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Assessing the Influence of Intellectual Capital on Financial Performance of Quoted Manufacturing Firms in Nigeria

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Abstract

A key global concern that relates to intellectual capital and financial performance of quoted manufacturing firms is the measurement and disclosure models relating to intellectual capital lie on the problem of non-standardized in various international markets. This study looked at the influence of intellectual capital on financial performance of quoted manufacturing firms in Nigeria. In particular, the study examined the impact of structural capital, human capital and capital used on financial performance of quoted manufacturing firms in Nigeria. The study utilized ex-post facto research design. The study obtained data through secondary sources to gathered financial data. The population of the study comprised thirty-three (33) quoted manufacturing firms in Nigeria which include both industrial and consumer goods firms, as of December 31, 2024, quoted on the Nigerian Exchange Group (NGX). Descriptive statistics and inferential statistics using Random-Effects via Generalized Least Squares (GLS) regression were applied to analyze the data. Results showed that all components of intellectual capital used in this study were not statistically significant predictors of financial performance at a significant level, as the value of the Wald chi-square was insignificant. The regression results showed poor explanatory ability with a negligible contribution to financial performance. The findings imply that firm-specific heterogeneity, as opposed to intellectual capital revaluations across time, is a great source of financial performance. Though the intellectual capital has theoretical significance as far as the financial performance of the Nigerian manufacturing sector is concerned and seems minimal. The study recommended that manufacturing firms ought to do a better job of recognizing and reporting on the components of intellectual capital; and policymakers need to come up with uniform reporting framework to enhance financial transparency, comparability and strategic thinking in emerging markets.

Keywords: Capital employed, financial performance, human capital, intellectual capital, structural capital.

1.0 INTRODUCTION

All over the world, financial performance is a major criterion for determining the sustainability, efficiency and competitiveness of a firm in a dynamic economic environment. The contribution of Africa to this discussion is an indication of the continuous struggle into maximising the firm value because of low utilisation of the intellectual capital resources (Etim et al., 2024). Financial performance complications in Nigeria are exacerbated by lack of investments in human growth and knowledge systems as a result of curtailing productivity

and innovativeness of firms in the country. The intellectual capital that consists of human capital, structural capital, and capital employed assumes a central position in improving financial performance by promoting innovations, efficiency, and strategic decision-making (Rabiu et al., 2025; Yahaya et al., 2025). Human capital is a term that is used to describe the applied skill, knowledge, and capacity of the employees (Gara et al., 2025). Structural capital involves institutionalized knowledge including systems, databases and organizational culture. Capital employed involves the sum of all resources used in production and value creation (Iheanacho et al., 2023). All these factors interplay under intellectual capital to influence profitability, efficiency of assets as well as return on investment. The interrelationship is that high human and structural capital maximize the usage of capital employed improving monetary parameters. The study is justifiable within the context of quoted manufacturing firms in Nigeria has the study aimed to determine how components of the intellectual capital influence financial performance, especially in the context of the industrial sector in Nigeria that struggled with infrastructure problems, shortage of human resources and international competition.

Statement of the Problem

Literature has pointed out that poor utilization of the intellectual capital have major limiting factor on financial performance of Nigerian firms with evidence provided indicating that companies under investing in both the human and structural capital which led to poor performance of such firms in terms of profitability. The inefficiency and lowers confidence levels of investors has decelerates economic growth due to constraints on innovation, competitiveness and workforce (Okoye & Okerekeoti, 2021). Despite efforts by the regulators of the industry and companies to embrace the use of knowledge-based practices, they have been sporadic and not sustained. The concepts of low productivity, inefficient use of assets, and poor strategic alignment sought through intellectual capital in solving performance problems (Yahaya et al., 2025). However, there is still a huge gap in the empirical studies between elements of intellectual capital and most prominently structural capital and financial performance at firm level to the Nigerian industrial sector. This study aimed to fill this contextual and analytical gap. Therefore, the following research questions were answered in the following manner; how is structural capital related to financial performance of quoted manufacturing firms in Nigeria? What is the impact of human capital on financial performance of quoted manufacturing firms in Nigeria? And what is the relationship between capital employed and financial performance of quoted manufacturing firms in Nigeria? The general aims of the study was to look at how intellectual capital influence financial performance of the listed manufacturing firms in Nigeria. The study specifically: establish the effect that structural capital has on financial performance of quoted manufacturing firms in Nigeria; determine the influence that human capital has on financial performance of quoted manufacturing firms in Nigeria; determine the effect that capital employed has on financial performance of quoted manufacturing firms in Nigeria.

Research Hypotheses

H01: The structural capital does not significantly influence financial performance of quoted manufacturing firms in Nigeria;

H02: Human capital does not statistically affect financial performance of quoted manufacturing firms in Nigeria.

H03: Capital employed has no statistically significant impact on financial performance of quoted manufacturing firms in Nigeria.

2.0 LITERATURE REVIEW

2.1 Conceptualization of Variables

2.1.1 Financial Performance

Financial performance is a term used to denote the degree of asset utilization by firm out of its major source of business to release revenues and profits. Financial performance is an essential metric of the successfulness and sustainability of a firm which shows its profitability, liquidity, efficiency and solvency (Okoye & Okerekeoti, 2021). Commonly used financial measures include Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin and Earnings Per Share (EPS) (Githaiga *et al.,* 2022). Such indicators enable the stakeholders to determine the efficiency of the operations as well as ability to create value in the long-run of the firm particularly firms such as manufacturing cases with good financial performance, show good use of resources, market competitiveness, and an asset of growth and investor confidence (Yahaya *et al.,* 2025; Rabiu *et al.,* 2025).

2.1.2 Intellectual Capital

Intellectual capital refers to the intellectual know-how, expertise, and innovation as well as procedures that provide a competitive edge to an organization and serves to enrich its physical properties. As posited by Okoye et al. (2021) said, intellectual capital is an intangible asset that occupies a central position in the processes of generating value and financial performance in knowledge firms. Intellectual capital has three key components (namely, human capital, structural capital and relational capital). The intellectual capital can affect innovation, efficiency in processes, and decision-making in the environment of industrial companies such as those listed as manufacturing companies (Zafar & Yasin, 2025). Knowledge and strategic strengths are common practices embraced by the firms that have a high level of intellectual capital, which make them perform better in

dynamic and competitive environments than their competitors (Etim et al., 2025

2.1.3 Structural Capital

Structural capital includes databases, organizational routines, processes, strategies and culture; they are considered as non-human stores of knowledge within an organization. Okoye and Okerekeoti (2021) assume that structural capital fosters productivity among employees and institutionalizes the knowledge of employees to ensure performance and knowledge creation consistency. Structural capital is what gives the human capital operative capability (Rabiu et al., 2025). These are information systems, operational manuals, quality control systems, patents, and organizational culture (Etim et al., 2025). Yahaya et al. (2025) argue that when a good structural capital is developed, it leads to the operational efficiency, diminishes potential redundancy, and promotes strategy alignment to influence financial performance.

2.1.4 Human Capital

Human capital is the pool of skills, knowledge, practices, social and personality traits, such as creativity, that is invested in the capacity to do work and create economic wealth. According to Abraham and Okee (2023), human capital is one of the fundamental aspects of organizational performance directly affecting productivity, innovation, and strategic realization. Human capital comprises of experience, skills, training, and expertise of the employees that play a vital role during problem-solving, innovation, and efficient production (Okeke, 2024). The manufacturing sector is one of the areas where the competency of the workforce defines the level of maintaining the high quality, enhanced processes, and financial targets of the firm (Hermawan *et al.,* 2025). Human capital is a form of capital investment in an employee development that is sustainable over the long term (Uwhejevwe-Togbolo *et al.,* 2025).

2.1.5 Capital Employed

Capital employed is the amount of capital that a business uses to make profits, and it is usually computed as all assets minus current liabilities (Rabiu et al., 2025). Capital employed signifies the finances that have been invested in the business to sustain business processes and expansion (Nneji et al., 2024). The capital employed is the measure of the efficiency with which the company manages capital to produce profits which is associated with intellectual capital when viewed in conjunction with how the human and structural capital maximizes its application predetermined states are (Etim et al., 2025; Yahaya et al., 2025). Successful mobilization of capital utilized in combination with qualified resources and sufficient infrastructures translates to better utilization of assets, returns on capital, and financial performance (Abraham & Okee, 2023).

Theoretical Underpinning

The following theories was undertaken for proper establishment of this study. Theories such as intellectual capital theory and the human capital theory. Nonetheless, the study is based on Theory of Intellectual Capital since the theory has helped in conceptually explaining how the intangible assets enhance organization value and performance.

2.2.1 Intellectual Capital Theory

A theory on Intellectual Capital developed by Leif Edwinsson and Michael Malone in 1997 states that intangible resources like knowledge of employees, organizational processes, innovation capability, and customer relationship is of great importance to the value building, competition, and long-term financial success of a firm. According to the theory, knowledge-intensive resources hold more value than physical resources in the contemporary economy (Iheanacho *et al.,* 2023). Human, structural, and relational capital mostly contribute to the performance; and the conventional accounting method of reporting the economic value of the resources ignores a substantial part of their economic benefits (Firdaus & Nuryaman, 2025; Nneji *et al.,* 2024). Nevertheless, the critique seeing the theory is that it does not contain any standard modes of measuring, it gives an over-importance to intangibles by underrating physical resources and has not been validated well enough across industries (Hussien *et al.,* 2025). Weaknesses related to the intellectual capital theory are related to the impossibility of measuring intellectual resources, issues with integrating this theory with financial reporting because intellectual capacity theory lack of applicability to other sectors (Rehman *et al*., 2022; Okoye & Okerekeoti, 2021). Nevertheless, the strengths of the theory are the emphasis on the unseen value drivers, strategic investment in knowledge and innovation, and sustainable performance not beyond the suggested financial performance (Ismaila & Emmanuel, 2024).

2.2.2 The Human Capital Theory

The Human Capital Theory which was formulated by Theodore W. Schultz in 1961 and followed by Gary Becker in 1964 opined that Human Capital Theory remain as the economic value that embodies the knowledge, skills, education, training and health in people which are very important investment in an individual in boosting his/her productivity and in the growth of a country or an organization. The theory presumes that individuals and organizations make rational decisions to invest in human capital since the human capital investment translates to better performance, high income, and economic results (Nwachukwu, 2024). However, condemned to be cold as it looks on humans as economic resources only, not social or emotional inequalities with no distinction on access to education and training (Jemiluyi & Jeke, 2024). The limitation of human capital theory is in its simplistic side of human conduct, inability to cover non-market contributions of education, and the inability to measure the qualitative representation of human resources (Onwuchekwa et al., 2024). However, Human Capital

Theory has the advantage of promoting all these attributes: the view of education and training as crucial elements of economic growth, a foundation of policy decision-making, and a direct correlation between human growth and the better organizational and financial achievement (Onwuchekwa et al., 2024).

Review of Empirical Studies

A Research conducted by Rabiu *et al.,* (2025) was based on the impact of structural and capital-employed efficiency on financial performance of listed consumer goods companies in Nigeria. An ex-post

The panel data was subjected to facto research design, where purposive sampling was done to achieve a sample size of twelve (12) sample out of population of twenty-one (21) listed consumer goods in Nigeria. The time frame of the study was 2013 to 2023 and multiple regression methodology was implemented with use of STATA 13 software. The findings indicate that structural capital and capital-employed efficiency have a positive and significant influence on the financial performance.

Yahaya *et al.,* (2025) carried out a study on the impact of structural and capital employed efficiency on financial performance of the listed consumer goods firms in Nigeria. The panel data was in an ex-post facto research design with purposive sampling techniques applied to arrive at twelve (12) sample size out of twenty-one (21) listed consumer goods in Nigeria. The analysis extended between the years 2013 and 2023 and resorted to multiple regression analysis through the STATA 13 program. The findings show that both structural capital and efficiency of capital employed have positive and significant influence on the financial performance.

Zafar and Yasin (2025) studies the relationship between assorted elements of IC (human capital, structural capital, relational capital and capital utilized) and vital financial performance measures, such as the returns on assets (ROA), returns on equity (ROE) and Tobin (Q) (TQ). A thorough meta-analysis was undertaken by utilizing the PRISMA format, the synthesis of data of 29 peer-reviewed journal articles found in Scopus and web of science with an aggregate of 8,871. They also reached the same positive statistically significant effect size ($r = 0.227$, $p = 0.001$) between IC and financial performance in Islamic banks. The greatest positive influence on ROA and ROE is viewed in human capital that defines the importance of skilled staff members as the key to success. Both structural and relational capital have inconsistent and poor effects and capital employed adds greatly to profitability.

Hermawan *et al.,* (2025) conducted a research on how enterprise risk management (ERM), Intellectual Capital (IC) and Investment opportunities set (IOS) affect Firm Value. The quantitative method was followed and the analysis was done based on secondary data using the financial statements and annual reports of halal labeled companies in Indonesia stock exchange and Bursa Malaysia listed in 2017-2023. The outcomes of their study proved that enterprise risk management (ERM), Intellectual Capital (IC) and investment opportunities set (IOS) were the key determinants of firm value.

Gara *et al.,* (2025) reviewed a study carried out within the context of capital structure and its effect on the financial performance of some of the listed goods in Nigeria in 2014-2023. The capital structure is a mixture of equity and debt used by firms in financing the business operation in order to increase financial performance. The study employed ex-post facto research design and the analysis done on the data selected relied on the annual reports and accounts of three (3) purposively sampled industrial goods firms in Nigerian in NGX; Dangote Cement PLC, Lafarge Africa PLC and BUA Cement PLC. The panel data was utilized to analyze the data to determine the relationship between capital structure variables and financial performance. The findings from the study showed that a higher equity ratio significantly improved financial performance; and a higher debt ratio equally impacted on the financial performance positively.

Okeke (2024) examined the effect of integrated reporting, financial and manufactured capital on financial performance of listed industrial goods firms in Nigeria. The study used an ex post facto research approach and secondary data were retrieved from the annual financial reports of selected industrial goods firms in Nigeria for eleven years from 2013-2023. Financial reporting is the dependent variable proxied by Return on Equity (ROE). IR is the independent variable proxied by financial capital and manufactured capital. EVIEWS 12 was used to carry out the regression analysis of the direct effect of relevant variables. His study found that Integrated Reporting proxied by financial capital and manufactured capital, does not have any significant relationship with the financial performance of firms listed under the industrial goods sector in Nigeria.

Etim *et al.,* (2024) examine the influence of intellectual capital on financial performance of listed manufacturing companies in Nigeria. The ex-post facto research design was employed in the study. The population was made of thirty-three (33) listed manufacturing companies in Nigeria that cut across two sub-sectors on the floor of Nigerian Stock Exchange (NSE) as at December 2022 of which twenty-six (26) entities were sampled for the study from annual reports and financial statements of the sampled entities from 2013 to 2021. The sourced data were analyzed using descriptive and inferential statistics. Fixed effect regression technique was used in the study. Their findings showed that human capital and relational capital had positive and significant influence on ROE of listed manufacturing companies in Nigeria.

Githaiga et al. (2022) examined the influence of structural capital on the financial performance of microfinance institutions (MFIs). The study examined 2,664 MFI-year observations for financial sustainability using a worldwide sample of 444 MFIs from 2013 to 2018. Value-added intellectual capital coefficients acted as indicators of intellectual capital, whereas operational self-sufficiency assessed financial sustainability. Three-panel data estimation models, including fixed effects, random effects, and the dynamic panel system generalised technique of moments, were employed for analysis. The findings indicate that the efficiency of structural capital adversely affects financial sustainability.

Okoye and Okerekeoti (2021) examined a study on the correlation between structural capital efficiency and economic value added in Nigerian publicly traded service firms, employing an ex-post facto research design with a sample of fifty-one companies from a total of eighty-two listed on the Nigeria Exchange Group (2010-2019). Data were obtained from annual reports and financial statements of chosen companies, in addition to announcements from the Nigerian Stock Exchange. The analysis utilised PLS Regression (Panel Least Squares). The research identified a substantial positive correlation between structural capital efficiency and economic value added at a 5% significance level. It is advised that companies persist in investing in information technology, databases, and training to enhance performance.

3. METHODOLOGY

An ex-post facto research design was considered suitable because it allowed the researcher to appropriately assess the influence of intellectual capital on financial performance of listed manufacturing companies in Nigeria. The nature of the study necessitated the adoption of ex-post facto research design which helped the researcher to ascertain the direction of the key variables of intellectual capital on financial performance of listed companies studied. The population of this study was made up of thirty-three (33) listed manufacturing companies in Nigeria drawn from both industrial and consumer goods entities. The companies whose shares were traded under the industrial and consumer goods listed on the Nigerian Exchange Group (NGX) as at 31st December, 2024 constituted the listed manufacturing companies. The choice of these two (2) sub-sectors to represent the listed manufacturing companies in Nigeria was because both industrial and consumer goods entities in Nigeria often consider the intellect of employees and managers as essential business resources that could drive the growth of their companies in rapid pace more than any other resources, the listed industrial goods were thirteen (13) and that of consumer goods were twenty (20). The study sampled twenty-six (26) companies consisted of eleven (11) industrial goods companies and fifteen (15) consumer goods entities whose shares were listed on the Nigerian Exchange Group (NGX) as at 31st December, 2024. The models were formulated based on the specific objectives of the study as presented below:

$ROEij=\beta o+\beta_1 INTCAPit_1+\beta_2 STSCAPit_2+\beta_3 HUMCAPit_3+\beta_4 CAPEMPit_4+et$.....*equ. (i)*
$ROEij=\beta o+\beta_1 INTCAPit_1+\beta_2 STSCAPit_2+\beta_3 HUMCAPit_3+\beta_4 CAPEMPit_4+et$.....*equ. (ii)*
$ROEij=\beta o+\beta_1 INTCAPit_1+\beta_2 STSCAPit_2+\beta_3 HUMCAPit_3+\beta_4 CAPEMPit_4+et$.....*equ. (iii)*

where:
INTCAP = Intellectual Capital
STSCAP = Structural Capital
HUMCAP Human Capital
CAPEMP = Capital Employee
i=Number of companies;
t=Number of years;
βo =Intercept of ROE;
β1 and β2 and β5=Coefficient of each of the independent variables;
et=Random error terms

Measurement of Variables

Variables	Variable Categories	Measurement	Source
Financial performance	Dependent	Measures by Return on Assets (ROA=Total Assets over Net Income ×100)	(Etim *et al.,* 2024)
Intellectual Capital	Independent	Human Capital + Structural Capital + Relational Capital	(Zafar & Yasin, 2025)
Structural Capital	Independent	The difference between revenue and costs, excluding human capital expenses, divided by total selling and distribution expenditures.	(Rabiu *et al.,* 2025)
Human Capital	Independent	The variance between revenue and costs, excluding human capital expenses, divided by human capital costs.	(Okeke, 2024)
Capital Employed	Independent	total amount of capital used for the acquisition of profits by a firm (Total Asset - Current Liabilities).	(Yahaya *et al.,* 2025)

Source: Authors Computation (2025)

4.0 Data Analysis

Data analysis was performed via the descriptive statistics for each of the variables were computed and presented in the Tables as follows.

Descriptive Statistics

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	234	1.495	1.594	0.025	14.031
STR_CAP	234	1.01	1.787	0	10.712
HUM_CAP	234	18.603	22.527	1.162	136.530
CAP_EMP	234	0.806	0.208	0.139	0.991

Source: Authors' Computation (2025)

The descriptive statistics of the study variables are represented in table 1. The mean of Return on Assets (ROA) is 1.495 and dispersion (Std. Dev. = 1.594) of the sample is large and the values are between 0.025 and 14.031. The mean of structural capital (STR_CAP) is 1.01 with the range of 0 to 10.712, which indicates that structural capital varies among firms. Human Capital (HUM_CAP) reflects an extreme number of variations in workforce investment with the highest average (18.603) and standard deviation (22.527). The average of Capital Employed (CAPEMP) is not far considerable (0.806) and the range is low (0.139-0.991), which indicates uniformity in capital usage across the companies.

Model Parameters

Table 2: Model Parameters (Coefficients) Robust

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]	Sig
STR_CAP	0.0839	0.0845	1.27	0.302	-0.0856	0.2305	
HUM_CAP	0.0453	0.0445	0.10	0.821	-0.0063	0.0063	
CAP_EMP	-0.4938	0.3552	-0.44	0.749	-1.9872	0.4285	
cons	1.0536	0.7554	3.03	0.004	0.5490	2.7959	***

*** p<.01, ** p<.05, * p<.1

Source: Authors' Computation (2025)

In table 2 above shows robust model parameters to estimate the effect of structural capital, human capital and capital employed on ROA. The effect of structural capital (Coef = 0.0839, p = 0.302) and that of human capital (Coef = 0.0453, p = 0.821) are both positive but not statistically significant. Capital employed has negative coefficient (-0.4938) and also nonsignificant (p = 0.749). Constant term is significant (Coef = 1.0536, p = 0.004), which means that there is a strong baseline ROA in case of all other predictors. In the model of the study there are no meaningful predictors in any of the independent variables.

Correlation Matrix

Table 3: Correlation Matrix

Variables	ROA	STR_CAP	HUM_CAP	CAP_EMP
ROA	1.000			
STR_CAP	0.153	1.000		
HUM_CAP	-0.096	-0.018	1.000	
CAP_EMP	-0.157	-0.245	0.594	1.000

Source: Authors' Computation (2025)

Table 3 provides the correlation matrix that demonstrates relationships between Return on Assets (ROA), Structural Capital (STR_CAP), Human Capital (HUM_CAP), and Capital Employed (CAP_EMP). ROA is highly positively correlated with STR_CAP (r = 0.153) and negatively correlated with HUM_CAP (r = -0.096) and CAP_EMP (r = -0.157). As well, STR_CAP exhibits weak to negative correlation with HUM_CAP (r = -0.018) and CAP_EMP (r = -0.245). There is a good positive relationship between HUM_CAP and CAP_EMP (r = 0.594), which means possible collinearity.

Model Summary

Table 4: Model Summary of Intellectual Capital and Financial Performance

	Number of obs = 234
R-sq:	Obs per group:
Within = 0.0364	Min = 4.059
Between = 0.0783	Avg. = 6.0324Z
Overall = 0.0782	Max = 8.362
corr(u_i, X) = 0 (assumed)	Wald chi2(4) = 1.785
	Prob > chi2 = 0.6470
	(Std. Err.adjusted)
sigma_u	0.7689
sigma_e	0.9284
Rho	0.5609 (fraction of variance due to u_i)

Authors Computation (2025)

Table 4 shows the results of a Random-effects GLS regression analysis which measures the Intellectual Capital and Financial Performance correlation. The evidence was an average of 6.03 observations per group with a minimum value of 4.06 and a maximum value of 8.36 observations per group. The low explanatory powers are depicted using the R-squares: The ranges of the R squares show that in R 2 = 0.0364, approximately 3.6 percent of the dispersion among entities over time can be explained by the model. Between R 2 = 0.0783 which means that approximately 7.8% of variance between entities is explained. R 2 = 0.0782 which indicates that the model explains a proportion of 7.8 percent in the overall variance of financial performance. Wald chi-square statistic = 1.785 and the p-value = 0.6470 denotes that there is no joint statistical significance of the explanatory variables (components of intellectual capital) in determining the financial performance at the conventional significance levels. The estimates of the variance components give sigma u = 0.7689, the standard deviation of the not-observed entity-specific effects and sigma e = 0.9284, that of the idiosyncratic error. rho = 0.5609, implying that 56.1 percent of the variance in dependent variable is attributable to residuals between firms rather than within firms over time. The zero in the random-effects model (corr(u_i, X) = 0) functionality can be explained by the fact that both random effects and regressors are not correlated.

4.1 DISCUSSION OF FINDINGS

The results of the Random-effects GLS regression provide some information about the correlation between intellectual capital and financial performance. The panel data allowed the variance between the firms as well as the temporal variation. There was however a low explanatory power with little variability explained by the model. The values of R-squared indicate that the variables of the intellectual capital have little explanatory power towards financial performance. Also the Wald chi-square statistic was not statistically significant together. It means that intellectual capital might not have significant impact on the firm performance. The estimates of variance indicate that majority of differences arise due to the variations at the firm level. Random-effects model was used appropriate to the fact that regressors and individual effects were not correlated. The study meant to be in conjunction with the research conducted by Githaiga et al. (2022) who studied the effect of the structural capital on the financial performance of the microfinance institutions (MFI), as their results showed that the efficiency of structural capital has had a negative impact on financial sustainability. As well, concurred with the research of Okeke (2024) that looked into the impact of integrated reporting, financial and manufactured capital on the financial performance of the above industrial goods firms in Nigeria that are listed. The result of his study revealed that Integrated Reporting proxied by financial capital and manufactured capital, is not related significantly to the financial performance of firms listed under the industrial goods sector in Nigeria. Nonetheless, this study results is not congruent with the results of the study conducted by Hermawan et al. (2025) that examined a study concerning the effects of enterprise risk management (ERM), Intellectual Capital (IC) and investment opportunities set (IOS) on firm value; their research findings established that enterprise risk management (ERM), Intellectual Capital (IC) and investment opportunities set (IOS) all have significant effect on firm value. The difference of results was explained by references to the differences in the nature of the firms under investigation as well by the differences in the sectoral context, economic environment, measurement models, sample size and dimensions of intellectual capital and financial indicators

4.2 CONCLUSION

The study investigated the relationship between intellectual capital and financial performance of quoted manufacturing firms on the basis of a Random-effects GLS regression model. The results showed that the intellectual capital component explanatory power was rather weak in predicting the financial performance and model explained just a little percentage of the variance between firms and within firms. Furthermore, the collective unimportance of the explaining variables implies that the intellectual capital as computed in this test fails to affect the financial efficiency in an imperative manner. Most of the change in performance

was explained by differences of firms as opposed to change over time, making it clear that firms are heterogeneous in the sample. In general, the theoretical significance of intellectual capital is still high, whereas the empirical influence of intellectual capital on financial performance cannot be judged as high in terms of the present study

4.3 RECOMMENDATIONS

The study recommended that manufacturing firms should be enticed to pay more attention to fine identification, development, and reporting of intellectual capital aspects like innovation, organizational processes, and relational capital. Policymakers and regulation agencies, as well, should encourage using the uniform frameworks of the disclosures of intellectual capital so that financial statements could be analyzed better and more comparatively. The study suggested that longitudinal data in combination with stronger econometric specifications that might provide further insights concerning the relationship between long-term intellectual capital and long-term financial performance should be established. Further studies for future research should look into the possibility of considering alternative and expanded measures of the intellectual capital so as to be able to tap in all the value that intellectual capital holds.

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