxy variables are introduced in the equation below:

PERF (ROA, ROE, EPS) = f (CEE, HCE, SCE) ……Eqn 2.

The deterministic/mathematical models including the stochastic random variable are specified as follows:

$ROA_{ij} = \beta_0 + \beta_1(CEE)_{ij} + \beta_2(HCE)_{ij} + \beta_3(SCE)_{ij} + \varepsilon$……Eqn 3

$ROCE_{ij} = \beta_0 + \beta_1(CEE)_{ij} + \beta_2(HCE)_{ij} + \beta_3(SCE)_{ij} + \varepsilon_i$……Eqn 4

$EPS_{ij} = \beta_0 + \beta_1(CEE)_{ij} + \beta_2(HCE) + \beta_3(SCE)_{ij} + \varepsilon$……Eqn 5.

Where CEE = Capital Employed Efficiency;

HCE = Human Capital Efficiency;

SCE = Structural Capital Efficiency;

ROA= Return on Assets; ROCE= Return on Capital Employed;

EPS= Earnings per Share;

β_0= Constant;

β_1-β_3 = Coefficients of regressors;

ε= stochastic error term;

i=period; j=firm/cross-section

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4. RESULT AND DISCUSSIONS

4.1 Data Analysis

The data analysed in this section was derived from the annual reports of the studied companies. Data were grouped under intellectual capital and performance ratios variables as represented in the appendices section.

4.1.1 Descriptive Statistics

Table 2: Descriptive Statistics of IC Variables and Performance ratios

	ROCE	EPS	ROA	CEE	HCE	SCE
Mean	22.14507	2.871997	5.642912	0.544333	3.798498	0.576567
Median	9.927227	1.010000	4.673128	0.414544	3.315306	0.711029
Maximum	1157.736	54.26000	26.49347	9.402340	14.67576	16.64722
Minimum	-38.93881	-22.87000	-19.65952	-0.319191	-3.854209	-13.76674
Std. Dev.	109.8076	8.885607	8.499859	0.895586	2.666546	2.365172
Jarque-Bera	49939.02	1142.101	3.167644	34731.51	40.15050	5715.264
Probability	0.000000	0.000000	0.025189	0.000000	0.000000	0.000000
Observations	111	111	111	111	111	111

Source: Researcher's Computation using E-Views version 9

The result from the descriptive statistics displayed that on the average, the firms under study maintained a return on capital employed ratio of 22%, while the average amount for earnings per share of the companies studied is N2.87. The maximum value for measuring human capital employed is 177.29. All profitability values (Return on equity, return on asset and earnings per share) shows negative minimum values depicting that some companies made losses in some periods. All data sets were normally distributed as demonstrated by the Jacque-Bera statistics with all p values less than 0.05.

Table 3: Correlations

	CEE	**HCE**	**SCE**	**ROA**	**ROCE**	**EPS**
CEE	1					
HCE	-0.136	1				
SCE	0.055	0.097	1			
ROA	-0.003	0.625	0.124	1		
ROCE	0.867	-0.198	0.004	-0.109	1	
EPS	0.101	0.194	0.054	0.504	0.009	1

Source: SPSS Version 23

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Critical value of r is +/- 0.195. From the correlations table above, Human Capital Efficiency has a positive relationship with Return on Assets (0.625>0.195) and a negative relationship with Return on Capital employed (-0.198> -0.195). Capital Employed Efficiency also recorded a positive relationship with Return on Capital Employed (0.867>0.195). No relationship was found between other variables (r<.+/-195).

4.1.2 Suitability of Regression Test

Table 4 Multicollinearity Statistics

Variance Inflation Factors

Date: 02/03/20 Time: 14:01

Sample: 1 111

Included observations: 111

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	24.26962	3.710296	NA
CEE	8.424054	1.405238	1.023649
HCE	0.956477	3.140171	1.030358
SCE	1.196894	1.075198	1.014371

Source: Researcher's Computation using E-Views version 9

Uncentred and Centred VIF values all were within the range of 1 and 10 and thus presents the absence of multicollinearity in the data set. This confirms that panel regression will yield accurate results.

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4.2 Test of Hypotheses

Table 5 Statistical Data for Hypotheses Testing

Hypothesis	Test	Chi-Sq. Statistic	Prob.	Significant Variables ($p < 0.05$)	Adjusted R-squared	F-statistic	Prob (F-stat)	Decision
H1: VAIC → ROA	Hausman Test	2.83	0.4178	HCE ($p = 0.0000$)	0.2882	15.8472	0.0000	Reject Null: VAIC significantly affects ROA
H2: HCE → ROCE	Hausman Test	7.21	0.0655	CEE ($p = 0.0000$), HCE ($p = 0.0000$)	0.9699	1183.134	0.0000	Reject Null: HCE significantly influences ROCE
H3: VAIC → EPS	Hausman Test	5.88	0.1177	None	0.0019	0.9310	0.4285	Accept Null: VAIC does not significantly impact EPS

4.2.1 Hypothesis One

H_{01}: Value Added Intellectual Capital does not significantly affect the return on assets of listed manufacturing firms in Nigeria.

The p-value for Human Capital Efficiency (HCE) is 0.0000, which is less than 0.05. The overall model is significant (F-statistic = 15.8472, $p < 0.05$), indicating that VAIC significantly affects ROA. Therefore, we reject the null hypothesis and assert that Value

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Added Intellectual Capital significantly affect the return on assets of listed manufacturing firms in Nigeria

4.2.2 Hypothesis Two

H_{02}: Human capital efficiency does not significantly influence the return on equity of listed manufacturing firms in Nigeria.

The p-values for Capital Employed Efficiency (CEE) and Human Capital Efficiency (HCE) are both 0.0000, which are less than 0.05. The overall model is highly significant (F-statistic = 1183.134, $p < 0.05$), showing that HCE significantly influences ROCE. Therefore, we reject the null hypothesis and assert that Human capital efficiency significantly influences the return on equity of listed manufacturing firms in Nigeria.

4.2.3 Hypothesis Three

H_{03}: Value Added Intellectual Capital does not significantly impact the earnings per share of listed manufacturing firms in Nigeria.

None of the regressors are significant (p-values > 0.05), and the overall model is not significant (F-statistic = 0.9310, $p > 0.05$). Therefore, VAIC does not significantly impact EPS. Therefore, we accept the null hypothesis and assert that Value Added Intellectual Capital does not significantly impact the earnings per share of listed manufacturing firms in Nigeria.

This study examined the impact of intellectual capital on the financial performance of manufacturing firms in Nigeria, using the VAIC model, which includes capital employed efficiency (CEE), human capital efficiency (HCE), and structural capital efficiency (SCE). The results revealed that intellectual capital positively influences return on assets (ROA), with human capital emerging as the key determinant, aligning with previous studies by Kwarbai and Akinpelu (2016). For return on capital employed (ROCE), the study found that while human and structural capital negatively affect ROCE, CEE has a strong positive effect, leading to an overall increase in ROCE. This finding is consistent with Kurfi et al. (2017), though it contrasts with Ofurum and Aliyu (2018). Conversely, earnings per share (EPS) were not significantly influenced by intellectual capital, suggesting that other external factors, such as the number of ordinary shares and after-tax profits, are more critical in determining EPS. This contradicts Kwarbai and Akinpelu's (2016) findings, which indicated a positive relationship between human capital and EPS.

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CONCLUSION AND RECOMMENDATION

This study evaluated the impact of intellectual capital on the financial performance of manufacturing firms in Nigeria. The study revealed that intellectual capital significantly improves return on assets (ROA) and return on capital employed (ROCE). However, it does not have a significant impact on earnings per share (EPS). This research highlights the benefits of intellectual capital, demonstrating its positive influence on ROA and ROCE. These findings align with existing literature, which supports the notion that intellectual capital enhances firm performance in these areas. Conversely, the lack of impact on EPS suggests that other factors, such as the number of shares or after-tax profits, play a more substantial role in determining this performance indicator. Therefore, while intellectual capital is crucial for improving overall financial metrics, its role in influencing EPS appears limited.

1. Managers should prioritize investments in intellectual capital, including financial incentives, to boost performance, particularly in terms of returns.
2. Organizations should commit to regular employee training and development to enhance productivity and performance.
3. Beyond intellectual capital, firms should consider other factors that influence profitability to improve all key performance indicators (KPIs).

REFERENCES

Ahangar, R. G. (2011). The relationship between intellectual capital and financial performance: An empirical investigation in an Iranian company. *African Journal of Business Management*, 5 (*1*), 88-95.

Amahalu, N.N., Ezechukwu, B.O., & Okudo, C.L. (2022). Intellectual capital and market value added of listed insurance companies in Nigeria. *International Journal of Science Academic Research, 03*(10), 4528-4533.

Amahalu, N.N., & Okudo, C.L. (2023). Effect of corporate social responsibility on financial performance of quoted oil and gas firms in Nigeria. *Research Journal of Management Practice, 3*(3), 25-38.

Amahalu, N.N., Okudo, C.L., Okafor, O.O., & Onyeka, C.M. (2023). Effect of human resource cost on profitability of quoted industrial goods firms in Nigeria. *International Journal of Research in Commerce and Management Studies (IJRCMS) 5*(3), 60-76.

Anuonye, N. B. (2016). Effect of intellectual capital on return on assets of Insurance firms in Nigeria.*Global Journal of Management and Business Research: C Finance*, 16 (*1*).

Anuonye, N.B. (2015). Intellectual capital measurement: Using the earnings per share model of quoted insurance companies in Nigeria, *International Journal of Accounting and Finance,* 10*(1) 88-98.*

Apiti C., Ugwoke R. & Chikezie N. (2012). Intellectual capital management and organizational performance in selected food and beverages companies in Nigeria. *International Journal of Advanced* Scientific *Research and Management 2(1) 47-58.*

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management,* 17(*1*).

Bontis, N. (2004). National intellectual capital index:A United Nations initiative for the Arab region.*Journal of Intellectual Capital*, 5(*1*), 13-39.

Bontis, N., & Fitz-enz, J. (2002). Intellectual capital ROI: A causal map of human capital antecedents and consequents. *Journal of Intellectual Capital,* 3(*3*).

Chen, M., Cheng, S., &Yuchang, H. (2005).An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance.*Journal of Intellectual Capital, 6, 159–176.*

Dewi F.A. & Saudah S. (2012).The relationship between intellectual capital and corporate performance.*Procedia - Social and Behavioral Sciences* 40.

Efenyumi, P.M.E., Okoye, E.I. & Nwoye, U.J. (2022). Empirical Evaluation of Effects of Intellectual Capital Efficiency on Firm's Value in Some Selected Listed Firms on Nigerian Exchange Group, *International Journal of Research in Social Science and Humanities (IJRSS)*, 3(6), 16 – 37.

Ekwe, M.C. (2012). Human Resource Accounting: The Relationship between Intellectual Capital and Financial Performance. University of Nigeria, Nsukka

Ewereoke V. (2018). Effect of intellectual capital on performance of firms listed on Nigeria. Stock Exchange. *Research Journal of Finance and Accounting Vol.9*, No.8, 2018

Firer, S. & Williams, M. (2003). Intellectual Capital and Traditional measures of Corporate Performance. *Journal of Intellectual Capital.Vol.4* No.3 Pp. 48-60

Flamholtz, E.G. (1999).Current issues, recentadvancements and future directions in human resource accounting. *Journal of Human Resource Costing & Accounting*, 4 (*1*), 11-25.

Hitt, M.A., & Ireland, D.R. (2002). The essence of strategic leadership: Managing human and social capital. *Journal of Leadership & Organizational Studies,* 9(*1*).

Hojatollah S. & Alireza H. (2013). The review on impact of intellectual capital on financial performance of investment companies accepted in Tehran stock exchange organization (TSEO). *European online journal of natural and social sciences*, 2 (*3*).

Holienka, M. & Pilková A. (2014). Impact of intellectual capital and its components on firm performance before and after crisis. *The Electronic Journal of Knowledge Management.*12 (*4*).

Idekwulim, P.C. (2014). Teach yourself group accounts. *Ayobola printing and publishing.*

Inyada, S.J. (2018). Intellectual capital and bank performance in Nigeria: An empirical analysis using pragmatic models. *American International Journal of Contemporary Research*, 8(2).

Kurfi, S.A., Udin N.M. & Bahamman, S.M. (2017). The impact of intellectual capital on the financial performance of listed Nigerian food products companies. *Journal of Accounting and Taxation*, 9 (*11*).

Kwarbai, J.D. & Akinpelu M.A. (2016). Human capital efficiency and corporate performance: The Nigerian perspective. *The international journal of business & management*, 4 (*3*).

Maditinos, D. (2011). The impact of intellectual capital on firm's market value and financial performance. *Journal of Intellectual Capital*, 12(1) 132-151.

Maditinos, D., Chatzoudes, D., Tsairidis, C., & Theriou, G. (2011).The impact of intellectual capital on firms' market value and financial performance, *Journal of Intellectual Capital*, 12(1), 132-151.

Mahoney J.T. & Pandian, J.R. (1992). The resource-based view within the conversation of strategic management. *Strategic Management Journal Vol. 13*, 363-380

Nezhad, A. A., Yamrali, O. & Aboujafari, M. R. (2014). The impact of intellectual capital on return of fixed assets and firms' total assets return which listed on the Tehran Stock Exchange. *Asian Economic and Financial Review*, 4(*10*).

Nnorom, N. (2017) Industrial goods stocks worst hit by recession. Retrieved from http://www.vanguardngr.com/2017/01/industrial-goods-stocks-worst-hit-recession

Ofurum, C.O. & Aliyu, A.S. (2018). Intellectual capital component and financial performance of quoted banks in Nigeria. *International Journal of Advanced Academic Research | Financial Management. Vol. 4*, Issue 2 (February 2018)

Onyekwelu, U.L, Okoh, J.I. & Iyidiobi, F.C. (2017).Effect of intellectual capital on financial performance of banks in Nigeria.*European Journal of Accounting, Auditing and Finance Research*, 5 (2).

Ordonez de Pablos, P. (2003). Intellectual capital reporting in Spain: A comparative view. *Journal of intellectual capital*, 4 (*1*).

Penrose, E. (1959). The theory of the growth of the firm. Oxford: Basil Blackwell Publisher.

Pulic, A. (2000). VAIC – An accounting tool for IC management. *International Journal of Technology Management, 20, 702–714.*

Pulic, A. (2004). Intellectual capital-does it create or destroy value?, Measuring Business Excellence 8(1), pp. 62-8.

Rastogi, P.N. (2000). Sustaining enterprise competitiveness is human capital the answer. *Human System Management.*19 (*3*).

Saudah, S. (2005). Intellectual Capital and management accounting practices. School of Management. Bradford, University of Bradford.

Shiu, H. J. (2006). The application of the value added intellectual coefficient to measure corporate performance: evidence from technological firms. *International Journal of Management*, 23 (*2*), *356–365.*

Sullivan, P.H. (1999) 'Profiting from intellectual capital', Journal of Knowledge Management, Vol. 3, No. 2, pp.132–143

Sydler, R., Haefliger, S., & Pruksa, R. (2013). Measuring intellectual capital with financial figures: Can we predict firm profitability? European Management Journal, In Press, Corrected Proof, Available online 7 March.

Tatiana A. & Tatiana G. (2017).Intellectual capital and its impact on the financial performance of Russian manufacturing companies. *Foresight and STI governance*, 11 (*1*).

Umenzekwe, P.C., Okoye, E.I., Nwoye, U.J., Adeniyi, S.I. & Uchegbu, C.U. (2022). Voluntary Disclosures of Human Resource Management in the COVID-19 Pandemic Financial Reporting Era of Consumer and Industrial Goods Firms Listed on the Nigeria Exchange Group, *Journal of Global Accounting*, 8(2), 1 - 12.

Wang, J. (2008). Investigating market value and intellectual capital for S & P 500.*Journal of Intellectual Capital, 9, 546–563.*

Yasmin, K.K. & Milé, T. (2014).The effects of intellectual capital on performance in Australian small and medium Enterprises (SMEs). *Anzam*