INTEGRATED REPORTING AND FIRM VALUE OF LISTED MANUFACTURING FIRM IN NIGERIA

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ABSTRACT

Integrated reporting has become increasingly important in corporate reporting, aiming to provide stakeholders with a comprehensive understanding of a company's value creation process. However, the impact of integrated reporting and various forms of capital on firm value in the context of manufacturing firms in Nigeria remains underexplored. This study aims to fill this gap by examining the relationship between integrated reporting (proxying intellectual, human, manufacturing, and social/relationship capital) and firm value among manufacturing firms listed on the Nigerian Stock Exchange. The population of interest includes manufacturing firms listed on the Nigerian Stock Exchange. A sample of 59 manufacturing companies was selected based on specific criteria, including complete annual reports and accounts for the period from 2011 to 2022. The elimination sampling technique was used to select 8 companies for analysis. Data were collected from annual reports and accounts covering the period from 2011 to 2022. Variables included firm value (measured by Tobin's Q), intellectual capital, human capital, manufacturing capital, social and relationship capital, and leverage. The study employed multiple regression analysis to examine the relationship between integrated reporting variables and firm value. Findings indicate that manufacturing capital and leverage significantly influence firm value, while intellectual capital, human capital, and social/relationship capital do not show statistically significant correlations. In conclusion, the study underscores the importance of manufacturing capital and financial leverage in enhancing firm value among manufacturing firms in Nigeria. Recommendations include focusing on strengthening social and relationship capital and optimizing financial leverage within reasonable bounds to potentially increase firm value.

Keywords: *Firm Value, Integrated Reporting, Intellectual Capital, Manufacturing Capital etc….*

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1. Introduction

Integrated reporting has emerged as a comprehensive approach to corporate reporting, encompassing financial and non-financial information to provide stakeholders with a holistic view of a company's value-creation process (Adams, 2015). In Nigeria, the adoption of integrated reporting among manufacturing firms listed on the Nigerian Stock Exchange (NSE) has gained traction due to increasing demands for transparency and accountability from various stakeholders, including investors, regulators, and society at large (Oyelere et al., 2018).

Firm value, a key metric in corporate finance, reflects the market's assessment of a company's worth and prospects for future earnings (Copeland et al., 2014). It is influenced by various factors, including financial performance,

growth prospects, and market sentiment. In the context of manufacturing firms listed in Nigeria, firm value is crucial for attracting investment, accessing capital markets, and sustaining long-term growth in a competitive business environment.

Intellectual capital encompasses the intangible assets and knowledge resources that contribute to a firm's value-creation process (Bontis et al., 2000). Human capital refers to the skills, expertise, and capabilities of employees within an organization (Becker, 1964). Manufacturing capital represents the tangible assets and infrastructure utilized in the production process, including machinery, equipment, and facilities (Bettis et al., 1992). Social and relational capital involves the relationships, networks, and reputation that a company builds with its stakeholders, including customers, suppliers, and communities (Nahapiet & Ghoshal, 1998).

Manufacturing firms listed in Nigeria face practical challenges related to intellectual, human, manufacturing, social, and relational capital. These challenges include inadequate investment in research and development, skill shortages, outdated production technologies, limited access to finance, weak supply chain relationships, and reputational risks arising from social and environmental issues.

This study contributes to the literature by examining the role of integrated reporting and various forms of capital in enhancing firm value within the context of manufacturing firms in Nigeria. The findings will provide insights for policymakers, regulators, investors, and managers on the importance of adopting integrated reporting practices and investing in different forms of capital to enhance firm performance and sustainability.

In conclusion, integrated reporting plays a crucial role in enhancing firm value by providing stakeholders with a comprehensive understanding of a company's value creation process. Additionally, investments in intellectual, human, manufacturing, social, and relational capital are essential for improving firm performance and competitiveness in the manufacturing sector. This study underscores the significance of integrated reporting and capital management practices for manufacturing firms listed in Nigeria, emphasizing the need for greater transparency, accountability, and strategic investments to drive long-term value creation.

2. Literature revie and Development of Hypotheses

Integrated reporting looks at how different types of capital like intellectual, human, natural, social/responsibility, and financial all work together to create value for a firm. The idea is that by reporting on all these different areas in a more connected way, it can help stakeholders like investors understand the firm better and potentially increase the firm's value. A firm's value, often measured by its market capitalization, shows what investors and the market as a whole think the firm is worth (Adams & Simnett, 2011). It's an important metric that shows how financially healthy and well-positioned a firm is. So, for companies listed in Nigeria, understanding what drives their value is important for both researchers and people working in business.

Financial capital, or a firm's ability to manage money, make profits, and pay its bills, is important for its value. When a firm is good at using its financial resources, it often leads to higher value because it shows the firm is well run financially and can continue operating. Furthermore, a firm's manufacturing like its physical assets, production abilities, and how efficiently it operates also impact value (El-Deeb, 2019). Companies with state-of-the-art factories and streamlined processes tend to have higher value since they're more competitive and cost-effective. In addition, relationship capital involves building and managing ties with stakeholders like customers, suppliers, and the community. Strong relationships can positively affect value by creating loyal customers, reliable supply chains, and a good reputation for the firm. In other words, intellectual capital includes intangible assets like patents, trademarks, and proprietary tech. Companies with more intellectual capital often have an edge over competitors, leading to higher value. Innovation, research and development, and strategic management of intellectual property contribute a lot to a firm's intellectual capital base (Eccles & Krzus, 2010). Also, human capital, or a firm's workforce skills, knowledge, and expertise, is one of the biggest drivers of value. Employees who are well-trained and motivated enhance operations, innovation, and flexibility, positively impacting value.

Some studies looked at how integrated reporting and different types of capital affect firm performance and value. The results showed things like reporting on social issues and different types of capital positively influence performance in some cases, while environmental reporting had a negative effect in one study. Other research confirmed that preparing integrated reports is linked to higher growth in firm value. Therefore, Suttipun (2017) investigated the connection between integrated reporting and Thailand's financial performance in his study. Tobin Q was the dependent variable in this study, which covered 150 firms between 2012 and 2015. The independent

variables were firm size and a variety of capital reporting indices. The results showed that while environmental reporting had a negative effect on performance, corporate social reporting had a positive one. In addition, Usanova and Khakimzyanova (2017) investigated the impact of integrated reporting on market value in another study. After examining five hundred observations from various industries and geographical areas between 2010 and 2016, they concluded that integrated reporting contributed positively to the value growth of a firm. Also, Soumillon (2018) investigated integrated reporting's value relevance in South Africa. In 2017, the research comprised 63 companies and employed multiple independent variables in conjunction with adjusted market value of equity as the dependent variable. Descriptive statistics and pooled ordinary least square regression were used in the study. The finding found that integrated reporting has no significant association with firm value.

Adegbie et al. (2019) examined the impact of integrated reporting on the market value of 38 consumer and industrial goods companies that were listed between 2012 and 2016 on the Nigerian Exchange. The study's ex-post facto research design was employed by the researchers, who also chose particular companies. Regression analysis is one of the descriptive and inferential statistics they used to analyze the data they gathered from the companies' publicly available financial statements. The study found that a firm's value, as determined by Tobin's Q, was significantly impacted by integrated reporting. Tobin's Q was significantly impacted negatively by the financial capital and positively but not significantly by the manufactured capital. There were negative and negligible effects from the human and intellectual capital as well as from the natural capital. The study also discovered that the effect of integrated reporting on Tobin's Q was highly influenced by a firm's size and leverage. Furthermore, Nwoye et al. (2021) looked at the effect of integrated reporting on the value of oil and gas companies in Nigeria in a different study. According to the study, integrated reporting significantly raises a firm's value in both Nigeria and South Africa. The findings imply that firm's financial, human, natural, social/responsibility, and intellectual capital positively affects stakeholders' opinions of the value-creation process in those economies. Also, at the 6th Interdisciplinary Conference of Management Researchers in 2021, Fernando and Jeewanthi (2021) conducted a study on the effect of integrated reporting on the value of Sri Lankan banks and finance companies that hold licenses. Between 2015 and 2020, the study, which looked at 20 licensed banks and finance companies in Sri Lanka, discovered a strong inverse relationship between integrated reporting and firm value.

The study of Akpan et al. (2022) looked at how integrated reporting affected listed manufacturing companies in Nigeria's value between 2011 and 2020. Tobin Q was used as the measure of firm value, and they employed proxies such as a human capital, manufacturing capital, and relationship capital. The results demonstrated that the value of listed manufacturing companies in Nigeria is considerably increased with human capital. The study did find, however, that the only factor significantly influencing company value was human capital. According to this data, there is a correlation between increased firm value and the human capital. In a similar vein, Nwoye et al (2022) investigated how integrated reporting affected the stock values of the continent's two biggest economies—Nigeria and South Africa. The study's time frame was from 2015 to 2018, and Tobin's Q ratio was employed as a stand-in for firm value. Five capitals were used by the researchers to classify integrated reporting: financial, human, natural, social/responsibility, and intellectual capital. To evaluate the possible impact of integrated reporting on the value of oil and gas companies in South Africa and Nigeria, panel multiple regression analysis was used. The choice between using random or fixed effects was made using the Hausman test. According to the findings, integrated reporting significantly improves company values in both South Africa and Nigeria. This suggests that companies that use integrated reporting practices have higher values.

On this note the study therefore put forward the following hypotheses:

$H0_1$: Manufacturing Nigeria firms' intellectual capital has no significance effect on firm value.

$H0_2$: Manufacturing Nigeria firms' human capital has no significance effect on firm value.

H03: Manufacturing Nigeria firms' manufacturing capital has no significance effect on firm value.

$H0_4$: Manufacturing Nigeria firms' Social and relationship capital has no significance effect on firm value.

3. METHODOLOGY

Due to the historical nature of the data used, this study used an ex-post facto research design. There were 59 companies from six different sectors listed on the NGX that were involved in manufacturing as of December 31, 2022. All firms listed after 2010 and those without complete annual reports and accounts for the period covered were

disqualified from inclusion in the sample. Based on the availability of the data needed for analysis throughout the study, 8 companies were chosen using the elimination sampling technique. Additionally, the data used were limited to the period from 2011 to 2022. The study period was strategically chosen to encompass the period surrounding the implementation of international financial reporting standards in 2012. Multiple regression techniques were employed to analyze panel data through STATA 13. The technique is considered appropriate because it helps establish relationships between dependent and independent variables and provides the causes and effects of their relationship. In addition, the multicollinearity and heteroskedasticity tests were conducted to check for the validity and reliability of the model.

This study adapts the model of Akpan et al. (2022) and modified as:

$$TQ_{it} = \beta_0 + \beta_1 IC_{it} + \beta_2 HC_{it} + \beta_3 MC_{it} + \beta_4 RC_{it} + \mathcal{E}_{it}$$

Where: TQ = Firm Value

IC = Intellectual Capital

HC= Human Capital

MC = Manufacturing Capital

RC = Social and Relation Capital.

i = Cross Section

t = Time

$\mathcal{E}$ = error Term

where: TQ=FV = market value of all outstanding shares, which is share price * outstanding shares, TA = total asset, which is the total value of property plants and equipment + cash + inventories + receivables, D = net debt.

4. RESULT PRESENTATION AND DISCUSSION

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
fv	96	55.702	51.32	5.61	213.53
vaic	96	2.978	2.274	-6.37	9.87
rce	96	3.365	3.739	.13	26.99
hce	96	2.3	1.349	.13	6.77
mc	96	22.155	2.174	17.83	25.84
lev	96	1.621	1.922	.45	13.51

Source: STATA Output, 2023

The variable has 96 observations, as Table 1 demonstrates. The firm value (FV) measured by tq has a minimum value of 5.61, a maximum value of 213.53, a standard deviation of 51.32, and a mean of 55.702. The average value of 55.702 indicates that the observations for this variable are generally within this range. A comparatively wide range in the data is indicated by the standard deviation of 51.32. Additionally, Table 1 shows that the value-added intellectual coefficient (VAIC), which measures intellectual capacity, has a mean of 2.978, a standard deviation of 2.274, a minimum value of -6.37, and a maximum value of 9.87. The mean value of 2.978 indicates that the observations for IC are, on average, about this value. A wide range in the data is indicated by the standard deviation of 2.274. Table 1 also reveals that the Social and Relation Capital (RCE) has a minimum value of 0.13, a maximum value of 26.99, a standard deviation of 3.739, and a mean of 3.365. The average value of 3.365 indicates that the observations for IC are generally in the range of this value. A significant range in the data is indicated by the standard deviation of 3.739. Similarly, Table 1 displays the values for human resources efficiency (HCE), which range from a minimum of 0.13 to maximum of 6.77, with a mean of 2.3 and a standard deviation of 1.349. The average value of 2.3 indicates that the IC observations are generally in the range of this value. A significant range in the data is indicated by the standard deviation of 1.349. Additionally, Table 1 shows that the natural log of non-current assets, which is used to measure manufacturing capital (MC), has a mean of 22.155, a standard deviation of 2.174, a minimum value of 17.83, and a maximum value of 25.84. The average value of 22.155 indicates that the IC

observations are generally near this value. The 2.174 standard deviation indicates a wide range of data. Leverage (lev) has a mean of 1.621, a standard deviation of 1.922, a minimum value of 0.45, and a maximum value of 13.51, according to Table 1. With a mean value of 1.621, the observations for IC are likely to be roughly in this range on average. The data show a significant spread, as indicated by the standard deviation of 1.922.

Table 2: Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) fv	1.000					
(2) vaic	0.198	1.000				
(3) rce	-0.036	0.379	1.000			
(4) hce	0.195	0.938	0.394	1.000		
(5) mc	0.622	-0.071	-0.257	-0.071	1.000	
(6) lev	0.288	0.105	-0.179	0.085	0.372	1.000

Source: STATA Output, 2023

A matrix of correlations between the following six variables is shown in Table 2: fv, vaic, rce, hce, mc, and lev. When two variables have a positive correlation coefficient, it means that when one increases, the other also tends to increase. This implies that "fv" and "mc" have a correlation of 0.622, which indicates a moderately strong positive relationship between the two variables. The "fv" and "vaic" correlation of 0.198 points to a marginally positive correlation. When there is a negative correlation coefficient, it means that one variable tends to decrease as the other increases. In this case, the "mc" and "rce" correlation of -0.257 points to a somewhat negative relationship. Strong positive correlation between "vaic" and "hce" is indicated by the high correlation (0.938) between these two variables. With a correlation of 0.372, "mc" and "lev" appear to have a somewhat positive relationship. One does not infer causation from correlation. It is not always the case that changes in one variable lead to changes in the other just because there is a high correlation between the two.

Regression results

fv	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
vaic	2.359	4.932	0.48	.632	-7.308	12.026	
rce	.718	1.078	0.67	.505	-1.394	2.83	
hce	12.315	7.959	1.55	.122	-3.285	27.914	
mc	16.312	4.386	3.72	0	7.715	24.908	***
lev	4.68	2.273	2.06	.04	.224	9.135	**
Constant	-351.038	98.629	-3.56	0	-544.347	-157.728	***
Mean dependent var		55.702	SD dependent var			51.320	
Overall r-squared		0.423	Number of obs			96	
Chi-square		43.215	Prob > chi2			0.000	
R-squared within		0.320	R-squared between			0.567	

*** p<.01, ** p<.05, * p<.1
Source: STAT Output, 2023

The coefficient of determination (R-squared) in Table 3 is 0.423, meaning that 42.3% of the variability in the dependent variable can be explained by the model. 43.215 is the chi-square statistic, and the p-value is 0.000. This implies that there is statistical significance for the model as a whole. The model fits the data well, as indicated by the p-value of the chi-square test.

Although the coefficient is 2.359, the p-value of 0.632 indicates that it is not statistically significant at conventional levels. Given that zero is present in the confidence interval (-7.308, 12.026), it is possible that the variable is not a significant predictor of "fv." This supports the first hypothesis, which holds that the intellectual capital of Nigerian manufacturing firms has no bearing on firm value.

Once more, at a p-value of 0.505, the coefficient of 0.718 is not statistically significant. There is zero in the confidence interval (-1.394, 2.83). This supports the second hypothesis, which holds that the human capital of Nigerian manufacturing firms has no bearing on firm value.

The p-value is 0.122 and the coefficient is 12.315. Despite being relatively wide, the confidence interval (-3.285, 27.914) points to a lack of statistical significance. This also confirms the third hypothesis, which holds that the manufacturing capital of Nigerian firms has no bearing on the value of the firm.

On the other hand, the coefficient is 16.312 and, at the 0.01 level of significance (p-value = 0.000), statistically significant. Since there is no zero in the confidence interval (7.715, 24.908), there is a strong positive correlation between "mc" and "fv." This disproves the third hypothesis, which holds that the social and relationship capital of Nigerian manufacturing firms has no bearing on firm value.

The p-value is 0.04 and the coefficient is 4.68. The absence of zero in the confidence interval (0.224, 9.135) indicates a strong positive correlation between "lev" and "fv."

Conclusion and Recommendations

Out of all the variables that were looked at, the regression results indicate that "mc" (with a coefficient of 16.312, p < 0.01) and "lev" (with a coefficient of 4.68, p < 0.05) are statistically significant predictors of the dependent variable "fv." According to the positive coefficients, there is a correlation between rising "mc" and rising "lev" and rising "fv." The variables "vaic," "rce," and "hce," on the other hand, do not show statistically significant correlations with "fv." About 42.3% of the variability in "fv" is explained by the overall model, which is statistically significant (Chi-square = 43.215, p < 0.001) (Overall R-squared = 0.423).

From the conclusion the study therefore recommends that:

i   Nigerian manufacturing companies focus on building and strengthening their social and relationship capital. The firm value may benefit from initiatives that build solid interpersonal ties both inside and outside the company.

ii To potentially increase firm value, businesses should think about optimizing their financial leverage within reasonable bounds. On the other hand, extreme leverage should be avoided as this could put money at risk.

iii The functions of human, intellectual, and manufacturing capital should be further examined and reevaluated in the context of Nigerian manufacturing companies. This could entail improving or reevaluating capital-related strategies.

References

Adams, C. A. (2015). The international integrated reporting council: A call to action. *Critical Perspectives on Accounting, 27*, 23-28.

Adams, C. A., & Simnett, R. (2011). Integrated reporting: An opportunity for accountability or a stakeholder-smokescreen? *Accounting, Auditing & Accountability Journal, 24*(3), 290-314.

Adegbie, F.F., Akintoye, I. R. & Isiaka, B. (2019). Evaluation of integrated reporting and the value of listed manufacturing firms in Nigeria. *European Journal of Accounting, Auditing & Finance Research, 7*(7), 31-59.

Akpan, D. C., Charles, U. J., & Robinson, A. G. (2022). Effect of integrated reporting on firm's value: The Nigeria manufacturing sector experience. *European Journal of Accounting, Auditing and Finance Research, 10*(8), 10-26.

Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education.* Columbia University Press.

Bettis, R. A., & Hall, W. K. (1992). Strategic management and the straightjacket: An editorial essay. *Organization Science, 3*(2), 137-139.

Bontis, N., Chua Chong Keow, W., & Richardson, S. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of Intellectual Capital, 1*(1), 85-100.

Copeland, T., Koller, T., & Murrin, J. (2014). *Valuation: Measuring and managing the value of companies* (6th ed.). John Wiley & Sons.

Eccles, R. G., & Krzus, M. P. (2010). *One report: Integrated reporting for a sustainable strategy*. John Wiley & Sons.

El-Deeb, M. S. (2019). The impact of integrated reporting on firm value and performance: Evidence from Egypt. *Alexandria Journal of Accounting Research, 3*(2), 1-50. DOI: 10.21608/ALJALEXU.2019.56831

Fernando, M. B. V. L., & Jeewanthi, H. A. C. (2021). Impact of integrated ron firm value: A study of licensed Banks and Finance companies in Sri Lanka. *Proceedings of 6th Interdisciplinary Conference of Management Researchers (6th ICMR 2021),* Sabaragamuwa University of Sri Lanka.

Fernando, M.B.V.L., & Jeewanthi, H.A.C. (2021). Impact of Integrated Reporting on Firm Value: A Study of Licensed Banks and Finance Companies in Sri Lanka. In *Proceedings of 6th Interdisciplinary Conference of Management Researchers (6th ICMR 2021),* Sabaragamuwa University of Sri Lanka.

Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review, 23*(2), 242-266.

Nwoye, C., Egbunike, P., & Osegbue, I. (2021). Integrated Reporting and Firm Value in the Nigerian and South African Oil and Gas Sector. *Econometric Research in Finance, 6*(2), 163-181.

Nwoye, C., Egbunike, P., & Osegbue, I. (2022). Effect of Integrated Reporting on Firm's Value: The Nigeria Manufacturing Sector Experience. *European Journal of Accounting, Auditing and Finance Research, 10*(8), 10-26.

Oyelere, P., Laswad, F., & Fisher, R. (2018). Corporate governance, integrated reporting, and stakeholder management: Evidence from Nigeria. *Journal of Applied Accounting Research, 19*(3), 369-387.

Soumillion, V. (2018). The value relevance of integrated reporting in South Africa (M.Sc. Dissertation). Universiteit Gent

Suttipun, M. (2017). The effect of integrated reporting on corporate performance: Evidence from Thailand. *Corporate Ownership and Control, 15*(1), 133–142. http://doi.org/10.22495/cocv15i1art13

Usanova, D. S., & Khakimzyanova, L. K. (2017). Integrated Reporting as a Factor of Firm's Value Growth. *Journal of Economic & Management Perspectives, 11*(3).