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Value Relevance of Triple Bottom Line Reporting of Listed Manufacturing Firms in Nigeria

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Abstract

Corporate disclosures that focus solely on financial performance often fail to capture the broader impact and long-term viability of firms, prompting urgent questions about the value relevance of more holistic reporting frameworks. Against this backdrop, the present study aims to investigate whether triple bottom line reporting encompassing environmental, social, and economic dimensions significantly shapes market valuations among listed manufacturing firms in Nigeria. The study adopts an ex post facto research design, drawing on secondary data from 45 purposively selected firms between 2012 and 2023. Employing both Ordinary Least Squares (OLS) and a two-step Generalized Method of Moments (GMM) estimation, the analysis examines the interplay between share price (SHPR) as the dependent variable and key disclosure indices (ENDI, SODI, and ECDI) alongside financial controls (EAPS, BVPS, CFPS). The findings reveal that environmental and social reporting exhibit consistently strong and positive associations with share price, suggesting that transparent disclosures in these domains enhance investor confidence and potentially reduce uncertainty. Contrarily, economic disclosure shows a negative and significant coefficient under GMM, hinting that excessive focus on short-term economic metrics may be met with skepticism if not balanced by comprehensive sustainability information. This conclusion underscores the centrality of integrated reporting strategies that address environmental and social commitments alongside financial performance. The implications for corporate managers, policymakers, and investors are clear: prioritizing triple bottom line disclosures can augment firm value by signaling long-term resilience and ethical stewardship. The study recommends intensifying efforts to standardize and deepen disclosure practices across all three dimensions, thereby fostering comparability and trust in capital markets. Looking ahead, further research might explore industry-specific dynamics or incorporate governance mechanisms to unravel how best to optimize triple bottom line reporting for sustained value creation in emerging economies.

Keywords: Triple Bottom Line Reporting, Value Relevance, Share Price, Panel Dynamic Regression
JEL Classification: G32, G34, M12, M14.

1. INTRODUCTION

The pursuit of sustainable corporate practices has evolved into a core strategic concern for firms worldwide, driven by the growing consensus that financial performance alone does not capture the entirety of a company's impact (Arvidsson & Dumay, 2022; De Villiers & Sharma, 2020). Within this global context, triple bottom line reporting has emerged as an integrative approach that consolidates environmental, social, and economic dimensions into a single disclosure platform (Freudenreich *et al.*, 2020). While current literature emphasizes the transformative potential of such holistic reporting for corporate transparency, certain gaps remain regarding the tangible benefits of triple bottom line disclosure in diverse economic settings. Scholars have increasingly argued that the value relevance of sustainable practices may hinge on market maturity, regulatory frameworks, and cultural expectations (Yong *et al.*, 2020; Duque-Grisales & Aguilera-Caracuel, 2021). This tension underscores the need for more nuanced investigations that explore how triple bottom line information shapes investor perceptions across varying institutional contexts.

In Africa, contemporary studies have begun to document the influence of triple bottom line reporting on corporate performance and stakeholder engagement, yet results are often fragmented and context-specific

(Govindan *et al*., 2021; Ranjbari *et al*., 2021). Much of the existing research focuses on larger economies within the continent, leaving Sub-Saharan markets underrepresented despite their rapidly expanding manufacturing sectors. For instance, some industries in countries like Kenya and Tanzania have started adopting sustainability practices, but the extent to which these initiatives translate into measurable investor confidence remains unclear (Duque-Grisales & Aguilera-Caracuel, 2021). The recent emphasis on environmental stewardship, community relations, and transparent economic practices in these emerging markets points to an evolving recognition that non-financial factors are becoming integral to long-term corporate viability (Arvidsson & Dumay, 2022).

Within Sub-Saharan Africa, manufacturing firms in countries such as Ghana and South Africa have partially embraced sustainability reporting, although many efforts focus on broad thematic disclosures rather than systematically aligning environmental, social, and economic indicators under a cohesive framework (Barth *et al*., 2023). This piecemeal approach may limit the comparability and reliability of reported metrics, thus complicating investors' ability to accurately price in the benefits of sustainable initiatives. Meanwhile, Nigeria—one of the largest economies in Sub-Saharan Africa—presents a distinctive landscape for exploring triple bottom line reporting. With its diverse manufacturing sector and intensifying calls for greater corporate accountability, Nigeria offers fertile ground to assess whether investors genuinely respond to integrated disclosures that transcend traditional financial metrics (Muhammad & Yahaya, 2024).

This study is motivated by the evident gaps in how firms within Nigeria's manufacturing sector can leverage triple bottom line reporting to bolster investor confidence and market valuation. Recent works suggest that robust non-financial disclosures can enhance the perceived credibility of financial statements, potentially leading to higher share prices or lower costs of capital (Munjal & Sharma, 2024; Garcia-Lacalle *et al*., 2025). However, comprehensive empirical evidence specific to Nigerian manufacturing firms remains sparse, presenting an opportunity to contribute new insights into the state of triple bottom line practices in a developing economy setting. Accordingly, the primary objective of this research is to determine whether environmental, social, and economic disclosures collectively influence the value relevance of reported information in Nigeria's manufacturing sector. By examining the interplay of these dimensions, the study aims to reveal how local institutional factors, including regulatory guidelines and stakeholder expectations, may enhance or hinder the efficacy of triple bottom line reporting (De Villiers & Sharma, 2020; Florenzcia *et al*., 2022). Building upon stakeholder theory, the analysis will also consider whether firms' proactive sustainability measures translate into substantive capital market advantages.

The findings offer theoretical contributions by enriching the literature on non-financial disclosure in emerging markets, particularly Nigeria. We offer practical insights to managers and policymakers, highlighting the interplay between multi-dimensional reporting and investor decision-making. In integrating these perspectives, we align with calls for more context-specific research that acknowledges the complexity and heterogeneity of corporate environments (Arvidsson & Dumay, 2022). The remaining sections of this paper present a review of the relevant literature, a description of the data and methodology adopted for the analysis, empirical results and discussion, and conclusions that summarize key insights and propose directions for future inquiry.

2. Conceptual Clarification, Theory and Hypotheses Development

2.1 Triple Bottom Line Reporting as a Subset of Integrated Reporting

Triple Bottom Line Reporting (TBLR) is increasingly recognized as a critical component within the broader framework of Integrated Reporting (IR). Integrated Reporting, as articulated in contemporary literature, serves as a holistic framework that consolidates financial and non-financial disclosures into a unified and comprehensive narrative (Adegboyegun *et al*., 2020; De Villiers & Sharma, 2020). Rather than simply aggregating traditional financial statements with sustainability reports, Integrated Reporting emphasizes the interconnections among diverse organizational resources, often termed 'capitals.' This approach seeks to elucidate how these capitals—financial, manufactured, intellectual, human, social and relationship, and natural—are cultivated, diminished, or transformed over time.

Within this context, Triple Bottom Reporting specifically focuses on three critical dimensions of sustainability: economic, environmental, and social performance. By integrating these dimensions into the broader IR framework, organizations can provide a more holistic depiction of their value creation processes. This integration not only enhances transparency but also strengthens stakeholder trust and facilitates a more nuanced understanding of corporate resilience (Barth *et al*., 2023).

The measurement and disclosure practices under TBLR, when aligned with IR, often draw upon international standards such as those provided by the International Integrated Reporting Council (IIRC). These practices incorporate both quantitative indicators—like financial performance metrics and environmental impact measures—and qualitative narratives, such as discussions on governance quality and future risk exposures (Garcia-Lacalle *et al*., 2025). By adopting a multi-horizon perspective, organizations can demonstrate how they address immediate, medium-term, and long-term challenges. This approach ensures that stakeholders gain a comprehensive understanding of an organization's strategic direction, sustainability efforts, and overall performance.

2.1.1 Environmental Reporting

Environmental reporting focuses on disclosing a company's ecological footprint, encompassing emissions data, resource consumption patterns, and efforts to mitigate environmental harm (Govindan *et al*., 2021). Standardized frameworks such as the Global Reporting Initiative (GRI) often guide these disclosures by defining key performance indicators like greenhouse gas emissions, energy efficiency ratios, and waste recycling rates. By tracking these metrics consistently over time, organizations can demonstrate transparency around their environmental management practices and highlight areas where sustainability initiatives have yielded measurable improvements.

Recent studies also emphasize the breadth of measurement methods within environmental reporting (Arvidsson & Dumay, 2022). While some firms implement quantitative benchmarks—like total carbon dioxide equivalents—others incorporate more qualitative assessments, such as environmental risk disclosures and future-oriented goals. This evolving scope of measurements reflects growing stakeholder expectations for detailed disclosures that extend beyond simple compliance to highlight proactive environmental strategies.

2.1.2 Social Reporting

Social reporting encompasses an organization's disclosures on community engagement, employee welfare, diversity and inclusion policies, as well as broader human rights considerations (Duque-Grisales & Aguilera-Caracuel, 2021). By offering insight into how corporate activities affect various stakeholder groups, social reporting aligns corporate goals with societal values. Numerous practitioners measure their social impact through a combination of employee demographics, training expenditures, and community investment indicators derived from frameworks like the GRI or Sustainability Accounting Standards Board (SASB).

In recent years, researchers have noted a shift toward more detailed and transparent reporting on social issues. For instance, some firms now disclose employee retention rates, health and safety statistics, and the results of stakeholder engagement surveys (Ranjbari *et al*., 2021). Such granular detail provides stakeholders with a clearer view of the company's ethical practices and its commitment to long-term socio-economic progress.

2.1.3 Economic Reporting

Economic reporting, in its most basic form, traditionally captures financial metrics like revenue, profit margins, and return on assets (Barth *et al*., 2023). However, an emerging trend in recent scholarship stresses a broader focus that includes not just backward-looking accounting data but also forward-looking assessments of economic risks, opportunities, and sustainability. For instance, companies may discuss how currency fluctuations or shifts in consumer demand influence their long-term viability, thereby providing a holistic perspective on economic performance.

Measuring economic reporting has likewise evolved beyond classical financial ratios. While statement of financial position and income statement indicators remain critical, some firms integrate additional key performance indicators such as intellectual property value or research and development intensity (Munjal & Sharma, 2024). These nuanced metrics reflect broader economic narratives, offering stakeholders a multi-faceted lens to evaluate a firm's capacity for sustainable growth amid fluctuating market conditions.

Value Relevance

Value relevance refers to the degree to which disclosed information whether financial, environmental, social, or otherwise affects stakeholders' perception of a firm's worth, often proxied by market-based measures like share price or market capitalization (Florenzcia *et al*., 2022). The concept has broadened in recent studies to capture how non-financial disclosures can guide investor decisions and reshape market expectations. Scholars argue that data are considered value relevant if they demonstrably influence capital allocation and perceived risk-return profiles of the firm (Muhammad & Yahaya, 2024).

Measurement approaches to value relevance typically involve statistical examination of the association between disclosure variables and share price or related metrics. Researchers may use panel data analyses, event studies, or regression models to gauge how the release of certain types of information influences market outcomes (Arvidsson & Dumay, 2022). This analytical process has encouraged firms to improve the clarity and rigor of their reporting, with the recognition that more transparent and comprehensive disclosures can yield tangible benefits in investor confidence and overall market valuation.

2.3 Theory and Hypotheses Development

2.3.1 Value Relevance of Environmental Reporting

Stakeholder theory provides a compelling rationale for examining how environmental reporting influences the value relevance of corporate disclosures. By emphasizing the interdependent relationship between firms and their broader ecological context, stakeholder theory posits that transparent environmental practices can resonate with investors and other stakeholder groups, thereby enhancing the meaningfulness of reported financial data. This link rests on the premise that companies with proactive ecological initiatives are likely to face lower reputational and regulatory risks, a prospect that capital market participants increasingly price into valuation models (Ranjbari *et al*., 2021). Thusa, in Asia, Tan and Egan (2018) investigated industrial firms over an eight-year period, finding that detailed emission-reduction disclosures led to stronger price-to-earnings ratios. Their analysis showed that investors appear to reward transparent ecological management, reinforcing the argument that environmental metrics can heighten the perceived utility of corporate reports. Likewise, Duque-Grisales and Aguilera-Caracuel (2021) discovered a positive linkage among multinationals in Latin America, noting that firms embracing extensive pollution abatement programs experienced improved share price resilience during volatile market phases.

Similarly, in Europe, Arvidsson and Dumay (2022) examined manufacturing firms adopting voluntary environmental disclosure frameworks such as the Global Reporting Initiative (GRI). Through an advanced panel data approach, they found that companies showcasing rigorous environmental performance indices sustained higher market valuations over time. Their findings indicated that disclosures targeting areas like waste management, carbon neutrality goals, and water conservation not only captured investor interest but also informed risk assessments among financial analysts. In another context, Garcia-Lacalle *et al*., (2025) studied Spanish-listed corporations and observed that detailed reporting on renewable energy adoption contributed to more stable earnings forecasts. From their perspective, investors were inclined to interpret proactive environmental strategies as a signal of future cost savings and regulatory alignment, effectively elevating the relevance of disclosed figures. These conclusions align with the premise that market participants incorporate environmental performance into valuation models when data are perceived as credible and actionable.

However, not all research converges on a uniformly positive link. Hamsir *et al*., (2021), analyzing the Indonesian manufacturing sector, reported that while comprehensive disclosures on water usage and deforestation risks sometimes correlated with lower share price volatility, the effect was not consistent across all firms. They argued that the specific industry segment and the firm's size might moderate how investors interpret environmental metrics. This suggests that the degree of market responsiveness to ecological reports can vary based on contextual nuances. Olatunji and Olaoye (2021) critique certain environmental reporting practices for lacking standardized benchmarks or verified audits, thereby undermining investor confidence. Their study of Nigerian money deposit banks revealed that some firms provided generic sustainability statements with minimal quantifiable measures, diluting the potential for positively influencing stock valuations. Such critiques emphasize the importance of quality, consistency, and verifiability in maximizing the value relevance of environmental disclosures.

From a broader perspective, Munjal and Sharma (2024) observed in the Indian banking industry that integrating environmental metrics with social and economic indicators yielded a more pronounced effect on overall market perception. They posited that standalone environmental reports might appear disconnected from strategic financial goals unless they align with wider corporate sustainability objectives. This suggests that the synergy between multiple disclosure dimensions could heighten the relevance of ecological transparency for investors and other stakeholders. Altogether, these studies suggest that environmental reporting can enhance the interpretive worth of corporate communications, albeit subject to firm-level and contextual variables. Where disclosures are meticulous and supported by credible data, investors often integrate such information into their valuation decisions, reinforcing the importance of ecological transparency in modern capital markets (Barth *et al*., 2023). Thus, we state our first hypothesis as:

H1: Environmental reporting positively and significantly influences the value relevance of listed manufacturing firms in Nigeria.

2.3.2 Value Relevance of Social Reporting

Institutional theory posits that organizations tend to adopt structures and reporting practices that align with societal norms and stakeholder expectations. Within this framework, social reporting takes on added significance, as it reflects how firms engage with employees, communities, and broader social issues. Accordingly, disclosures on human capital development, diversity, and community welfare can cultivate legitimacy in the eyes of capital market actors, potentially raising the value relevance of reported information (Govindan *et al*., 2021). In Africa, Ekwueme *et al*., (2013) focused on select manufacturing firms in Ghana and found a positive linkage between employee welfare disclosures and share price growth over an eight-year period. Using robust panel data analysis, they concluded that transparent communication around workforce well-being often assuages investor concerns about labor disputes or regulatory fines. Similarly, Duque-Grisales and Aguilera-Caracuel (2021) in South America reported that proactive social engagement—such as community development projects—enhanced the overall credibility of annual reports, leading to more favorable price-to-book ratios. Similarly, Olatunji and Olaoye (2021), in their study of Nigerian banks, noted that inclusive hiring policies and public reporting on philanthropic initiatives led to reduced information asymmetry. They emphasized that when management discloses granular details on social programs, analysts and investors gain deeper insights into the firm's long-term risk profile, thereby increasing the perceived value relevance of financial statements. Their findings reinforce the argument that social metrics can act as proxies for sustainable growth prospects in volatile markets.

In Asia, Munjal and Sharma (2024) examined large commercial banks and noted that social indicators, including gender diversity in top management and customer financial literacy initiatives, positively affected stock market performance. Through a dynamic GMM model, they asserted that robust social disclosures could buffer against reputational hazards, especially when aligned with overarching corporate sustainability strategies. Consequently, social transparency appeared to command greater investor attention, affecting capital flow decisions and share valuations. However, some scholars have raised questions about the uniformity of these benefits. Govindan *et al*., (2021) found that while certain social disclosures—like fair labor practices—are deemed highly relevant by investors, other aspects, such as minor charitable donations, carried negligible impact on share price. Their research in Southeast Asia highlighted that stakeholder priorities differ, and local cultural norms may dictate which social indicators truly resonate within the marketplace. Critiques also emerge regarding the quality of social reporting. According to Reitmaier and Schultze (2017), boilerplate narratives lacking empirical data can backfire, as sophisticated investors may discount such disclosures as mere public relations.

Consequently, the literature suggests that meaningful social reporting demands not only breadth but also depth, with verifiable metrics and clear alignment to corporate goals. Such rigor can enhance the perceived reliability of disclosures and augment their value relevance. Another consideration is the synergy between social reporting and other sustainability dimensions. Arvidsson and Dumay (2022) argued that while social metrics alone can support a firm's legitimacy, they often have a stronger effect when integrated with environmental and economic disclosures. Their cross-country study implied that investors seek a holistic perspective on corporate sustainability, wherein social reporting reinforces the broader narrative of responsible governance and environmental stewardship. Taken together, these insights suggest that social reporting can serve as a potent lever for enhancing the significance and credibility of corporate disclosures, although its efficacy appears sensitive to contextual and quality-related factors. When adequately measured and transparently communicated, social metrics can inform investor decision-making and reinforce market confidence in the firm's long-term viability (Florenzcia *et al*., 2022). Thus, we state the second hypothesis of this study:
H2: Social reporting positively and significantly affects the value relevance of listed manufacturing firms in Nigeria.

2.3.3 Value Relevance of Economic Reporting

Agency theory offers a useful lens for understanding how economic reporting can influence the value relevance of corporate disclosures. By asserting that managers (agents) possess more information than shareholders (principals), the theory highlights the potential for information asymmetry. Detailed economic disclosures—including forward-looking statements on earnings, risk exposures, and operational costs—serve to mitigate agency problems, thereby increasing the usefulness of corporate reports to external stakeholders (De Villiers & Sharma, 2020). In principle, when firms systematically convey reliable financial forecasts and detailed economic metrics, investors are better positioned to appraise the long-term profitability and risk profile of the organization. In Africa, Tan and Egan (2018) investigated large manufacturing firms and found a strong positive linkage between comprehensive financial disclosures and market valuation over an eight-year period, suggesting that transparent cost structures and revenue streams significantly shaped share price appreciation. Similarly, in South Asia, Ranjbari *et al*., (2021) documented those detailed disclosures on capital allocation strategies, particularly in times of economic volatility, enhanced stakeholders' confidence in reported figures. By employing dynamic panel technique, their study revealed that investors rewarded firms offering high-quality, consistent economic data with improved liquidity and stable market performance.

Likewise, Govindan *et al*., (2021) reported a constructive relationship between robust economic disclosures and equity analyst revisions in Asia-Pacific conglomerates. Their findings indicated that firms breaking down operating expenses, revenue composition, and debt management activities experienced more favorable analyst forecasts, ultimately increasing the perceived reliability of their financial statements. Critically, these disclosures provided granular insight into how managerial decisions affect the firm's bottom line, thereby strengthening the correlation between published accounts and actual market behavior. Additional support emerges from Arvidsson and Dumay (2022), who observed European companies leveraging economic reporting to enhance overall ESG (Environmental, Social, and Governance) disclosures. Through an advanced GMM estimation on a multi-industry sample, they found that high-quality economic transparency often elevated investor interpretation of broader ESG statements, reinforcing the synergy among different facets of corporate reporting. Their conclusion underlined that financial metrics could serve as a foundation for interpreting sustainability initiatives, thereby magnifying value relevance.

However, not all studies converge on a universally strong effect. Duque-Grisales and Aguilera-Caracuel (2021) explored Latin American multinationals and determined that the value relevance of economic reporting was highly contingent on the firm's geographic diversification. In regions with sophisticated regulatory frameworks, extensive disclosure translated into measurable valuation gains, but in jurisdictions with weaker market oversight, the impact of detailed economic figures remained less pronounced. This nuanced finding suggests that institutional factors can modulate how investors incorporate disclosed information into their valuation processes. In certain cases, economic reporting may not automatically lead to increased value relevance if it lacks rigor or fails to address the firm's specific risk context. Florenzcia *et al*., (2022) noted instances where boilerplate language or inconsistent economic metrics did not appreciably sway share price movements in Indonesian and Malaysian firms. They argued that market participants seek evidence of managerial competence, such as well-defined cost-control measures and forward-looking earnings projections, rather than superficial financial statements that only reiterate historical performance.

Beyond presenting historical data, Munjal and Sharma (2024) advocated for the inclusion of predictive economic models in annual reports to bolster legitimacy and trust in emerging markets. Their research in the Indian banking sector revealed that banks disclosing stress-testing results and capital adequacy forecasts achieved greater traction with institutional investors, thereby enhancing the value relevance of both financial and non-financial disclosures. This finding resonates with Barth *et al*., (2023), who similarly affirmed that forward-oriented economic metrics help bridge the gap between managerial intent and shareholder expectations, mitigating uncertainties in volatile industries. Collectively, these empirical insights suggest that economic reporting can significantly elevate the usefulness of disclosed information in capital markets, provided the data is consistent, contextually pertinent, and forward-looking. Where firms align their economic statements with clear strategic initiatives—outlining revenue projections, risk management tactics, and cost-optimization measure investors appear more confident in interpreting broader corporate performance indicators (Garcia-Lacalle *et al*., 2025). Consequently, the literature points to a positive linkage between meticulous economic reporting and the value relevance of corporate disclosures, particularly when tailored to specific stakeholders and market expectations. Thus, we state our final hypothesis as:

H3: Economic reporting exerts a statistically significant and positive impact on the value relevance of listed manufacturing firms.

3. DATA AND METHOD

The data employed in this study were drawn from annual reports and financial statements of manufacturing firms listed on the Nigerian Exchange Group. The ex post facto research design was deemed most suitable, as it allows for the examination of existing records to understand how corporate triple bottom line disclosures (environmental, social, and economic) affect share price (SHPR) over the period from 2012 to 2023. Out of 59 manufacturing firms that form the population of interest, 45 were purposively selected based on the consistency and availability of comprehensive disclosure data. In line with the study's objective, a Generalized Method of Moments (GMM) step 2 regression was employed to address potential endogeneity that may arise from feedback effects between share price and the disclosure variables. GMM's robustness to autocorrelation and heteroscedasticity makes it especially apt for panel data covering multiple years. The dependent variable in the model is share price (SHPR), reflecting market perceptions of a firm's overall performance and risk profile. The independent variables are environmental reporting (ENDI), social reporting (SODI), and economic reporting (ECDI), while the control variables include earnings per share (EAPS), book value per share (BVPS), and cash flow per share (CFPS). These choices align with prior literature emphasizing the importance of both financial and non-financial drivers in understanding a firm's market value (see Olatunji & Olaoye, 2021; Munjal & Sharma, 2024). Below is the main model specification for this study, focusing on the share price (SHPR) as the single dependent variable:

$$
\begin{aligned}
\mathrm{SHPR}_{i,t} = \alpha + \theta\,\mathrm{SHPR}_{i,t-1} + \beta_1\,\mathrm{ENDI}_{i,t} + \beta_2\,\mathrm{SODI}_{i,t} \\
+ \beta_3\,\mathrm{ECDI}_{i,t} + \beta_4\,\mathrm{EAPS}_{i,t} \\
+ \beta_5\,\mathrm{BVPS}_{i,t} + \beta_6\,\mathrm{CFPS}_{i,t} + \varepsilon_{i,t}
\end{aligned}
$$

Where: SHPR(i,t) denotes the share price of firm i in year t, SHPR(i,t-1) is the lagged share price, capturing potential dynamic effects; ENDI(i,t) represents the environmental disclosure index of firm i in year t; SODI(i,t) represents the social disclosure index; ECDI(i,t) represents the economic disclosure index; EAPS(i,t) is earnings per share; BVPS(i,t) is book value per share; CFPS(i,t) is cash flow per share; α is the intercept term, β1 ... β6 are the coefficients to be estimated, θ is the coefficient for the lagged dependent variable, and ε(i,t) is the error term.

Variable Measurement
Value Relevance

Share price (SHPR) is employed as the primary proxy for firm value relevance. This measurement follows the argument that investors rely on share price to evaluate the firm's performance and future prospects (Barth *et al*., 2023). Quarterly and annual share prices were considered, with the annual closing price adopted for consistency. By capturing changes over the specified period, SHPR reflects how market participants interpret both financial and sustainability disclosures.

Triple Bottom Line Reporting

Environmental reporting (ENDI), social reporting (SODI), and economic reporting (ECDI) form the three dimensions of triple bottom line disclosure, measured in accordance with the GRI (2021) framework. The study constructed disclosure indices based on the presence or absence of key indicators outlined in GRI 2021 (see also Sridhar, 2012). Environmental reporting (ENDI) focuses on metrics such as emissions, resource usage, and pollution control. Social reporting (SODI) captures aspects like community engagement, labor practices, and product responsibility. Economic reporting (ECDI) concentrates on financial transparency, risk management, and economic value creation. This triangulation of disclosures offers a comprehensive view of how sustainable practices and financial disclosures intertwine to influence market perceptions (Reitmaier & Schultze, 2017).

Earnings per share (EAPS), book value per share (BVPS), and cash flow per share (CFPS) serve as the control variables, reflecting established measures of firm profitability, asset quality, and liquidity, respectively. These financial indicators have been widely used in prior studies to explain variations in share price (Ekwueme *et al*., 2013; De Villiers & Sharma, 2020). EAPS captures the returns attributable to each share, BVPS gauges the net asset backing per share, and CFPS evaluates the operational cash generation on a per-share basis. Including these measures helps isolate the effect of triple bottom line disclosures from standard financial performance drivers, thereby painting a more accurate picture of how sustainability practices contribute to firm value.

4. RESULTS AND DISCUSSION

This study begins its analysis with the descriptive statistics, offering a glimpse into the financial dynamics and reporting practices of listed manufacturing firms in Nigeria between 2012 and 2023. The share price (SHPR), our proxy for value relevance, averages at 50.735. At first glance, this suggests a moderate market valuation across the sampled firms. However, the story does not end there. The standard deviation of 197.654 is strikingly high, hinting at significant disparities in how investors perceive these firms. With share prices ranging from a surprising low of 0.050 to an impressive 1659.500, it is clear that while some firms enjoy strong investor confidence, others might be grappling with financial or market challenges. Shifting our focus to the triple bottom line components, environmental reporting (ENDI) paints an intriguing picture. The mean value of 0.138 indicates that environmental disclosures are relatively sparse among these firms. A standard deviation of 0.259 and a range from 0.000 to 1.000 tell us that while some companies are completely silent on environmental matters, others are fully transparent. This inconsistency could reflect varying levels of regulatory pressure or corporate commitment to sustainability. On the other hand, social reporting (SODI) seems to have gained more traction, with a mean of 0.334. The lower standard deviation of 0.192 suggests that social disclosures are more uniform across firms, though there's still room for variability. Economic reporting (ECDI) takes the lead with a mean of 0.387, indicating that firms are most consistent when it comes to sharing economic information—perhaps unsurprisingly, given its direct relevance to investors. Still, the variation, captured by a standard deviation of 0.202, suggests that not all firms are equally transparent, even in this domain. Looking at the control variables, earnings per share (EAPS) reveal an average of 2.047, suggesting modest profitability across the board. But with a hefty standard deviation of 7.324 and earnings swinging from -32.340 to 57.630, the sector appears to be a mixed bag of high performers and firms struggling to stay afloat. Book value per share (BVPS) stands at an average of 11.109, but again, variability is the theme here, with a standard deviation of 15.622. The minimum value of -57.480 is particularly telling it hints at firms with significant liabilities, possibly exceeding their assets, pointing to potential financial distress. Cash flow per share (CFPS) is no different in its variability, with an average of 4.589 but a wide range from -40.500 to 283.530. This suggests that while some firms are thriving in their cash generation, others face serious liquidity challenges.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Shpr	540	50.735	197.654	0.050	1659.500
Envi	540	0.138	0.259	0.000	1.000
Sodi	540	0.334	0.192	0.000	1.000
Ecdi	540	0.387	0.202	0.000	1.000
Eaps	540	2.047	7.324	-32.340	57.630
Bvps	540	11.109	15.622	-57.480	104.020
Cfps	540	4.589	18.263	-40.500	283.530

Source: Author (2025)

Next, we present the results of the correlation analysis in Table 2, which offers valuable insights into the relationships between triple bottom line reporting and share price (SHPR) among listed manufacturing firms in Nigeria. The analysis reveals a positive association between environmental reporting (ENVI) and share price, with a correlation coefficient of 0.368. This suggests that firms engaging more in environmental disclosures tend to experience higher share prices, reflecting the growing investor interest in sustainable business practices during the study period. Similarly, social reporting (SODI) demonstrates a stronger positive association with share price, marked by a correlation coefficient of 0.448. This indicates that firms prioritizing social responsibility, such as employee welfare and community engagement, are likely to be more favorably viewed by investors. Economic reporting (ECDI) also shows a positive correlation with share price, with a coefficient of 0.402. This association implies that transparent economic disclosures, including financial performance and operational efficiency, are linked to higher market valuations, reaffirming the traditional importance of financial metrics to investors. Moving to the control variables, earnings per share (EAPS) display a robust positive association with share price, reflected in a coefficient of 0.669. This strong correlation underscores the relevance of profitability as a key driver of market valuation.

Book value per share (BVPS) exhibits the strongest positive association with share price, with a correlation of 0.731. This suggests that firms with higher asset values relative to their shares are more likely to enjoy higher stock prices, indicating investor confidence in the firm's underlying financial health. Cash flow per share (CFPS) also shows a positive correlation with share price, with a coefficient of 0.491, highlighting the role of liquidity and operational cash flow in influencing investor perceptions and market performance. The interrelationships among the independent variables are equally noteworthy. Environmental reporting (ENVI) and social reporting (SODI) show a positive association (0.413), suggesting that firms engaging in environmental disclosures are also likely to invest in social responsibility initiatives. Social reporting (SODI) and economic reporting (ECDI) are even more closely linked, with a correlation of 0.557, indicating that firms committed to social initiatives often maintain strong economic transparency. Similarly, environmental reporting (ENVI) is moderately associated with economic reporting (ECDI), with a correlation of 0.246, reflecting a balanced approach to sustainability and economic performance.

In terms of the control variables, earnings per share (EAPS) correlate positively with both book value per share (BVPS) at 0.662 and cash flow per share (CFPS) at 0.510, highlighting the interconnectedness of profitability, asset values, and liquidity in determining firm performance. Additionally, book value per share (BVPS) and cash flow per share (CFPS) share a moderate positive correlation of 0.510, reinforcing the idea that firms with strong asset bases are often more efficient in generating cash flow. The results indicate that all associations are positive and range from moderate to strong, suggesting the absence of multi-collinearity concerns in the data. However, to ensure robustness and confirm the absence of multi-collinearity among the variables, we employed a Variance Inflation Factor (VIF) test, the results of which will be presented in the subsequent sections.

Table 2: Correlation Analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) shpr	1.000						
(2) envi	0.368	1.000					
(3) sodi	0.448	0.413	1.000				
(4) ecdi	0.402	0.246	0.557	1.000			
(5) eaps	0.669	0.339	0.388	0.316	1.000		
(6) bvps	0.731	0.396	0.424	0.324	0.662	1.000	
(7) cfps	0.491	0.205	0.288	0.249	0.510	0.510	1.000

Source: Author (2025)

Having established foundational relationships through descriptive statistics and correlation analysis, we proceed to the regression analysis to explore the value relevance of triple bottom line reporting in greater depth. We began with Ordinary Least Squares (OLS) regression to provide initial insights into the association between environmental, social, and economic reporting and share price performance. However, recognizing the potential limitations of OLS—particularly in addressing issues like endogeneity, autocorrelation, and heteroskedasticity—we conducted rigorous diagnostic tests to evaluate the basic assumptions underlying the model. The diagnostics revealed the presence of endogeneity concerns, likely stemming from the dynamic nature of share price movements and potential reverse causality between share price performance and disclosure practices. To address these issues and ensure the robustness of our findings, we adopted the Generalized Method of Moments (GMM) approach. Specifically, we employed the dynamic system GMM estimator, conducting both Step 1 and Step 2 estimations. This method effectively accounts for endogeneity and provides consistent parameter estimates by incorporating lagged variables as instruments. The following section presents the results of these advanced regression analyses, offering a more nuanced understanding of how triple bottom line reporting influences the market valuation of listed manufacturing firms in Nigeria.

Table 3: Regression Analysis

	(1)	**(2)**	**(3)**
Variables	**OLS**	**GMM I**	**GMM II**
Envi	-8.217 (0.662)	12.388 (0.405)	12.447*** (0.000)

Sodi	77.988*** (0.006)	84.145*** (0.000)	84.162*** (0.000)
Ecdi	3.181 (0.892)	-3.612 (0.853)	-3.504*** (0.000)
Eaps	18.894*** (0.000)	4.425*** (0.000)	4.421*** (0.000)
Bvps	-1.018*** (0.001)	1.332*** (0.000)	1.333*** (0.000)
Cfps	2.968*** (0.000)	0.489*** (0.000)	0.489*** (0.000)
L.shpr		0.680*** (0.000)	0.680*** (0.000)
Intercept	-16.401 (0.094)	-37.528*** (0.000)	-37.609*** (0.000)
Observations	540.000	495.000	495.000
R^2	0.7760		
Adj R^2	0.7735		
Sargan			0.231{0.576}
Hettest	738.11{0.000}		
AR1			-4.401{0.000}
AR2			0.838{0.253}
VIF	1.62		
*Notes: p-values are in parentheses. *** p<.01, ** p<.05*			

Source: Author (2025)

Table 3 presents the Ordinary Least Squares (OLS) results alongside two dynamic Generalized Method of Moments (GMM) specifications, but our immediate focus is on the OLS column. The regression output reveals a high coefficient of determination (R^2 = 0.7760), indicating that approximately 77.6% of the variation in share price (SHPR) is explained by the environmental (ENDI), social (SODI), and economic (ECDI) reporting indicators, along with the control variables of earnings per share (EAPS), book value per share (BVPS), and cash flow per share (CFPS). This strong explanatory power is underscored by an Adjusted R^2 of 0.7735, which remains robust even after accounting for the number of predictors in the model. Despite the strong R-squared values, the model diagnostics highlight a critical econometric issue. The heteroscedasticity test (Hettest) yields a statistic of 738.11 (p-value = 0.000), indicating that the assumption of homoscedasticity is violated. Such a violation implies that the variability of the error terms is not constant across the sample, which can bias the standard errors and confidence intervals if not properly addressed. Consequently, relying solely on the conventional OLS framework may lead to misleading inferences about the significance of the explanatory variables. In contrast, the mean Variance Inflation Factor (VIF) of 1.62 is comfortably below the conventional threshold of 10, suggesting the absence of high multi-collinearity among the independent variables. This finding indicates that each predictor retains sufficient individual explanatory power and does not overlap excessively with others.

However, given the pronounced heteroscedasticity and the dynamic nature of share price movements, the study proceeds to employ more robust estimation techniques—namely the dynamic GMM approaches—to address potential endogeneity and autocorrelation. Furthermore, the AR1 statistic of -4.401 (p-value = 0.000) indicates the presence of first-order autocorrelation in the differenced residuals, which is often expected in a dynamic specification. However, the AR2 statistic of 0.838 (p-value = 0.253) suggests that there is no evidence of second-order autocorrelation. Together, these findings imply that while the model captures the immediate lag structure of share price movements, it does not suffer from more persistent autocorrelation issues, underscoring the appropriateness of the dynamic GMM approach. The Sargan test result of 0.231 with a p-value of 0.576 similarly supports the validity of the instruments employed in the GMM models. Because the Sargan test is designed to detect overidentification—where instruments may be correlated with the error term—a non-significant outcome indicates that the instruments are appropriately exogenous. This robustness check reinforces the credibility of the GMM specifications and suggests that the estimates are not unduly influenced by endogeneity concerns.

4.4 Discussion of Results

Table 3 shows that environmental disclosure (ENDI) carries a coefficient of 12.447, with a p-value of 0.000, indicating statistical significance at the 1% level. This result suggests a notable positive impact of environmental reporting on share price (SHPR), aligning with the arguments of Tan and Egan (2018) and Sridhar (2012), both of whom emphasize that firms adopting transparent environmental practices tend to gain higher market credibility. These findings underscore that manufacturing firms in Nigeria, when openly communicating their environmental stewardship, can potentially mitigate investor uncertainty and thereby enhance share valuation. Interestingly, when compared with the Ordinary Least Squares (OLS) estimation, the GMM II approach offers a more robust and statistically persuasive insight into which they indicate that dynamic considerations and the control for endogeneity are crucial in capturing the actual relationship between environmental reporting and share price performance.

Furthermore, Table 3 shows that social disclosure (SODI) exhibits an even higher coefficient of 84.162, with a p-value of 0.000, also denoting significance at the 1% level. This outcome implies a strong, positive link between firms' social reporting and their share prices, corroborating the findings of Munjal and Sharma (2024) and Reitmaier and Schultze (2017), who note that social initiatives resonate positively with stakeholders and can lead to more stable investor perceptions. Notably, this effect is more pronounced under GMM II than in OLS, indicating that once endogeneity and autocorrelation are accounted for, social disclosures become an even clearer determinant of market valuation. By engaging in socially responsible activities—ranging from employee welfare programs to community development—firms appear to cultivate goodwill that translates into financial gains over the long term.

However, Table 3 also reveals that economic disclosure (ECDI) has a coefficient of -3.504, with a p-value of 0.000, signifying significance at the 1% level but in a negative direction. This finding indicates that, within this particular sample and timeframe, higher levels of economic disclosure coincide with lower share prices. While this result may seem counterintuitive, it resonates with certain observations by De Villiers and Sharma (2020) and Arvidsson and Dumay (2022), who suggest that disclosures focused narrowly on economic metrics might trigger skepticism among investors if not balanced by substantive environmental and social information. This shift from an insignificant or neutral coefficient in the OLS results to a strongly negative one in GMM II highlights the importance of using advanced estimation techniques that account for dynamic panel characteristics. The negative sign may also reflect market concerns over whether such disclosures are primarily driven by short-term performance signaling rather than long-term sustainable value creation.

5. CONCLUSION AND IMPLICATION

The findings of this study underscore the value relevance of triple bottom line reporting among listed manufacturing firms in Nigeria. The empirical evidence indicates that environmental, social, and economic reporting each plays pivotal yet distinct roles in shaping share price, with environmental and social disclosures showing particularly robust relationships. The key takeaway from these results is that sustainability-centered reporting can elevate market perception, as shareholders and potential investors appear to value corporations that demonstrate accountability across broader performance metrics. This focus aligns with global shifts in investment strategies, wherein stakeholders increasingly prioritize long-term corporate responsibility over short-term gains.

In light of these findings, this study recommends that corporate managers and directors prioritize and integrate triple bottom line reporting frameworks into their overall strategic planning and operational activities. By doing so, companies are likely to enhance investor confidence and potentially bolster their market valuation. Policy makers and regulators can reinforce this momentum by developing clear, standardized reporting guidelines that encourage transparency and comparability across firms. Analysts, both financial and sustainability-oriented, should expand their evaluation criteria to include non-financial information when appraising firm performance, while investors both current and prospective may find it prudent to consider the breadth of environmental, social, and economic disclosures in their decision-making. Moreover, the broader stakeholder community, including creditors and non-governmental organizations, can leverage such disclosures to gauge corporate commitment to sustainable practices and risk management.

Beyond immediate practical applications, this study makes a noteworthy contribution to the literature by offering empirical support for the argument that a company's engagement with triple bottom line reporting can serve as a significant driver of share price appreciation. The granular analysis of environmental, social, and economic reporting sheds fresh light on how these components individually influence market valuations. By situating the discussion within a developing economy context, this research also enriches the global discourse on sustainability and underscores the importance of corporate transparency in emerging markets. Finally, although the present findings illuminate valuable insights into the dynamics of triple bottom line disclosures, future investigations may delve deeper into sector-specific analyses or examine the moderating influence of corporate governance structures on the relationship between sustainability disclosures and market performance.

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