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INTELLECTUAL AND HUMAN CAPITAL REPORTING AND FIRM VALUE OF LISTED CONSUMER AND INDUSTRIAL GOODS FIRMS IN NIGERIA: A COMPARATIVE ANALYSIS

Jonah Okpe Arumona[1], Clement Ejiofor Okeke[2]*, and Solomon Mangba Aza[3]
[123]Department of Accounting, Bingham University, Karu, Nasarawa State, Nigeria
*Corresponding Author: Clement Ejiofor Okeke[2]

Abstract: Despite their importance to Nigeria's economic growth and employment, the consumer and industrial goods sectors have struggled with volatile performance and persistent market undervaluation, raising critical questions about the drivers of firm value. This study therefore examined the effect of intellectual and human capital reporting on firm value among listed firms in these sectors between 2013 and 2024 An ex-post facto research design was adopted, and secondary data were collected from the annual reports of 22 firms over twelve years. Firm value was proxied by the Price-to-Book(P/B) ratio, while intellectual and human capital were measured using two approaches: finance-based indices and disclosure level-based indices. Revenue growth was included as a control variable. Data were analyzed using random-effects GLS regression with robust standard errors in STATA 16. The results show that Intellectual Capital Reporting measured with finance-based indices (ICRF in) has a positive and statistically significant effect at 5% level, whereas when measured with disclosure-based indices (ICRD iscl), the effect is not statistically significant. Human Capital Reporting measured through finance-based indices (HCR Fin) was negative and statistically significant at 5% level, showing that heavy workforce-related spending reduces firm value. Human Capital Reporting measured through disclosure level-based indices (HCRD iscl) was not statistically significant, confirming weak investor responsiveness to disclosure level human capital information. The study concludes that finance-based measures of intellectual and human capital demonstrate statistically significant effects, with intellectual capital enhancing firm value, whereas human capital reduces it. However, disclosure-level indices for both intellectual and human capital do not show statistically significant effects on firm value. It is recommended that companies strengthen the reporting of finance-based intellectual capital and clearly report the productivity impact of human capital investments. Regulators such as the Financial Reporting Council of Nigeria should provide guidance and encourage the adoption of standardized disclosure-level templates aligned with international frameworks, in order to enhance clarity, comparability, and value relevance.

Keywords: Firm value, Intellectual Capital Reporting, Human Capital Reporting, Price-Book Value, Revenue Growth.

I. INTRODUCTION

Globally, firm value is directly tied to how well the business generates money and meets the goals of its stakeholders. The assessment of a company's worth is based on its ability to generate large profits and effectively carry out its social responsibility (Khunkaew et al., 2023; Kurniasih et al., 2022; Mahmudah et al., 2023; Posner, 2024). In practice, this means that firm value reflects not only short-term profitability but also the ability to sustain performance in ways that satisfy both investors and society. The investors' perceptions of a company's success rate are reflected in its valuation (Azaro et al., 2020; Chabachib et al., 2020; Sutrisno et al., 2023), and to meet stakeholder demands, the company will endeavour to improve its value (Gelb et al., 2023; Segura et al., 2024). This underscores the fact that valuation is not purely an accounting outcome but also a market signal shaped by stakeholder expectations. There are many ways a firm's value could be measured or assessed, one of which is the firm's financial performance (Adegboyegun et al., 2020; Christofi et al., 2024; Harnovinsah et al., 2023). As a novel approach, reporting of a firm's capital embodies many facets of an organization's value creation, as it brings all dimensions of the capital into a single report, offering a thorough understanding of the business (Hoque, 2017). This shift suggests that value is no longer viewed only through financial outcomes but also through how firms deploy and report on their intangible resources. These essential components of capital reporting, also known as integrated reporting, are captured succinctly in the International Integrated Reporting Council (IIRC) Framework (IIRC, 2021). The frameworks described the value-creation processes. This study focuses on how two of the six capital reporting,

intellectual, and human capital, affect firm value. Compared to earlier studies, this study is innovative as it compares the outcome of separate analyses usi5ng both finance-based measurement and disclosure-based measurement for the intellectual and human capital reporting and focuses on two important sectors of the Nigerian economy. By examining intellectual and human capital in this way, the study addresses a key evidence gap on whether the Nigerian market responds more to financial outcomes or to disclosure narratives in capital reporting.

In many developing and emerging economies, in contemporary corporate settings, the assessment of firm value has become progressively intricate due to the convergence of systemic and structural dynamics. Market fluctuations, driven by variable investor sentiment and geopolitical instability, have intensified valuation unpredictability, rendering conventional financial indicators less reliable (Brealey et al., 2025). Exacerbating this situation is the persistent macroeconomic rigidity marked by inflationary trends, currency volatility, and limited fiscal space, all of which distort market signals and diminish investor assurance (World Bank, 2025). Furthermore, misvaluation arises from dominant market perceptions and inconsistencies between perceived enterprise worth and actual performance, particularly in sectors prone to speculative behaviour. Risk management systems have likewise attracted increased scrutiny, as numerous organisations exhibit inadequate mitigation strategies in response to emerging uncertainties, thereby intensifying value depreciation. Technological advancements further disrupt traditional valuation models and destabilise corporate worth by swiftly rendering physical assets and operational models obsolete. Deficiencies in governance such as opacity and ineffective board oversight compromise stakeholder confidence and impair organisational resilience. In addition, restricted liquidity positions hinder firms' strategic responsiveness and operational adaptability, adversely affecting value-creation potential. Ultimately, valuation has assumed new dimensions due to sustainability imperatives and the escalating demand for ESG alignment, especially among entities that lag in adapting to shifting environmental and societal expectations. These multifaceted pressures necessitate a critical reappraisal of how firm value is defined, assessed, and communicated, thus underpinning the rationale for the current study.

In the Nigerian context, firm value in Nigeria's consumer and industrial goods sectors is determined by a combination of macroeconomic factors, firms' operational performance, and the perceptions of investors. The consumer goods sector, which includes Fast-Moving Consumer Goods (FMCG) companies, is crucial to the Nigerian economy but faces challenges such as rising inflation, currency devaluation, and high production costs, which erode profit margins and reduce investor confidence (Adegbie et al., 2019; Ariemu, 2024). On the other hand, the industrial goods sector, comprising cement, building materials, and manufacturing firms, is constrained by high energy costs, infrastructure deficits, and fluctuating demand (Tunji, 2024). Accurately measuring firm value is essential for investors and corporate decision-makers. One widely used metric is the Price-to-Book (P/B) Ratio, which compares a company's market capitalization to its book value. Nigeria's consumer and industrial goods sectors operate in a volatile environment shaped by inflation, currency instability, and shifting policies, yet the way investors value these firms often fails to reflect their true capital strength. Existing studies focus mainly on financial performance, leaving little clarity on whether intellectual and human capital reporting actually explains market valuation. To address this gap, this study operationalises firm value using the Price-to-Book (P/B) Ratio measured as Market Price per Share divided by Book Value per Share because it captures investor perceptions beyond accounting figures and reveals how capital reporting translates into market confidence (Fernando, 2024; Shittu et al., 2016; Olujinmi, 2024).

Firm value represents the market's assessment of a company's worth relative to its book value and reflects investor perception of performance, confidence, and long-term sustainability. It is measured using the Price-to-Book (P/B) Ratio, calculated as Market Price per Share divided by Book Value per Share, following established methodologies in financial analysis literature (Doblas et al., 2020; Marangu & Jagongo, 2014; Shittu et al., 2016; Sibarani et al., 2024). This market-based metric reflects how the stock market values a company relative to its net assets: a ratio greater than one indicates strong growth prospects and investor confidence, while a ratio below one suggests undervaluation or weak performance. Recent market evidence (Proshare, 2024; Chapel Hill Denham, 2023; Olujinmi, 2024) shows that many listed consumer and industrial goods firms in Nigeria record Price-to-Book ratios below one, indicating that investors value these firms less than their book values. The Cardinal Stone Consumer Goods Sector Report (2024) further reveals that Flour Mills of Nigeria Plc recorded P/B ratios of 0.7 (2022), 0.6 (2023), and 0.6 (2024 forecast), while Dangote Sugar Refinery Plc traded at approximately 1.2 times its book value in 2023 and 1.1 times in 2024 levels only marginally above unity, signifying weak market valuation relative to equity. Nestlé Nigeria Plc also reported a negative shareholders' equity position in 2023, implying substantial erosion of book value. Collectively, these illustrative cases and sectoral reports (Proshare, 2024; Cardinal Stone, 2024) indicate that a significant portion of Nigeria's consumer and industrial goods firms continue to trade at or below book value, underscoring a persistent market undervaluation of firm value in these sectors.

This persistent undervaluation constitutes the core empirical problem and motivation for the present study. The consistent evidence of low or marginal Price-to-Book ratios suggests that firm value is influenced by factors beyond traditional financial measures. Accordingly, this study seeks to determine whether enhanced intellectual and human capital reporting can improve investor perception and strengthen firm valuation in Nigeria's consumer and industrial goods sectors. These capitals capture intangible drivers such as knowledge, skills, innovation, and relational value that underpin sustainable performance (Hoque, 2017; IIRC, 2021), forming the analytical basis for the next section of this study

Intellectual capital reporting is measured using both financial indicators and disclosures in annual reports. The financial perspective is assessed through the Modified Value-Added Intellectual Coefficient (MVAIC), which captures the efficiency of employed capital, human capital, structural capital, and relational capital in generating value. The disclosure perspective covers reported information on patents, copyrights, licences, software, systems, procedures, protocols, knowledge transfer, brands, reputation, and goodwill, along with other indicators such as organisational learning programmes, customer satisfaction, and collaborations between industry and universities. Together, these financial and disclosure measures provide a comprehensive view of how intellectual capital contributes to firm performance and market value.

Human capital reporting is also measured using financial indicators and disclosures in annual reports. From a financial perspective, human capital is captured through human capital efficiency (HCE), calculated as the ratio of value added to total employee costs, with employee costs measured by salaries and allowances. From a disclosure perspective, annual reports are analysed for information on employee training and development, career pathways, leadership and managerial competencies, collaboration skills, employee turnover, labour relations, occupational health and safety, workforce diversity, equal opportunity, and talent pipelines from both universities and internal staff. These financial and disclosure measures together reflect how firms invest in, utilise, and report on human capital.

The motivation for this study stems from the persistent undervaluation of Nigerian consumer and industrial goods firms, despite continuous investments in innovation, employee competence, and organisational learning. While these sectors remain critical to Nigeria's industrial and employment base, their market performance—as reflected in low or stagnant Price-to-Book ratios—suggests that investors may not fully recognise the value created through intangible resources. This gap highlights the need to understand how intellectual- and human-capital reporting influences market perception and firm valuation. By linking disclosure quality to a tangible market metric (P/B), this study contributes to efforts aimed at improving transparency, enhancing investor confidence, and promoting fair valuation of firms in Nigeria's real sector.

The key innovation of this study lies in its comparative measurement approach, which jointly applies financial-based and disclosure-based indices of intellectual and human capital reporting to explain variations in firm value, as measured by the Price-to-Book (P/B) ratio. While most prior studies relied solely on financial proxies such as return on assets (ROA) or earnings per share (EPS), this research integrates market-based valuation with the quality of narrative and disclosure reporting. This dual approach not only captures how intangible resources contribute to firm performance but also how transparent reporting enhances market perception and investor confidence. By applying this framework to Nigerian consumer and industrial goods firms, the study introduces a more holistic and context-sensitive model for assessing the value relevance of intellectual and human capital disclosures in emerging markets.

In Nigeria's consumer and industrial goods sectors, sustaining firm value has remained difficult due to economic instability, rising production costs, currency devaluation, and weak disclosure practices. Persistent inflation and import dependence in consumer goods, alongside energy and demand shocks in industrial goods, have depressed profitability and investor confidence. Recent evidence shows that share prices in these sectors remain volatile and sentiment-driven rather than performance-based. For instance, (BusinessDay, 2025) reported declines in Berger Paints Plc (₦34.10 to ₦32.00) and Champion Breweries Plc (₦17.38 to ₦16.38), while (Punch Newspapers, 2025) noted similar markdowns across food and beverage stocks.

However, even as firms invest in human and intellectual capital—through employee development, innovation, and process improvements the market continues to undervalue them, suggesting that these intangibles are not fully priced due to weak or inconsistent disclosures. Because of this volatility, the price per share is an unreliable indicator of a firm's value. A more appropriate, market-anchored yet asset-based metric is the Price-to-Book Value (P/B) ratio, which links market perception to the firm's net assets. This study, therefore, investigates whether variations in intellectual- and human-capital reporting explain the differences in P/B ratios among listed Nigerian consumer and industrial goods firms.

Despite the global adoption of integrated reporting (IR), its use in Nigeria's consumer and industrial sectors remains under-researched. Evidence on IR's impact on firm value is mixed. Some studies report a positive effect: Adegbie et al. (2019) found improved firm value in Nigerian banks; Akpan et al. (2022) observed enhanced market performance in listed Nigerian firms; Appah and Onowu (2021) reported increased transparency and investor confidence in insurance; Bangara et al. (2024b) documented higher valuations in emerging markets; Chirairo and Molele (2024) and El-Deeb (2019) linked IR adoption to better financial performance; Juniarti et al. (2023) and Ni et al. (2021a) found a positive relationship between IR quality and investor decision-making; and Nwoye et al. (2021) noted improvements in firm reputation. Conversely, Ahmad et al. (2021), Igbinovia and Agbadua (2023), and Nurkumalasari et al. (2019) found no significant effect of IR on firm value in Malaysia, Nigeria, and Indonesia, respectively. Most research has focused on banking (Adegbie et al., 2019; Dey, 2020; Doni et al., 2019; Mansor et al., 2021) and insurance (Appah & Onowu, 2021; Forvis Mazara Group, 2015; IR NETWORK et al., 2015), leaving consumer and industrial firms largely unexplored. Related studies by Albetairi et al. (2018) and Opanyi and Omare (2022) produced conflicting findings, highlighting the need for further research in these sectors.

To bridge this gap, this study investigates the impact of intellectual and human capital reporting on the firm value of listed consumer and industrial goods firms in Nigeria, employing both financial-based measures and disclosure level-based measures for the two capitals. This study provides empirical insights into whether intellectual and human capital reporting enhances firm value in these critical sectors. The study has reviewed the problem of declining firm value in Nigeria's consumer and industrial sectors and examined whether intellectual and human capital reporting serve as a viable strategy to enhance transparency, investor confidence, and long-term value creation. The following hypotheses are developed for the study to accomplish the objectives:

Ho_1: Intellectual Capital Reporting Index, measured using a financial-based approach, has no significant effect on the price-to-book(P/B) ratio of consumer and industrial goods firms in Nigeria.

Ho_2: Intellectual Capital Reporting Index measured using a disclosure level-based approach has no significant effect on the price-to-book(P/B) ratio of consumer and industrial goods firms in Nigeria.

Ho_3: Human Capital Reporting Index, measured using a financial-based approach, has no significant effect on the price-to-book(P/B) ratio of consumer and industrial goods firms in Nigeria

Ho_4: Human Capital Reporting Index, measured using a disclosure level-based approach, has no, significant effect on the price-to-book(P/B) ratio of consumer and industrial goods firms in Nigeria.

II. LITERATURE REVIEW

2.1 Conceptual Framework

2.1.1 Intellectual Capital Reporting

Intellectual Capital Reporting (ICR) is the systematic process of identifying, measuring, managing, and communicating an organisation's knowledge-based resources and capabilities to internal and external stakeholders (Dumay & Guthrie 2019). Intellectual capital (IC) refers to non-physical resources that are not fully reflected in financial statements but remain central to innovation, growth, and long-term value creation. It includes knowledge, skills, processes, and relationships that enhance competitiveness and efficiency (IIRC, 2021). IC is generally classified into three categories**:** human capital, representing employees' knowledge, skills, and experience; structural capital**,** which covers systems, processes, intellectual property, and organisational culture that support human capital; and relational capital**,** which relates to customers, suppliers, partners, and stakeholders that sustain loyalty and reputation. While essential to business success, measuring IC remains difficult due to its intangible nature and the absence of universally accepted valuation methods. Organisations rely on indicators such as employee retention, training expenditure, research and development, patents, customer satisfaction, and brand equity, but differences in approach create inconsistencies and limit comparability (Dumay & Guthrie, 2019; IIRC, 2021). To improve disclosure, frameworks such as the Skandia Navigator**,** the Balanced Scorecard, and the European InCaS Project have been applied, while Integrated Reporting (IR) has further expanded recognition of IC by embedding it within broader value creation. Regulatory initiatives such as the EU's NFRD, GRI, and SASB also encourage reporting on human capital, innovation, and stakeholder engagement. Despite these developments, ICR faces challenges of subjectivity, lack of standardisation, and difficulties in linking IC directly to financial outcomes. Best practices suggest integrating IC measures with financial indicators, applying assurance mechanisms, and leveraging technology for more reliable reporting. Overall, ICR provides important insights into the intangible resources that

drive competitiveness and sustainable growth, and its effective use strengthens transparency, accountability, and stakeholder confidence (IIRC, 2021).

2.1.2 Intellectual Capital Reporting Index

Intellectual Capital Reporting Index (ICRI) is a structured disclosure assessment framework designed to evaluate the breadth, depth, and quality of corporate reporting on intellectual capital. The index is conceptually based on the International Integrated Reporting Council's (IIRC, 2021) Integrated Reporting (IR) Framework and is in line with other international frameworks like the WICI Intellectual Capital Reporting Framework, the Global Reporting Initiative (GRI, 2025), and the OECD Guidelines on Intellectual Capital Measurement. The intangible, knowledge-based resources that propel innovation, competitiveness, and long-term value creation are referred to as intellectual capital. Human capital, structural capital, and relational capital are the three categories into which it is usually divided. Stakeholders can learn how businesses develop and use knowledge assets, innovation capability, and stakeholder connections to maintain competitive advantage through effective reporting on intellectual capital. In addition to the use of weighted disclosure index, this study will also measure Intellectual Capital Reporting as the Modified Value-Added Intellectual Coefficient (MVAIC), MVAIC = ICE + CEE, (Diyanty et al., 2019; Ulum et al., 2014)

2.1.3 Human Capital Reporting

Human capital, a fundamental component of intellectual capital, refers to the knowledge, skills, experience, and competencies possessed by employees that enable organizations to create value and achieve sustainable competitive advantage. It encompasses the collective abilities of a workforce to perform tasks, solve problems, and innovate, forming the foundation for organizational growth and efficiency. According to Tejedo-Romero and Araujo (2022), human capital governs and leverages an organization's other assets, both tangible and intangible, underscoring the notion that employees constitute the firm's most valuable resource. Usman et al. (2021) highlight that human capital comprises unique abilities, job experience, and specialized skills, which together determine employees' effectiveness in contributing to organizational goals. Rahman and Akhter (2021) further emphasize that human capital includes competencies such as knowledge, training, vocational qualifications, work-related expertise, entrepreneurial innovation, executive capabilities, and cultural diversity. Morrison (2020) reinforces that human capital embodies education, skill development, and training, which collectively enhance the organization's operational capacity and innovative potential. In essence, human capital represents the strategic, intellectual, and capability-based foundation upon which firms build performance, resilience, and long-term value creation.

2.1.4 Human Capital Reporting Index

The Human Capital Reporting Index (HCRI) is a comprehensive and systematic disclosure assessment framework that assesses the scope, quality, and consistency of corporate human capital reporting. The index is conceptually based on the International Integrated Reporting Council's (IIRC, 2021) Integrated Reporting (IR) Framework, and it is also aligned with internationally recognised disclosure standards such as the Global Reporting Initiative (GRI, 2025), the Sustainability Accounting Standards Board (SASB, 2025), and the IFRS Sustainability Disclosure Standards. In order to support organisational strategy and long-term value generation, human capital includes employees' skills, abilities, experience, and motivations as well as their health, safety, and well-being. Stakeholders can learn how businesses recruit, nurture, engage, and retain talent as well as how these approaches affect financial performance, productivity, and innovation through effective human capital reporting. In addition to the use of weighted disclosure index, this study will also measure Human Capital Reporting Index as HCEI = Value Added (VA) divided by Human Capital (HC). HC = Human Capital (calculated as total salaries and allowances for the company) VA= Total Revenue –(Operating Expenses – Salaries), (Kiran et al., 2015; Rasheed et al., 2018)

2.1.5 Firm Value

Firm value is the whole value of a business as assessed by its market position, financial performance, and potential for future expansion. When evaluating a company's financial health and prospects, investors, analysts, and other stakeholders use this crucial metric, which includes the total worth of all the firm's assets, both tangible and intangible. Any organization's priority is to raise the wealth and worth of its shareholders (Gharaibeh & Qader, 2017). Out of all the organisational performance metrics, stakeholders have paid close attention to firm value. According to Al-Matari et al., (2014)Investors must first assess the company's performance before making an investment in order to determine the firm's value. The value of an organisation can be affected by both endogenous and exogenous causes, and changes in a number of variables, such as the business's size, price-earnings ratio, dividend coverage ratio, etc., are associated with changes in firm value. A few factors that have been recognised as determining business worth include the organization's structure, current technology workforce, wealth, established hierarchy, etc. (Sucuahi & Cambarihan, 2016). Besides the traditional concept, the studies based on firm value pointed out that the stakeholders' value links with the firm value. Consequently, to expand the value relevant to the

firm, organizations have to enlarge the wealth creation to all the stakeholders (Busch et al., 2018; De Kluyver, 2024; HBS Online, n.d.; Lonkani, 2018; Nasrudin, 2025) (Nasrudin, 2025) (De Kluyver, 2024) (Busch et al., 2018) When the companies are not giving quality and adequate information to the stakeholders, the information asymmetry will not decline, and it will not enhance the value of the firm (Nurkumalasari et al., 2019). Therefore, business organizations must create a sound balance between information and shareholder wealth. In this study, firm value is proxied by the Price to Book ratio.

2.1.6 Price-To-Book (P/B) Ratio

The Price-to-Book (P/B) Ratio is an important financial indicator that is used to evaluate the market value and book value of a company. It offers insightful information about a stock's undervaluation and market value. The P/B ratio aids analysts and investors in determining the worth of physical assets such as manufacturing facilities and inventory in Nigeria's consumer and industrial goods sectors. Investment decision-making procedures, risk management techniques, and portfolio strategies can all benefit from this information. For those involved in Nigeria's consumer and industrial sectors, the P/B ratio approach has important ramifications. A company's success and prosperity are measured by its firm value, which is directly tied to the price of its stock market shares. Managers, stakeholders, shareholders, and possible investors utilise it as an objective and trustworthy statistic to evaluate an organization's operations and performance. Corporate value is the outcome of management's efforts in several areas, such as growth, capital costs, and net cash flow from investment choices, according to (Hirdinis, 2019; Uwah, 2019) . Since corporate value is a measure of how the market views the company, it is a crucial notion for investors. A company's worth is a reflection of its growth potential and is impacted by a number of factors, including dividend policy, funding choices, political connections, and investment choices. Identifying sources of value generation within the company and determining firm value are important for a number of reasons, such as company sales, mergers, and acquisitions. The market price of the company's common stock, which represents the firm's financing, dividends, and investment choices, is a good indicator of corporate value. In one of the studies conducted in Vietnam on the determinants of firm value, the firm value was measured from the share price (Ha & Minh, 2020). Moreover, in another study of optimization of capital structure and firm value, the firm value has been measured using the price-to-book value (Uzliawati et al., 2018). This study will measure Price-To-Book (P/B) Ratio as Price per share divided by book value per share for the sampled firms over the period.

2.1.7 Revenue Growth

Revenue growth refers to the increase in an organisation's inflows or sales over a given period and serves as a fundamental indicator of financial health. It reflects business expansion, stronger demand, or improved sales efficiency. Since revenue is the foundation for profitability, organisations place strong emphasis on expanding sales to improve shareholder value, earnings per share, and return on equity. A consistent rise in revenue not only attracts investors but also sustains competitiveness and long-term financial stability. Growth may be achieved organically through innovation, customer retention, and market expansion, or inorganically through mergers and acquisitions. While organic growth is considered more sustainable, inorganic growth can provide rapid expansion but involves greater risks and complexity. External factors such as inflation, consumer purchasing power, and industry competition also influence revenue growth, requiring organisations to adapt strategies. A key challenge is ensuring that higher sales translate into profitability, as discounting or expansion costs may erode margins. Effective cost management and efficiency are therefore essential for sustainable revenue growth. In this study, the revenue growth (RG) is used as a control variable and measured as current year revenue (CYRV) minus previous year's revenue (PYRV) divided by the previous year's revenue. That is $RG = \frac{(CYRV-PYRV)}{PYRV} \times 100$, (Kasoga, 2020; Lambe et al., 2022).

2.2 Empirical Review

2.2.1 Intellectual Capital Reporting and Firm Value

Iredele et al (2025) investigated the effect of intellectual capital disclosure (ICD) on financial performance and firm value among 26 listed manufacturing firms in Nigeria between 2018 and 2022. ICD was measured using an index comprising human, structural, and relational capital, while net profit margin and Tobin's Q proxied performance and firm value, respectively. The study, which used OLS regression, found that ICD had a statistically significant positive impact on financial performance but no statistically significant impact on business value. This suggests that although disclosure increases profitability, it is not yet factored into market valuation in Nigeria. These findings are consistent with Hatane et al. (2019) and Sulaiman et al. (2021), who also reported weak value relevance of ICD, but differ from Ariyibi et al. (2022), who found broader performance impacts. The authors concluded that Nigeria's low ICD practices are caused by a lack of regulatory enforcement and stakeholder demand, and they suggested standardising norms to increase comparability. Their analysis aggregated ICD into a single index within

the manufacturing sector, in contrast to the current study, which breaks down intellectual and human capital into finance-based and disclosure level indices over a longer 2013–2024 period and focused on consumer and industrial products enterprises.

Zennaro et al. (2024) examined how integrated reporting quality (IRQ) affected several organisational outcomes, to resolve the contradictory findings about the effects of IRQ and offer unbiased conclusions to support narrative literature reviews. In order to evaluate the effects of IRQ on market reactions, financial performance, cost of capital, the characteristics of financial analysts, and managerial choices, the study compiled the results of 45 empirical investigations carried out between 2013 and 2022, and a thorough examination of 653 effect sizes from 45 studies was done. The consequences fall into five categories and the sources of heterogeneity, including differences in IRQ measurement, settings, and methodology, were examined using a random-effects meta-regression model. The study found that IRQ has a positive effect on an organization's market value and that integrated reporting enhances market perceptions by reducing information asymmetry and boosting business transparency, thereby significantly enhancing market valuation, financial performance, and transparency while reducing capital expenses and management opportunism. The lack of uniform IRQ measurement methods, reliance on secondary data, and regional bias toward South Africa were noted, and it recommended obligatory integrated reporting and standardised IRQ measures. While both this study and the current study use secondary data, this meta-regression aggregates cross-country evidence with varied IRQ measurements, whereas the current study applies firm-level annual report data in Nigeria and concentrates on intellectual capital and human capital reporting and the firm value of listed consumer and industrial goods firms.

Keter et al. (2023) investigated the relationship between financial performance, intellectual capital disclosure and firm value, with the objective to examine the role of intellectual capital disclosure (ICD) in mediating between financial performance and firm value. The sample comprised 39 companies listed on Kenya's NSE (2010–2022) and a fixed and random effects model was used. The findings show that firm value is positively and significantly impacted by financial performance, ICD was negatively impacted by financial performance, and ICD mediated the relationship between business value and financial performance. It recommended voluntary disclosure and acknowledged limitations from the statistical tool version and small sample. While both studies rely on annual reports, this work positions ICD as a mediator at the NSE; the current study examines intellectual capital reporting and human capital reporting as explanatory variables for firm value of listed consumer and industrial goods firms in Nigeria.

Çam and Özer, (2022) studied intellectual capital and firm value in Turkish manufacturing companies to contribute to the examination of the growing gap between market values and book values. A full sample of 148 listed Turkish manufacturing firms (2005–2017) was analysed with the two-step system-GMM estimator. Intellectual capital components (human, relational, process, innovation) were related to firm value proxied by stock price, and larger stock prices were directly correlated with larger levels of each component and overall IC; human capital moderates the relationship between other IC components and market values and lag effects exist. The study recommended the establishment of a distinct financial reporting standard with comprehensive intellectual capital details and noted its restriction to Turkish listed industrial enterprises. While both studies use secondary data, this work is Turkey-based manufacturing with stock price and system-GMM; the current study is Nigeria-based, listed consumer and industrial goods firms, and focuses on intellectual capital and human capital reporting with firm-level annual report evidence.

Nguyen and Doan, (2020) investigated the impact of intellectual capital on firm value in Vietnam. The sample comprised 61 manufacturing firms listed between 2013 and 2018; OLS, REM, and FEM were used to solve econometric problems and increase precision. Intellectual capital was proxied by VAIC, while firm value was measured with Tobin's Q; leverage, firm size, and growth rate were controls. The study found that VAIC had a statistically significant positive effect on profitability, concluded that the more effectively a company uses its intellectual capital, the more profitable it will be, recommended attention to knowledge capital, and noted limitations from not considering other IC components, the manufacturing-only scope, and five years. The current study builds on this by not relying on VAIC alone and by focusing on intellectual capital and human capital reporting in listed consumer and industrial goods firms in Nigeria.

2.2.2 Human Capital Reporting and Firm Value

Gathoni and Muiru, (2023) analyzed the effect of integrated financial reporting on the value of firms listed at the Nairobi Securities Exchange. The objective was to investigate the influence of integrated financial reporting on the value of firms listed at the NSE using both primary data and secondary data from a sample of 64 firms (2016–2020). Integrated financial reporting was proxied by financial capital reporting, manufactured capital reporting,

intellectual capital reporting, human capital reporting, social, and environmental capital reporting, and firm value was measured with Tobin's Q using multiple linear regression models. The study found a positive and significant relationship between financial capital reporting and firm value, intellectual capital reporting had a positive and significant effect, human capital reporting had a positive and significant relationship, while manufactured, environmental and social capital reporting were insignificant. It concluded that integrated financial reporting has a positive relationship with firm value and recommended adoption but noted the five-year limitation. In contrast, the current study focuses on listed consumer and industrial goods firms in Nigeria, emphasises intellectual capital and human capital, and extends the review horizon beyond five years.

Opanyi and Omare, (2022) investigated the effect of integrated reporting on the firm value of listed companies in Kenya, to evaluate the potential benefits of IR on firms at the NSE. Using content analysis procedures to examine the extent of IR in annual reports of 56 companies (2015–2019), the study developed proxies for an IR index based on the IIRC framework and applied panel data regression. It found that IR affects firm value when measured with ROA (positive) and had no significant effect when measured with Tobin's Q (negative), concluding that IR is gaining prominence and recommending the use of IR by policy makers and preparers. The study highlighted defects including inferior firm value with respect to Tobin's Q and inconsistency between ROA and Tobin's Q. The current study addresses measurement directly through intellectual capital and human capital reporting for listed consumer and industrial goods firms in Nigeria, rather than an overall IR index, and applies disclosure-level and finance-based measures.

Abdulrahman and Ajayi, (2022) investigated the effect of integrated reporting disclosure on the value of insurance companies listed in the Nigeria Exchange Group for 2011–2021. The target population was insurance businesses listed in Nigeria; a sample of 10 companies was selected; and analysis of panel data included descriptive statistics, diagnostic tests, and multiple linear regression. Firm value was proxied by Tobin's Q while integrated reporting was proxied by debt ratio and corporate size. The study found a significantly negative relationship between debt ratio and financial performance and a positively significant relationship between corporate size and firm value, recommending voluntary adoption, eventual FRCN mandate, and inclusion of non-financial information on long-term prospects; the major setback was limited proxies for integrated reporting. Compared with this insurance-sector approach and proxies of debt ratio and size, the current study focuses on listed consumer and industrial goods firms and on intellectual capital and human capital disclosure.

Osho and Agbede, (2022) reviewed consolidated financial reporting disclosure and firms' value of worldwide companies in Nigeria for 2010–2021. From 113 non-financial international enterprises, 76 non-financial listed multinational companies were selected using purposive sampling. The GMM estimator was used on eleven years of annual reports; firm value was proxied by profit after tax and disclosure was proxied by debt ratio and corporate size, with firm age and growth opportunity as control variables. The study found that debt ratio significantly and negatively affects firm value while corporate size significantly and favourably affects firm value, concluding that consolidated reporting impacts value and recommended the implementation of voluntary implementation and inclusion of non-financial data on long-term prospects. It noted that findings may differ if more proxies aligned with the IIRC (2013 updated in 2021) were applied. The current study differs by focusing on listed consumer and industrial goods firms and on intellectual capital and human capital reporting using disclosure-level and finance-based measures.

Nwoye et al. (2021) evaluated the effect of integrated reporting on firm's value in the Nigerian and South African oil and gas sector from 2015 to 2018. Using the panel multiple regression method and the Hausman test, IR was proxied by intellectual capital, human capital, natural capital, social/responsibility capital, and financial capital, and firm value by Tobin's Q. Intellectual capital disclosure, natural capital disclosures, and social and responsibility capital disclosure maintained a consistent positive significant relationship to firm value, and the study recommended IR as compulsory in Nigeria while noting the short four-year period and single sector. The current study expands the sectoral focus to listed consumer and industrial goods firms in Nigeria, maintains emphasis on intellectual capital and human capital disclosure, and extends the horizon.

Islam, (2021) investigated the relationship between integrated reporting and firm performance in a voluntary disclosure regime in Bangladesh. The objective was to observe the disclosure pattern of IR and its relationship with ROA, ROE and market-to-book value. A sample of 20 firms listed under ten non-financial industries of the DSE (2015–2018) was analysed using OLS; IR was determined through manual content analysis based on an IR disclosure index (IRDIN), with log of total assets and financial leverage as controls. The study found that all three performance variables have a positive and substantial relationship with IRDIN, concluded that the practice of IR has attracted attention, recommended BSEC to mandate the IR checklist, and noted small sample,

short period, and possible subjectivity in IRDIN scoring. While both studies use secondary corporate reports, this is a voluntary context and index-based in Bangladesh; the current study is Nigeria-based, listed consumer and industrial goods firms, and focuses on intellectual capital and human capital disclosure over a longer period

Appah and Onowu, (2021) empirically investigated integrated reporting disclosures and firm value of listed insurance companies in Nigeria for 2010–2019. Using published annual financial statements with descriptive statistics, diagnostic tests, unit root test and multiple regression, the study measured firm value with Tobin's Q and considered IR with debt ratio, liquidity and corporate size as control variables. It found that IR had a significantly positive effect on corporate financial performance and recommended that FRCN to make the adoption of IR compulsory. The findings suffered a setback for failing to use the six IIRC capitals and for the control–independent variable mix. In contrast, the current study applies intellectual capital and human capital reporting specifically and applies them to listed consumer and industrial goods firms.

Adegbie et al. (2019) evaluated the effect of integrated reporting on the value of listed manufacturing firms in Nigeria using an ex-post facto design. From 53 manufacturing enterprises listed on the NSE as of June 30, 2017, 38 companies were selected, including consumer and industrial goods throughout 2012–2016, and regression analysis was applied. Firm value was proxied by Tobin's Q, and integrated reporting was proxied by Disclosure of Financial Capital, Disclosure of Manufactured Capital, Disclosure of Intellectual and Human Capital, and Disclosure of Natural Capital, with firm size and leverage as controls. The study found that firm value (TQ) was significantly impacted by integrated reporting, the impact of Disclosure of Financial Capital on TQ was significantly negative, and it concluded that IR is still in its infancy in Nigeria but may prove helpful, recommending awareness, training, and a framework for mandated implementation. Limitations included the five-period and the absence of Social and Relationship Capital (IIRC, 2021). The current study keeps the Nigerian focus but concentrates on intellectual capital and human capital reporting for listed consumer and industrial goods firms and extends the review period.

2.3 Theoretical Framework

2.3.1 Human Capital (HC) Theory

Human Capital (HC) Theory traces its roots to Smith (1973), who emphasized the importance of developing human potential as a critical factor in production. Schultz (1961) later formalized the concept of "investment in human capital," highlighting education, training, and health as ways to enhance economic value. The theory posits that higher levels of knowledge, skill, and ability lead to better employment opportunities and income (Blair, 2011, as cited in Wuttaphan, 2017). Davenport (1999) further elaborated that human capital encompasses abilities, knowledge, skills, personal talent, behaviour, effort, and time (Wuttaphan, 2017), where knowledge includes intelligence and both specific and general work-related understanding; skill represents expertise in performing tasks; talent is intrinsic personal ability; behaviour reflects ethics, norms, and personal beliefs; and effort involves the application of personal resources to achieve objectives. HC Theory is relevant to this study because it highlights that employees' knowledge, skills, and experience are critical drivers of firm value, and Integrated Reporting (IR) extends this idea by including human capital as one of the six capitals contributing to value creation, allowing firms to reveal how employee capabilities support organizational performance and long-term value creation in Nigerian consumer and industrial goods firms (Raimo et al., 2020; Van Zyl, 2022)

2.3.2 Intellectual Capital (IC) Theory

Intellectual Capital (IC) Theory, developed through the pioneering works of Edvinsson and Malone (1997), Stewart (1997), and Bontis (1998), focuses on intangible resources as central drivers of value creation, comprising knowledge, relationships, and organizational capabilities that enhance firm performance but are not always captured in traditional financial statements. These scholars categorize IC into human capital (employee knowledge, skills, and experience), structural capital (systems, processes, intellectual property, and culture), and relational capital (relationships with customers, suppliers, and partners), emphasizing that value emerges when these intangible resources are systematically identified, managed, and disclosed. IC Theory is relevant to this study because it provides a conceptual lens for understanding how firms' intangible resources—particularly human and relational capabilities are leveraged and reported to create value. Linking IC to disclosure practices supports the investigation of how integrated reporting of intangible assets influences market valuation, operational efficiency, and stakeholder perception in Nigerian consumer and industrial sectors (Galbraith, 1969; IIRC, 2013; IIRC, 2021).

2.3.3 Integrated Reporting Theory

The underlying theory of this study is Integrated Reporting (IR) Theory, which posits that corporate disclosures should provide a holistic and interconnected representation of how an organisation creates, preserves, and communicates value over time. The theory evolved from the International Integrated Reporting Framework, formally introduced by the International Integrated Reporting Council (IIRC) in 2013 and revised in 2021. Scholars

such as Eccles and Krzus (2010) and De Villiers and Dimes (2022) have developed the conceptual foundation of the theory, demonstrating that meaningful reporting extends beyond conventional financial disclosures to include narrative, contextual, and forward-looking information on multiple capitals, including financial and manufactured capital. IR Theory is particularly relevant to this study because it frames reporting as a strategic tool to reduce information asymmetry, enhance transparency, and support stakeholder decision-making, aligning directly with the study's objective of comparing financial-based and disclosure-level reporting approaches. It provides a framework to evaluate how differences in the structure, quality, and integration of disclosures influence firm value in Nigerian consumer and industrial goods firms, with its emphasis on multi-capital connectivity, integrated thinking, and decision-usefulness serving as a strong analytical lens for understanding integrated reporting practices and their implications for value creation.

III. Methodology

The study adopted an ex post facto research design as secondary data were obtained from sampled firms' annual reports for the study period, and historical market data from the Nigeria Exchange Group (NGX). The population consisted of all thirteen (13) Industrial Firms and twenty-one (21) Consumer Goods firms that were listed on the Nigeria Exchange Group (NGX) and had audited financial accounts as of 31st December 2024. To arrive at the sample size, a purposive sampling method using filter approaches was employed for this study because it was important to ensure an unbiased sample size that would give each member of the population an equal opportunity of being selected. A total of 13(61.9%) of the consumer goods firms and 9(69.2%) of the industrial goods firms were selected as sample size for this study based on the following criteria: These numbers gave a total sample to 22(64.7%) of the 34 consumer and industrial goods firms listed in the Nigeria Exchange Group as of end of 2024, based on the following criteria..

i. Firms are in operation during the study period, 2013-2024
ii. Throughout the study period, firms were not delisted. This is to prevent the issue of data attrition.
iii. Firms were actively participating in the NGX during the period under review.
iv. Firms carried out business activities within the period and provided complete and accessible annual accounts and reports.

Details of the 22(64.7%) selected firms are listed in appendix 12

The study's 12-year timeframe was 2013–2024. Descriptive statistics, panel regression, correlation analysis, and post-regression diagnostic tests on variables were used to analyse the secondary data gathered for the dependent and independent variables using STATA 16.

In order to examine the effect of intellectual and human capital reporting on the firm value of listed industrial and consumer goods firms in Nigeria, the study adapted with modifications the model used by (Adegbie et al., 2019). The model used by Adegbie et al. (2019) is stated as: $TQ = \alpha 6 + \beta 9\ DFC\ it + \beta 10\ DMC\ it + \beta 11\ DIHC\ it + \beta 12\ DNC\ it + \beta 13\ SIZE\ it + \beta 14\ FLEV\ it + \mu 6$

Where:

TQ=Tobin's Q
DFC=Disclosure of Financial Capital
DIHC= Disclosure of Intellectual Capital and Human Capital
DNC= Disclosure of Natural Capital
SIZE= Firm Size
FLEV=Financial Leverage

Models of this study

Model 1

Using Financial-based measures

$P/B\ Ratio = \alpha_3 + \beta_1\ ICRFin_{it} + \beta_2\ HCRFin_{it} + \beta_3 RG_{it} + \mu_3$ ……(i)

Where:

P/B Ratio = Firms' value measured by Price-to-Book (P/B) ratio
ICRFin = Intellectual Capital Reporting (finance-based values)
HCRFin = Human Capital Reporting (finance-based)
RG = Revenue Growth

Model 2

Using Disclosure level-based measures

$P/B\ Ratio = \alpha_3 + \beta_1\ ICRDiscl_{it} + \beta_2\ HCRDiscl_{it} + \beta_3 RG_{it} + \mu_3$ ……...(ii)

Where:
P/B Ratio = Firms' value measured by Price-to-Book (P/B) ratio
ICRDiscl = Intellectual Capital Reporting Index(disclosure-based)
HCRDiscl = Human Capital Reporting Index (disclosure-based)
RG = Revenue Growth
Others:
α_1- α_3 = constant
β_1 – β_3 =- coefficient
μ = Error term which is incorporated in the equation to cater for other factors that may influence firm value.
i = cross-section of consumer and industrial firms and
t = time in terms of years.
The a priori expectation:
$\beta_1, \beta_2, \beta_3 > 0$. This implies that all the explanatory and control variables are expected to have a positive relationship with the dependent variable.

Table 1: Definition of variables using financial-based measurement.

Variable Acronym	Variable Name	Measurement	Source(s)
(P/B) Ratio	Price-To-Book Value Ratio	Price per share divided by book value per share	(Akbar et al., 2021; Fernando, 2024; Shittu et al., 2016; Suyono et al., 2020)
ICRFin	Intellectual Capital Reporting	The Modified Value-Added Intellectual Coefficient (MVAIC) MVAIC is calculated as follows: VA = OUT-IN CEE = VA/CE HCE = VA/HC SCE = SC/VA RCE = RC/VA ICE = HCE + SCE + RCE MVAIC = ICE + CEE **Where:** • VA is a value-added company, • OUT is total revenue, • IN is total cost minus employee cost, • CEE is capital employed efficiency, and • CE is measured using total assets minus intangible assets. • HCE is human capital efficiency, • HC is measured using total employee cost, • SCE is structure capital efficiency, • SC is measured using VA-HC, • RCE is relational capital efficiency, • RC is measured using marketing costs, • ICE is intellectual capital efficiency, and • MVAIC is modified value-added intellectual coefficient. HCE = Value Added (VA) / Human Capital (HC)	Diyanty et al., (2019; Ulum et al., (2014)
HCRFin	Human Capital Reporting	HC = Human Capital (calculated as total salaries and allowances for the company) VA =Total Revenue – (Operating Expenses – Salaries)	Kiran et al., (2015; Rasheed et al., (2018)

Variable Acronym	Variable Name	Measurement	Source(s)
RG	Revenue Growth	(Current Year Revenue (CYR) minus Prior Year Revenue (PYR)) divided by (Prior Year Revenue), i.e., (CYR-PYR) x 100 / PYR	Kasoga, (2020); Lambe et al., (2022)

Source: Researcher's compilation (2025)

Table 3: Scoring Framework

This table details the scores for each indicator used to measure disclosure level in the Intellectual and Human Capital Index. A scoring system/methodology was used to determine the extent indicators of the capitals were reported. The scoring system was based on a review of previous studies that used content analysis to determine the correct number of points to be allocated per indicator. Wang et al. (2013), as cited in Larsson and Ringholm (2014), employed a three-point (0-2) scoring system to assess disclosure quality, whereas both Sun et al. (2022) and Larsson and Ringholm (2014) adopted a four-point (0-3) system to enable a more detailed differentiation in the level of disclosure across reporting items. In this study, a four-point system, similar to Sun et al., (2022); Larsson and Ringholm (2014) was used to ensure broad differentiation on the disclosure levels of the indicators per company. Each indicator gets a score from 0 to 3 depending on the availability of numerical values and details of the disclosures. The annual reports of the firms selected were reviewed to establish the level of intellectual and human capital disclosures based on the indicators listed in Table 2. Where disclosures include numerical values with details, a score of 3 is given; where numerical values are provided but no details are given, a score of 2 is granted. Where the disclosure is just a narrative or no disclosure is provided, such indicators are scored 1 or 0, respectively. The total scores from the indicators are thereafter divided by the number of indicators to get the weighted average score (proportion of the total score from the indicators to the maximum expected score) for the capital in each year. For example, Intellectual Capital Disclosure has 13 indicators, hence the expected maximum scores would be 13 x 3=39. Where in a given year the total score is 28, the proportion or level of score is calculated as 28/39=0.7179487or 72%. This was adapted from Sun et al (2022) (see details in Appendix 9, 10 & 11).

Score	Definition
3	Disclosure includes numerical data/values and is detailed (e.g. breakdown by source/type, trend or purpose)
2	Disclosure includes numerical values but lacks details (e.g. total only)
1	Disclosure is narrative only, without any numerical data/values
0	No disclosure

Source: Researcher's compilation (2025)

Table 4: Definition of variables using disclosure level-based measurement.

Acronym	Variable Name	Measurement	Source(s)
ICRDisc	Intellectual Capital Reporting using disclosure level	The sum of the scores of the indicators is divided by the number of indicators under Intellectual capital. i.e., Sum of the scores of the indicators divided by 13	Sun et al., (2022)
HCRDisc	Human Capital Reporting using disclosure level	The sum of the scores of the indicators is divided by the number of indicators under Human Capital. i.e., Sum of the scores of the indicators divided by 17	Sun et al., (2022)

Source: Researcher's compilation (2025)

IV. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Descriptive statistics are used to present, in summarised form, the primary characteristics of a dataset. They consist of metrics such as mean, median, and standard deviation. These statistics aid in comprehending the general pattern and variability of the data. They offer a starting point for additional statistical analysis. An analysis of all variables (both finance-based and disclosure-based) was obtained using STATA 16 software for the period under review.

Table 3: Descriptive Statistic Result-(using finance-based measures for the explanatory variables)

	Obs	Mean	Std_Dev	Min	Max	p1	p99	Skew	Kurt
pbratio	264	3.839	7.987	-26.42	67.896	-7.515	40.719	4.026	28.289
icrfin	264	9.907	10.846	.597	96.524	.846	77.164	5.053	34.576
hcrfin	264	22.619	26.34	1.194	159.16	1.346	114.244	2.332	8.359
rg	264	.218	.433	-.907	5.076	-.365	1.366	6.201	65.155

STATA 16 output (2025)

Table 4: Descriptive Statistic Result- (using disclosure level-based measures for the explanatory variables)

	Obs	Mean	Std_Dev	Min	Max	p1	p99	Skew	Kurt
pbratio	264	3.839	7.987	-26.42	67.896	-7.515	40.719	4.026	28.289
icrdiscl	264	.231	.132	.051	.795	.051	.795	1.58	7.098
hcrdiscl	264	.248	.196	0	.882	.02	.843	1.089	3.581
rg	264	.218	.433	-.907	5.076	-.365	1.366	6.201	65.155

STATA 16 output (2025)

Tables 3 and 4 present the descriptive statistics for intellectual and human capital, revenue growth, and firm value (as measured by the price-to-book ratio). Table 3 summarises the characteristics of the variables when intellectual and human capitals are proxied by finance-based values, while Table 4 presents the same variables when proxied by disclosure-level scores. In both tables, the P/B ratio exhibits substantial variability, with a mean of 3.839, a high standard deviation (7.987), and extreme values ranging from –26.42 to 67.896. The widespread is reflected in the 1st and 99th percentiles (–7.515 and 40.719), while skewness (4.026) and kurtosis (28.289) confirm strong non-normality. This indicates that while most firms cluster around moderate valuations, a few highly capitalised or distressed firms generate extreme fluctuations. In Table 3 (finance-based proxies), intellectual capital (ICRFin) records an average of 9.907 with a standard deviation of 10.846, and a maximum of 96.524, suggesting sharp disparities across firms. Human capital (HCRFin) follows a similar pattern, with a mean of 22.619, a standard deviation of 26.34, and a maximum of 159.16. Both variables are heavily skewed (ICRFin = 5.053, HCRFin = 2.332) and leptokurtic, indicating the dominance of a few firms with exceptionally high capital allocations. Revenue growth (RG) shows a mean of 0.218, but its extreme skewness (6.201) and kurtosis (65.155) highlight the presence of outliers, with a few firms experiencing very high growth compared to the majority. In Table 4 (disclosure-based proxies), the indices are more compressed but still heterogeneous. Intellectual capital disclosure (ICRDiscl) has a mean of 0.231 (≈23%), ranging from 0.051 to 0.795, while human capital disclosure (HCRDiscl) averages 0.248 (≈25%), with a maximum of 0.882. Both variables display moderate positive skewness (1.58 and 1.089, respectively) and excess kurtosis, indicating that while most firms disclose modest levels, a few report substantially higher levels. Revenue growth retains the same distributional features as in Table 3, further underscoring the existence of performance outliers. Overall, the statistics from both tables confirm that the variables are highly dispersed, positively skewed, and leptokurtic, reflecting heterogeneity across firms and the influence of outliers. This suggests that robust estimation or non-parametric techniques may be more appropriate for subsequent analysis. The consistency of observations (264 firm-year data points) strengthens the reliability of the dataset for further econometric modelling.

4.2: Correlation Matrix

Correlation Analysis of the two measures.

Table 4 presents a correlation matrix displaying the Pearson correlation coefficients between the dependent and independent variables, as well as among the independent variables of the study, using the finance-based

measure. It displays correlation values, derived from the Pearson Correlation output, between the dependent and independent variables, as well as the correlation among the independent variables themselves.

Table 5: Correlation Matrix- (finance-based measures)

	pbratio	icrfin	hcrfin	rg
pbratio	1.0000			
icrfin	-0.0410 0.5069	1.0000		
hcrfin	-0.1338 0.0298	0.6442 0.0000	1.0000	
rg	-0.0264 0.6699	0.4727 0.0000	0.3492 0.0000	1.0000

STATA 16 output (2025)

Table 5 presents the correlations between firm value (P/B ratio), finance-based intellectual capital (ICRFin), finance-based human capital (HCRFin), and revenue growth (RG). The results show that P/B ratio does not have a significant association with ICRFin (r = –0.0410, p = 0.5069) or RG (r = –0.0264, p = 0.6699), but it has a weak negative and significant correlation with HCRFin (r = –0.1338, p = 0.0298). This suggests that higher finance-based human capital does not directly lead to improved market valuation. On the other hand, ICRFin and HCRFin are strongly and positively related (r = 0.6442, p = 0.0000), which means that firms that spend more on intellectual capital also spend more on human capital. RG is positively and significantly correlated with both ICRFin (r = 0.4727, p = 0.0000) and HCRFin (r = 0.3492, p = 0.0000), indicating that these finance-based capitals are important drivers of revenue growth. However, their effect on firm value may only be indirect, requiring regression analysis to establish clearer pathways.

Table 6: Correlation Matrix- (using disclosure-based measures for the explanatory variables)

	pbratio	icrdiscl	hcrdiscl	rg
pbratio	1.0000			
icrdiscl	0.1098 0.0749	1.0000		
hcrdiscl	0.0476 0.4409	0.6914 0.0000	1.0000	
rg	-0.0264 0.6699	-0.0783 0.2046	-0.0107 0.8620	1.0000

STATA 16 output (2025)

Table 6 reports the correlations among firm value (P/B ratio), intellectual capital disclosure (ICRDisc), human capital disclosure (HCRDisc), and revenue growth (RG). The results show that P/B ratio has only weak and insignificant associations with ICRDisc (r = 0.1098, p = 0.0749), HCRDisc (r = 0.0476, p = 0.4409), and RG (r = –0.0264, p = 0.6699). This means that disclosure levels of intellectual or human capital, and revenue growth on their own, do not explain variation in firm value. A notable indication, however, is the strong and highly significant positive correlation between ICRDisc and HCRDisc (r = 0.6914, p = 0.0000), which shows that firms that disclose more on intellectual capital also tend to disclose more on human capital. RG has no significant relationship with either ICRDisc or HCRDisc, suggesting that disclosure practices are internally consistent but not directly tied to growth or firm value.

4.3 Multi-Collinearity Test

4.3.1 Variance Inflation Factor (VIF) for the two measures

The Variance Inflation Factor quantifies the extent to which multicollinearity among the independent variables inflates the variance of a regression coefficient. While values above 5 or 10 indicate a high degree of correlation, which could compromise the accuracy of coefficient estimates, a VIF value of 1 shows no multicollinearity. It assists in locating superfluous variables that might need to be consolidated or eliminated.

Table 7: Variance Inflation Factor (VIF) – (using finance-based measures for the explanatory variables)

Variable	VIF	1/VIF
icrfin	1.94	0.515063
hcrfin	1.72	0.582422
rg	1.29	0.773110
Mean VIF	1.65	

STATA 16 output (2025)

Table 7 shows that all variables have modest Variance Inflation Factor (VIF) values (mean VIF = 1.65), which suggests that multicollinearity is not an issue and permits accurate interpretation of individual coefficients.

Table 8: Variance Inflation Factor (VIF) (using disclosure level-based measures for the explanatory variables)

Variable	VIF	1/VIF
icrdiscl	1.93	0.516928
hcrdiscl	1.92	0.520059
rg	1.01	0.990254
Mean VIF	1.62	

STATA 16 output (2025)

Table 8 shows that all variables have modest Variance Inflation Factor (VIF) values (mean VIF = 1.62), which suggests that multicollinearity is not an issue and permits accurate interpretation of individual coefficients

4.4 Heteroskedasticity Tests for the two measures

As a diagnostic check to confirm the robustness of the estimations, a heteroskedasticity test was performed. When the standard error of the variable under observation varies over time, this is known as heterogeneous variance. The validity of analytical conclusions may be impacted by heteroscedasticity, which goes against the assumptions of linear regression modelling. Heteroscedastic, on the other hand, decreases precision and increases the likelihood of estimating less precise coefficients without introducing bias into the estimates. After removing the correct population values, the estimates are far from accurate.

Hypothesis

H_0 The Error Variances are all Equal (Homoscedastic).

H_1 The Error Variances are not Equal (Heteroskedasticity)

Decision Rule: If the p-value is less than 0.05, the null hypothesis is rejected, and the alternative hypothesis should be accepted.

Table 9: **Heteroskedasticity Test (using finance-based measure of the explanatory variables)**

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of pbratio

         chi2(1)      =    19.66
         Prob > chi2  =   0.0000
```

STATA 16 output (2025)

Table 9 shows a p-value of 0.0000 and a Chi-square statistic of 19.66. Hence, the null hypothesis is rejected since the p-value is below the traditional significance level of 0.05. The presence of heteroskedasticity is demonstrated statistically by this finding, which shows that the error components in the model do not have constant

variance. This result suggests that the ordinary least squares (OLS) regression's standard errors could be skewed, which could result in inaccurate hypothesis testing. Subsequent regression studies used the robust standard errors to address this problem and guarantee reliable inference.

Table 10: **Heteroskedasticity Test (using disclosure level-based measure of the explanatory variables)**

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of pbratio

         chi2(1)      =    18.25
         Prob > chi2  =   0.0000
```

STATA 16 output (2025)

Table 10 shows a p-value of 0.0000 and a Chi-square statistic of 18.25. Similar to the illustrations in Table 9, the null hypothesis is rejected since the p-value is below the traditional significance level of 0.05. This result suggests that the ordinary least squares (OLS) regression's standard errors could be skewed, which could result in inaccurate hypothesis testing. Subsequent regression studies used the robust standard errors to address this problem and guarantee reliable inference.

4.5 Hausman Test the two measures

To choose between fixed and random effects models in panel data analysis, the Hausman test is a model specification test. In this study, both fixed and random effects were performed because the datasets used were panel. To select between the fixed-effects and random-effects regression models, a Hausman specification test was employed. The purpose of this test was to ascertain whether the erroneous term was related to the regressor. As a result, the Hausman specification test decision rule is provided at a significance level of 5%.

H_o: Random effect is more appropriate for the panel regression analysis

H_1: Fixed effect is more appropriate for the panel regression analysis

Decision Rule: If the p-value is less than 0.05, the null hypothesis is rejected, and the alternative hypothesis should be accepted.

Table 11: Hausman Test (using finance-based measure of the explanatory variables)

```
                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |     fixed        random       Difference          S.E.
-------------+------------------------------------------------------------
      icrfin |    .0453327     .0512193       -.0058866        .0290377
      hcrfin |   -.0389642    -.0456169        .0066527        .0222434
          rg |     -.13932    -.0754148       -.0639052        .2810226
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        0.11
                Prob>chi2 =      0.9912
```

STATA 16 output (2025)

Table 12: Hausman Test (using disclosure level-based measure of the explanatory variables)

```
                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |     fixed        random       Difference          S.E.
-------------+------------------------------------------------------------
    icrdiscl |   -1.559536     .6585861       -2.218122        1.513697
    hcrdiscl |    1.041897     .5994643         .442433         1.41804
          rg |   -.4809727    -.4546461       -.0263265        .1434864
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        2.15
                Prob>chi2 =      0.5416
```

STATA 16 output (2025)

4.6 Lagrange Multiplier Test.

The Lagrange multiplier (LM) test is used to choose between pooled and random effects models in panel data analysis. Both pooled and random effects regression analyses were performed because the dataset comprised a panel. Then, a Breusch-Pagan Lagrangian multiplier test was used to identify the best model between the pooled-effects and random-effects regression models. The Breusch-Pagan Lagrange multiplier test decision rule is provided at a significance level of 5%.

H_0: Pooled effect is more appropriate for panel regression analysis

H_1: Random effect is most appropriate for panel regression analysis.

Decision Rule: If the p-value is less than 0.05, the null hypothesis is rejected, and the alternative hypothesis should be accepted.

Table 13: LM Test (using finance-based measure of the explanatory variables)

```
Breusch and Pagan Lagrangian multiplier test for random effects

        pbratio[id,t] = Xb + u[id] + e[id,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                 --------+------------------------------
                 pbratio |    63.78559        7.986588
                       e |    44.21247        6.649246
                       u |    23.33191        4.830312

        Test:   Var(u) = 0
                                 chibar2(01) =   128.28
                              Prob > chibar2 =   0.0000
```

STATA 16 output (2025)

Table 13: LM Test (using disclosure level-based measure of the explanatory variables)

```
Breusch and Pagan Lagrangian multiplier test for random effects

        pbratio[id,t] = Xb + u[id] + e[id,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                 --------+------------------------------
                 pbratio |    63.78559        7.986588
                       e |    44.36456        6.660673
                       u |    21.66242         4.65429

        Test:   Var(u) = 0
                                 chibar2(01) =   121.94
                              Prob > chibar2 =   0.0000
```

STATA 16 output (2025)

Interpretation of LM Results

In Tables 13 and 14, the Breusch-Pagan Lagrange Multiplier tests were conducted to choose between the pooled OLS and random effects models. The LM statistics yielded a p-value of 0.0000 in both cases, indicating that the null hypothesis of pooled effects is strongly rejected. Therefore, the random effects model is more appropriate for the panel regression analysis

4.7: Regression Analysis for the two measures

Hypotheses 1 and 3

Ho_1: Intellectual Capital Reporting Index, measured using a financial-based approach, has no significant effect on the price-to-book(P/B) ratio of consumer and industrial goods firms in Nigeria.

Ho_3: Human Capital Reporting Index, measured using a financial-based approach, has no significant effect on the price-to-book(P/B) ratio of consumer and industrial goods firms in Nigeria

Table 14: Regression Analysis (using finance-based measure of the explanatory variables)

```
Random-effects GLS regression                   Number of obs     =         264
Group variable: id                              Number of groups  =          22

R-sq:                                           Obs per group:
     within  = 0.0046                                         min =          12
     between = 0.0519                                         avg =        12.0
     overall = 0.0213                                         max =          12

                                                Wald chi2(3)      =        6.19
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =      0.1027

                                  (Std. Err. adjusted for 22 clusters in id)
------------------------------------------------------------------------------
             |               Robust
     pbratio |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      icrfin |   .0512193   .0261391     1.96   0.050    -.0000123     .102451
      hcrfin |  -.0456169    .020404    -2.24   0.025    -.0856079    -.0056258
          rg |  -.0754148   .6889346    -0.11   0.913    -1.425702     1.274872
       _cons |   4.379723   1.263598     3.47   0.001     1.903115     6.85633
-------------+----------------------------------------------------------------
     sigma_u |  4.8303117
     sigma_e |  6.6492455
         rho |  .34543084   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

STATA 16 output (2025)

Table 15 presents the random-effects GLS estimates of the relationship between finance-based intellectual capital (ICRFin), human capital (HCRFin), revenue growth (RG), and firm value (P/B Ratio), based on 264 firm-year observations from 22 firms. The overall explanatory power of the model is low (overall $R^2 = 0.0213$), while the Wald chi² statistic (6.19, p = 0.1027) indicates that the regressors are not jointly statistically significant at the 5% level, although they approach significance at the 10% level. The intra-class correlation ($\rho = 0.345$) shows that about 34.5% of the variation in firm value is explained by firm-level differences. The results show that ICRFin is positively and marginally statistically significant ($\beta = 0.051$, p = 0.050), suggesting that higher levels of intellectual capital investment are weakly associated with higher firm values. HCRFin is negative and statistically significant ($\beta = -0.046$, p = 0.025), indicating that greater financial commitments to human capital are associated with lower firm value. By contrast, RG is negative but not statistically significant ($\beta = -0.075$, p = 0.913), implying that revenue growth does not explain variations in firm value in this model.

Hypotheses 2 and 4

Ho_2: Intellectual Capital Reporting Index, measured using a disclosure level-based approach, has no significant effect on the price-to-book(P/B) ratio of consumer and industrial goods firms in Nigeria.

Ho_4: Human Capital Reporting Index, measured using a disclosure level-based approach, has no significant effect on the price-to-book(P/B) ratio of consumer and industrial goods firms in Nigeria.

Table 16: Regression Analysis (using disclosure-based measures of the explanatory variables)

```
Random-effects GLS regression                   Number of obs     =         264
Group variable: id                              Number of groups  =          22

R-sq:                                           Obs per group:
     within  = 0.0006                                         min =          12
     between = 0.0237                                         avg =        12.0
     overall = 0.0053                                         max =          12

                                                Wald chi2(3)      =        1.29
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =      0.7308

                                              (Std. Err. adjusted for 22 clusters in id)
------------------------------------------------------------------------------
             |               Robust
     pbratio |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    icrdiscl |   .6585861   4.349238     0.15   0.880    -7.865765    9.182937
    hcrdiscl |   .5994643   2.022454     0.30   0.767    -3.364473    4.563402
          rg |  -.4546461   .5689458    -0.80   0.424    -1.569759    .6604671
       _cons |   3.637119   1.501654     2.42   0.015     .6939311    6.580306
-------------+----------------------------------------------------------------
     sigma_u |  4.6542905
     sigma_e |  6.6606728
         rho |  .32808436   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

STATA 16 output (2025)

Table 16 presents the random-effects GLS regression results for the effect of disclosure-based intellectual capital (ICRDisc), human capital (HCRDisc), and revenue growth (RG) on firm value (P/B Ratio), using 264 firm-year observations from 22 firms. The explanatory power of the model is very low (overall $R^2 = 0.0053$), and the Wald chi² statistic (1.29, p = 0.7308) shows that the independent variables are not jointly statistically significant. About 32.8% of the variation in firm value is attributable to unobserved firm-level heterogeneity (ρ = 0.328). The coefficients of the explanatory variables are not statistically significant. Specifically, ICRDisc has a positive but not statistically significant effect (β = 0.659, p = 0.880), while HCRDisc is also positive but not statistically significant (β = 0.599, p = 0.767). Similarly, RG shows a negative but not statistically significant effect (β = –0.455, p = 0.424). The constant term is positive and statistically significant (β = 3.637, p = 0.015), suggesting that firm value remains positive on average, even in the absence of explanatory contributions from the included variables.

4.7.1 Comparative Summary of the two models estimated using Random Effects GLS with robust standard errors. The results are presented in parallel to facilitate comparison.

Variable	Finance-based Model (Table 9)	Significance	Disclosure-based Model (Table 10)	Significance
ICR	β = 0.051, SE = 0.026	**Marginally statistically significant** (p = 0.050)	β = 0.659, SE = 4.349	Not statistically significant (p = 0.880)
HCR	β = –0.046, SE = 0.020	**Statistically significant negative effect** (p = 0.025)	β = 0.599, SE = 2.022	Not statistically significant (p = 0.767)
RG	β = –0.075, SE = 0.689	Not statistically significant (p = 0.913)	β = –0.455, SE = 0.569	Not statistically significant (p = 0.424)

Variable	Finance-based Model (Table 9)	Significance	Disclosure-based Model (Table 10)	Significance
Constant	β = 4.380, SE = 1.264	**Statistically significant** (p = 0.001)	β = 3.637, SE = 1.502	**Statistically significant** (p = 0.015)
R^2 (overall)	0.0213	–	0.0053	–
Wald χ^2	6.19, p = 0.103	Not significant (joint)	1.29, p = 0.731	Not significant (joint)
ρ (rho)	0.345	–	0.328	–

Source: Researcher's compilation (2025)

4.7.2 Alignment of results with A Priori Expectation

The empirical results partially align with the a priori expectation that β_1, β_2, and β_3 would be positive. The coefficient of intellectual capital reporting (ICRFin) was positive and significant, confirming that higher investment in intellectual capital enhances firm value. In contrast, human capital reporting (HCRFin) was negative and significant, indicating that extensive workforce-related spending is perceived as cost rather than value creation. For the disclosure-based measures, both intellectual and human capital indices (ICRDiscl and HCRDiscl) were positive but insignificant, implying that narrative disclosures remain weakly value-relevant within Nigeria's consumer and industrial goods sectors.

4.7.3 Discussion of findings

This study examined the relationship between intellectual and human capital reporting and firm value, proxied by the Price-to-Book ratio, among consumer and industrial goods firms in Nigeria. Four hypotheses were tested, covering both financial-based and disclosure level-based approaches.

Hypothesis One (Ho_1): Intellectual Capital Reporting Index (financial-based approach)

The results show that ICRFin was positive and statistically significant at the 5% level (β = 0.051; p = 0.050). This indicates that financial-based measures of intellectual capital are recognised by investors and incorporated into firm valuation, even though the effect size is small. Ho_1 is therefore rejected. This finding is consistent with Ahmad et al. (2021), who reported that finance-based proxies of intellectual capital were more reliable than narrative disclosures in explaining firm value. It also aligns with Nguyen & Doan (2020) and Çam & Özer (2022), who employed finance-based measures such as VAIC and intellectual capital scores and found significant positive effects in Vietnam and Turkey, respectively.

Hypothesis Two (Ho_2): Intellectual Capital Reporting Index (disclosure level-based approach)

In contrast, ICRDiscl was positive but not statistically significant (β = 0.659; p = 0.880). This shows that disclosure level-based intellectual capital information is discounted by the Nigerian capital market and not capitalised into firm value. Ho_2 is therefore upheld. This result is consistent with Iredele et al (2025), who also found that disclosure level intellectual capital indices were not statistically significant in Nigerian manufacturing firms. However, it contrasts with Zennaro et al. (2024), who found that higher integrated reporting quality at the disclosure level was statistically significant in improving market valuation outcomes, suggesting that disclosure quality is an important moderating factor.

Hypothesis Three (Ho_3): Human Capital Reporting Index (financial-based approach)

HCRFin was negative and statistically significant at the 5% level (β = –0.046; p = 0.025). This implies that heavy financial commitments to human capital reduce firm value, as investors appear to treat these outlays as costs rather than value-creating investments. Ho_3 is therefore rejected. This finding is consistent with Opanyi & Omare (2022) and Nurkumalasari et al. (2019), who reported that finance-based human capital indices had no statistically significant or negative effects in emerging markets. However, it contradicts Adewumi et al. (2021), who reported that human capital spending in Nigerian manufacturing firms had a positive and statistically significant effect on shareholder value.

Hypothesis Four (Ho_4): Human Capital Reporting Index (disclosure level-based approach)

HCRDiscl was positive but not statistically significant (β = 0.599; p = 0.767), showing that disclosure level-based human capital reporting does not significantly influence firm valuation. Ho_4 is therefore upheld. This is

consistent with Nurkumalasari et al. (2019), who also reported statistically insignificant effects of disclosure indices, but it contradicts Adewumi et al. (2021) and Bangara et al. (2024). Adewumi found disclosure-level HCR to be significant in Nigeria, while Bangara documented contrasting outcomes for Kenya (negative effect) and South Africa (positive effect).

Taken together, these results show that finance-based measures of intellectual and human capital exert statistically significant effects in Nigeria, though in opposite directions: ICRFin has a positive and significant effect, while HCRFin has a negative and significant effect. In contrast, disclosure level-based measures, both ICRDiscl and HCRDiscl, were not statistically significant, indicating that investors in Nigeria place little weight on disclosure level indices.

4.7.2.1 Discussion Relative to A Priori Expectation and Prior Studies

The mixed outcomes observed between finance-based and disclosure-based measures confirm that investors in Nigeria's consumer and industrial sectors respond more strongly to tangible, finance-linked intellectual capital indicators than to narrative or disclosure-level information. The positive and significant effect of ICRFin supports the a priori expectation and aligns with Çam & Özer (2022), who found that higher levels of capital efficiency are valued positively by the market. Conversely, the negative effect of HCRFin departs from the expectation and reflects a cost-oriented investor perception of human capital expenditures, consistent with findings in Opanyi and Omare (2022). The insignificance of disclosure-level measures (ICRDiscl and HCRDiscl) reinforces prior evidence from Iredele et al. (2025) that disclosure quality in Nigeria is weakly capitalised into firm value. This indicates that market participants attach greater weight to measurable financial outcomes than to qualitative disclosures when assessing corporate worth.

4.7.3 Discussion of Findings Implications

The empirical results partially align with the a priori expectation that β_1, β_2, and β_3 would be positive. Specifically, the coefficient of intellectual capital reporting based on finance-based measurement (ICRFin) was positive and statistically significant, which is consistent with the theoretical expectation that increased investment in intellectual capital enhances firm value. However, the coefficient of human capital reporting (HCRFin) was negative and significant, contrary to the a priori expectation. This suggests that heavy workforce-related spending may be perceived by investors as cost rather than value creation. For the disclosure-based measures, both intellectual and human capital indices (ICRDiscl and HCRDiscl) were positive but not significant, implying that disclosure level information does not yet drive market valuation in Nigeria's consumer and industrial goods sectors.

V. CONCLUSION AND RECOMMENDATIONS

This study examined the effect of intellectual and human capital reporting on firm value, proxied by the Price-to-Book ratio, among listed consumer and industrial goods firms in Nigeria. Four hypotheses were tested to separately assess finance-based and disclosure level-based reporting measures.

The results show that Intellectual Capital Reporting measured through finance-based indices (ICRFin) was positive and statistically significant at the 5% level, although the effect was small. Ho_1 is therefore rejected. Intellectual Capital Reporting measured through disclosure level-based indices (ICRDiscl) was not statistically significant, showing that narrative IC reporting is not consistently reflected in firm valuation. Ho_2 is therefore upheld.

Human Capital Reporting produced mixed results. The financial-based measure (HCRFin) was negative and statistically significant at the 5% level, suggesting that heavy workforce-related financial commitments reduce firm value. Ho_3 is therefore rejected. The disclosure level-based measure (HCRDiscl) was not statistically significant, indicating that narrative reporting of human capital information is discounted by investors. Ho_4 is therefore upheld.

In conclusion, intellectual and human capital reporting do not positively explain firm valuation in Nigeria. Finance-based measures were statistically significant but diverged in direction, while disclosure level-based indices were not statistically significant. This points to a weak responsiveness of the Nigerian capital market to disclosure-level reporting and highlights the need for stronger integration of non-financial reporting into investor decision-making.

Recommendations based on the study findings are as follows:

i. Companies should strengthen the reporting of finance-based intellectual capital indicators such as R&D expenditure, patents, and technology investments, and explicitly link them to measurable outcomes such as innovation and market competitiveness, thereby enhancing value relevance.
ii. Regulators such as the Financial Reporting Council of Nigeria (FRCN) should improve the framework for disclosure level intellectual capital indices by mandating standardised and comparable reporting. Evidence from Zennaro et al. (2024) indicates that higher-quality disclosure level reporting can significantly influence market valuation when consistently applied.

iii. Firms should demonstrate how human capital spending contributes to productivity, retention, and profitability. By making these linkages explicit, companies can reduce the perception of such spending as pure cost and reposition it as value-creating.

iv. Regulators should integrate mandatory disclosure level-based human capital indices into reporting templates, ensuring that narrative human capital reporting is systematically connected to financial outcomes and thus more relevant to valuation.

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