



Sustainable Development in Nigeria's Manufacturing Sector: Exploring the Relationship between Organizational Sustainability and Firm Performance through the Lens of SDGs

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Authors' contributions

This work is carried out in collaboration among all authors. Author AOO designed the study, performed the statistical analysis and wrote the first draft of the manuscript. Authors AMA and OAO managed the analysis and the literature searches. All the authors read and approved the final manuscript.

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ABSTRACT

The purpose of this study is to investigate the impact of sustainability practices on the financial performance of listed manufacturing firms in Nigeria over the period 2011 to 2023. Employing a longitudinal research design, the study compiles secondary data from annual financial reports of

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these firms. The data analysis, performed using panel least-squares estimators and fixed-effect regression analysis, reveals that sustainability practices exert a positive and statistically significant influence on Return on Equity (ROE), serving as a key proxy for financial performance from a management perspective. The study is also hinged on legitimacy theory in which the company's legitimacy depends on an implicit social contract with the society. The results emphasize that adopting sustainability practices contributes significantly to improving organizational performance, supporting the theoretical framework of legitimacy, which posits that firms fulfilling societal expectations gain advantages in financial performance and stakeholder relations. The study recommends that policymakers encourage manufacturing firms to integrate sustainability measures into their practices by offering incentives, such as tax reductions and subsidies, to those actively engaging in environmentally and socially responsible activities. These initiatives would not only enhance financial performance but also promote long-term corporate sustainability, supporting broader economic and environmental goals aligned with the Sustainable Development Goals (SDGs). This research contributes to existing literature by focusing on the Nigerian manufacturing sector, providing insights into the role of sustainable practices in emerging markets, which face unique regulatory and economic challenges in aligning with global sustainability standards.

Keywords: *Sustainability practices, financial performance, manufacturing firms, return on equity, Nigeria.*

1. INTRODUCTION

The sustainability of business operations, particularly within manufacturing firms, is becoming increasingly essential in light of environmental and social challenges. Organizations are prioritizing the integration of sustainable practices into their core operations and are committed to transparently reporting these initiatives, frequently in alignment with the Global Reporting Initiative (GRI) and the Sustainable Development Goals (SDGs) [1-5]. This alignment enables stakeholders to assess the management of sustainability risks and opportunities by firms, thereby improving firm value and profitability [6-8]. There exists a gap in understanding the sustainability of these practices within Nigeria's manufacturing sector, which encounters the dual challenge of complying with international standards and local regulations.

Manufacturing firms must concentrate on core competencies while outsourcing non-core tasks to improve product and service quality [9,10]. With the evolution of technological innovation and complex business processes, firms are required to assess workforce capabilities and formulate strategies aimed at enhancing performance, which in turn reduces costs and increases responsiveness to environmental changes [10-12].

Organizational performance is critical for corporate sustainability, integrating environmental, social, and economic dimensions

to provide ongoing stakeholder value. Profitability is frequently regarded as a key performance indicator; however, it does not encompass the entirety of performance metrics, which also include effectiveness, efficiency, and environmental responsibility (SDGs 7, 8, 9, 12, 13). The environmental pillar emphasizes strategies for carbon footprint reduction, whereas the social pillar prioritizes employee welfare and community engagement. The economic pillar pertains to financial performance metrics such as Return on Assets (ROA) and Return on Equity (ROE), which align the values of stakeholders and management.

The performance of sustainability is influenced by factors including organizational size and structure, which complicates the implementation and analysis of sustainable practices [13]. Siew, 2015. Prior research has examined the association between sustainability practices and financial performance, yielding varied findings concerning their correlation (Lassala et al., 2017; Nnamani et al., 2017; Yawar & Seuring, 2017). Developed countries have incorporated sustainability into their core strategies, shaped by regulatory frameworks, whereas emerging markets such as Nigeria are still in the process of evolution in this area [14-16].

This study investigates the sustainability practices of listed manufacturing firms in Nigeria and their impact on performance, addressing a gap in the literature concerning the social and economic dimensions of sustainability [17,18]. A decade-long analysis (2011-2023) will be

conducted to examine long-term trends and their impact on corporate financial performance. The study comprises four sections: literature review, methodology, empirical results, and policy implications.

2. LITERATURE REVIEW

2.1 Conceptual Review

The manufacturing sector involves producing goods using labor, tools, machinery, and biological or chemical processes. It converts raw materials into finished products using chemical, mechanical, or physical means. The success of the sector relies on research and development of new goods, materials, and manufacturing techniques. Industrialization in today's economy relies on technological advancements and the transition from a low-production system to a modern mass production system. This requires appropriate technology, resources, and efficient management techniques.

Sustainability is the long-term preservation of well-being, encompassing environmental, economic, and social aspects, and ensuring responsible resource management [19,20]. It promotes environmental ethics, sustainable development, and sustainable governance. Sustainability accounting is crucial for all stakeholders, and the emergence of sustainability reporting has improved corporate reputation, consumer confidence, transparency, and risk management. Sustainable practices developed from 1972 to 1992 through international conferences and initiatives. The UN Conference on the Human Environment in 1972 established the UN Environment Programme and national environmental protection agencies. The World Conservation Strategy in 1980 aimed to promote sustainable development by identifying priority conservation issues and key policy options.

Organizational performance however evaluates a company's capability to meet stakeholder aspirations using criteria of efficiency, effectiveness, or social reference. It encompasses various metrics, including production output, profitability, sales turnover, market share, and accounting ratios. Performance relies on effective planning, evaluation, implementation, and control, facilitated by management's access to knowledge, skills, innovation, and flexibility.

3. THEORETICAL REVIEW

3.1 Legitimacy Theory

Legitimacy theory, rooted in political economy, suggests that a company's legitimacy depends on an implicit social contract with society. It suggests that organizations must operate within accepted boundaries and norms to be recognized as legitimate by external stakeholders. Managers are motivated to disclose information to demonstrate their company's compliance with societal expectations. Legitimacy theory emphasizes prioritizing the rights of the broader public over investor interests, and suggests that companies must disclose their activities when anticipated by host communities. Legitimacy theory suggests that a company's legitimacy depends on an implicit social contract with society, emphasizing the rights of the broader public over investor interests.

3.2 Stakeholders Theory

Freeman's 1984 stakeholder approach has an ethical (moral) or normative and a positive management branch. Stakeholder Theory's moral or normative stance holds that all stakeholders have the right to equitable treatment by an organization, regardless of power. Managers should manage the organization for all stakeholders regardless of whether their management improves financial success. Traditional stakeholder definitions include any group or individual who can affect or is affected by the organization's goals (Freeman). The stakeholder concept redefines the organization. Generally, the notion is about the organization's identity and conception. According to Popa et al. (2009), stakeholder theory suggests that improved interactions between corporations and other stakeholders lead to easier achievement of business objectives. By adding commercial considerations for sustainable development, stakeholder theory enhances corporate sustainability. According to Perrini and Tencati (2006), a company's sustainability depends on its stakeholder relationships, which include shareholders, employees, clients, suppliers, public authorities, local community and civil society, and financial partners. According to the stakeholders theory, an organization's aims affect a certain group. This definition of stakeholder shows that many persons are stakeholders. These stakeholders include shareholders, creditors, government,

media, employees, their families, local communities, local charities, future generations, and others (Popa et al., 2009). According to the ethical (moral) or normative perspective of stakeholder theory, all stakeholders have minimum rights, no matter how small, that must not be violated. They should have the right to information about how the organization is impacting them, such as through pollution, community sponsorship, employment, safety initiatives, training and education, and so on, even if they choose not to use it.

4. EMPIRICAL REVIEW

Iliemena et al. [21] used the Static model (random effect regression) to analyze data from 37 Nigerian manufacturing enterprises from 2013 to 2022 and found that SR significantly affects economic value added. Gonçalves et al. [22] examined the influence of sustainable reporting on the economic value added of STOXX Europe 600 Index enterprises from 2012 to 2020 and supported this. Panel regression was utilized due to the data, because SR strongly affects economic value added.

Erin, Bamigboye, and Oyewo [23] examined SDG reporting in Nigeria's top fifty listed firms from 2016 to 2018. Survey and content analysis were used to analyze the corporate SDG reporting of Nigeria's top fifty listed corporations by market capitalization. Financial management of the top 50 listed firms and Big Four audit firm Governance and Sustainability staff received a questionnaire. used to evaluate the selected organizations' corporate SDG reporting compliance. Evidence shows that Nigerian corporations report SDGs poorly. Insufficient management commitment, voluntary disclosure, and regulatory enforcement lead to low SDG disclosure among selected Nigerian enterprises, according to the survey.

Monica, Norbey, Merlin, and Yoni [24] used Signalling Theory—intent, necessity, and camouflage—to study Colombian Stock Exchange-listed enterprises' sustainability disclosure practices across economic sectors. The 2018 sustainability reports of 43 companies were analyzed qualitatively using content analysis. Industrial companies typically 1) disclose their environmental practices, particularly emissions management, 2) report economic practices only in relation to their economic performance, and 3) present social practices that focus on internal stakeholder

development. This study found intent to be the most common signal, surpassing requirement and disguise.

Erin and Bamigboye [25] examined SDG reporting in 80 publicly listed firms in eight African countries from 2016 to 2018. This study assessed SDG reporting in selected African states using content analysis and surveys. West Africa (Nigeria and Ghana), East Africa (Uganda and Kenya), North Africa (Morocco and Egypt), and Southern Africa were randomly selected. Except for South African enterprises, Sustainable Development Goal (SDG) transparency among Africa's 80 listed firms is minimal. According to the business reporting metrics for each SDG target, most enterprises are not interested in reporting on SDG activities.

Ikechukwu and Blessing [26] used panel least squares to analyze how sustainable reporting affected the economic value added of 21 publicly traded Nigerian manufacturing companies from 2008 to 2019. Economic, social, environmental, and governance reporting strongly affect economic value added, the study found. Using a t-test, Ofoegbu and Asogwa [2] found that sustainable reporting does not significantly affect the profitability of 15 publicly listed consumer goods in Nigeria.

Maria, Mirella, and Riccardo (2020) studied Italian listed firms' voluntary SDG disclosure using voluntary and non-voluntary disclosure channels. The data show that businesspeople are aware of the SDGs. SDGs are used in disclosure and storytelling by most highly traded, liquid, and capitalized Italian corporations. However, the SDGs and its KPIs are still unclear. Most Italian corporations started SDG reporting in 2016, using non-financial statements and sustainability reports to express their SDG commitments.

Buniamin, Jaffar, Ahmad, and Johari [27] examined Malaysian enterprises' SDG participation and the factors that influence it. The study population included all 788 Bursa Malaysia Main Board public businesses as of 30 June 2020. The final sample included 219 companies selected by a random number generator. The dependent variable was corporate SDG involvement, gathered by content analysis. SDGs reporting in the annual report reflected corporate SDG engagement. Corporate size, board size, independence, and women on the board were investigated. Industry type was a control variable.

The quantitative data showed limited Malaysian business SDG participation. Results showed a link between corporate SDG engagement and corporate size, board size, and women on the board.

5. METHODOLOGY

The research design serves as a framework for data collection and analysis (Bryman & Bell, 2011; Royse, 2011). This study employs a longitudinal research design, involving the collection of data across multiple cases at various time intervals. This approach facilitates the gathering of quantitative data related to two or more variables, enabling the examination of patterns of association (Bryman & Bell, 2011). The selection of a longitudinal research design aligns with the quantitative research strategy to be employed.

The study population comprises forty-seven (47) manufacturing companies listed on the Nigerian Stock Exchange (NSE) as of 31st December 2023, including sectors such as consumer goods, industrial goods, health care, and conglomerates. The secondary data utilized in this study were obtained from companies' annual financial reports. The annual report serves as a primary source of information for a firm, as it comprehensively articulates significant issues and concerns.

5.1 Model Specification

To test for the hypotheses of this study the following model is used to test for the relationship between sustainability reporting and financial performance.

The functional form of the model is given as:

$$ROA = f(SP, FSIZE, FGOWTH, AGE) \quad (1)$$

$$ROE = f(SP, FSIZE, FGROWTH, AGE) \quad (2)$$

$$\text{Tobin's } Q = f(SP, FSIZE, FGROWTH, AGE) \quad (3)$$

Econometric Model

$$ROA = \beta_0 + \beta_1 SP_{it} + \beta_2 FSIZE_{it} + \beta_3 LEV_{it} + \beta_4 FAGE_{it} \quad (4)$$

$$ROE = \beta_0 + \beta_1 SP_{it} + \beta_2 FSIZE_{it} + \beta_3 LEV_{it} + \beta_4 FAGE_{it} \quad (5)$$

$$\text{Tobin's } Q = \beta_0 + \beta_1 SP_{it} + \beta_2 FSIZE_{it} + \beta_3 LEV_{it} + \beta_4 FAGE_{it} \quad (6)$$

Where: ROA= Firm Performance Shareholder Perspective; ROE= Firm Performance Management Perspective; Tobin's Q= Firm Performance Market Perspective; β_0 = Constant, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = Slope Coefficient; SP= Environment, Social and Governance; FSIZE = Free Size; FGROWTH= Firm Growth; FAGE = Firm Age; U= Stochastic disturbance, i =ith firm; t =time period.

The data collected has been analyzed using descriptive statistical tools, including mean and standard deviation, as well as inferential statistical tools such as Pearson Product Moment Correlation (PPMC) and regression analysis. Each objective will be analyzed using Pooled Ordinary Least Squares (OLS) Regression. The panel least squares method was employed to assess the significant effects of independent variables on dependent variables, utilizing both fixed and random effects model estimations. Additionally, the Hausman test was conducted to determine the appropriate model between fixed and random effects results.

6. RESULTS

This section has been divided into two broad parts: The descriptive analysis and the empirical analysis.

6.1 Descriptive Analysis

The study examined the descriptive statistics for both the explanatory and dependent variables of interest. Each variable has been examined based on the mean, median, maximum, minimum, Skewness and Kurtosis as display in Table 1.

Table 1 presents a summary of the variables utilized in this manufacturing listed firm in Nigeria from 2011 to 2023, detailing the mean, maximum, minimum, standard deviation, skewness, and kurtosis. The findings indicate that the mean and median values fall between the minimum and maximum values, suggesting that the variables utilized in the study are statistically independent. The differences between the maximum and minimum values indicate that the sampled companies exhibit similarity. The standard deviation ranges from 0.168 to 3634, indicating that the largest coefficient of variation corresponds to the greatest relative dispersion of the data. The skewness of these variables ranges from -13.66 to 19.13, while the kurtosis, which indicates the pointedness or flatness of the distribution relative to a normal distribution, ranges from 2.301 to 367.5 in this study.

Table 1. Descriptive statistics

Items	ROE	ROA	Tobin's Q	SP	FG	FS	FA
Mean	196.7	4.209	1.827	0.415	-2.561	7.162	30.11
Median	11.52	4.310	1.167	0.408	1.454	7.117	35.00
Std. Deviation	3624	15.71	1.639	0.168	75.41	0.906	13.13
Skewness	19.14	-4.705	2.399	0.297	-13.66	0.004	-0.770
Kurtosis	367.5	55.05	9.704	3.122	196.3	2.301	2.402
Minimum	-989.4	-179.9	0.124	0.000	-1176	5.093	1.000
Maximum	6970	53.96	11.29	0.889	75.57	9.241	55.00

Source: Author's compilation 2024

Note: ROE= return of equity; ROA= return of assets; Tobin's Q= performance market perspective; SP= sustainability practices; FG= firm growth; FS= firm size; FA= firm age

6.2 Correlation Analysis

This research utilized the Pearson product correlation coefficient to examine the association among variables, as shown in Table 2. The results indicate a negative and weak association between firm performance, as measured by management, shareholders, market perspective, and sustainability practices.

The control variables are also weak and negatively correlated with dependent variables except on management perspective that shows strong correlation.

In addition, FA showed a positive and weak relationship with Tobin's (Tobin's Q/SP= 0.043) while revealed negative and weak relationship with firm performance in term of management and shareholders perspective. Since most of the variables reflect weak negative relationship, then study noted that there is no serious evidence of multicollinearity among the variables.

6.3 Empirical Analysis

In order to determine the sustainability practices adopted by the listed Manufacturing firms in Nigeria over the period of study, the study employed overall sustainability disclosure index

of listed manufacturing company in Nigeria for the period of 2011-2023 as shown in Table 3. This study also views the sustainability practices from management perspective among other stakeholders.

The Sustainability Disclosure Index (SUS) and its components: ENV = Environmental Sustainability Disclosure Index, ECO = Economic Sustainability Disclosure Index, SOC = Social Sustainability Disclosure Index. To expedite researcher understanding of their social sustainability efforts, firms were graded based on the index of each firm for social sustainability disclosure. The data in the table also revealed information that indicated firms with high index were SCOA, Guinness, UAC, Dangote sugar, Honeywell flour mile, Greif, John holt, Premier paint, Portland paints & Products, May & Baker, PZ Cussons, MC Nicholas, International Breweries, Morison Industries, Meyer, Dangote cement, Chemical & Allied Product, Berger Paints, Unilever and Nigeria Breweries. While those with low index were Pharma-Deko, Chellarams, Beta glass, Cadbury, Cutix, Nestle, Nigerian Enamelware, Transnational Corporation of Nigeria, Champion Breweries, Fidson Healthcare, Lafarge, Vitafoam, Nigeria Northern flour mill Nascon Allied Industries, Flour mills, Neimeth International pharmaceuticals, Glaxo Smithkline consumer.

Table 2. Correlation analysis of sustainability practices and manufacturing firms performances

	ROE	ROA	Tobin's Q	SP	FG	FS	FA
ROE	1.0000						
ROA	-0.085	1.0000					
Tobin's Q	-0.014	0.286	1.0000				
SP	-0.034	-0.029	-0.007	1.0000			
FG	-0.554	0.082	-0.041	0.086	1.0000		
FS	-0.098	0.316	0.121	-0.040	0.153	1.0000	
FA	-0.053	-0.048	0.0428	0.151	0.092	0.062	1.0000

Source: Author's compilation 2024

Note: ROE= return of equity; ROA= return of assets; Tobin's Q= performance market perspective; SP= sustainability practices; FG= firm growth; FS= firm size; FA= firm age

Table 3. Sustainability disclosure index adopted by selected firms (2011-2020)

Manufacturing	SUS	ENV	ECO	SOC
Cadbury Nigeria PLC.	3	4	2	4
Champion Brew. PLC.	2	3	5	5
Dangote Sugar Refinery PLC	8	3	4	7
Flour Mills Nig. PLC.	1	6	5	4
Guinness Nig PLC	7	5	6	7
Honeywell Flour Mill PLC	6	7	2	6
International Breweries PLC.	5	6	4	3
Mcnichols PLC	4	5	5	4
Nascon Allied Industries PLC	6	2	3	5
Nestle Nigeria PLC.	3	5	4	2
Nigerian Brew. PLC.	4	5	2	6
Nigerian Enamelware PLC.	2	5	3	4
Nigeria Nnorthern Flour MILL	5	3	6	2
P Z Cussons Nigeria PLC.	6	3	4	5
Unilever Nigeria PLC.	2	4	5	6
Vitafoam Nig PLC.	3	4	3	6
Berger Paints PLC	4	5	3	5
Beta Glass PLC.	2	4	3	3
Chemical & Allied Product	5	2	6	4
Cutix PLC.	4	3	5	1
Dangote Cement PLC	5	4	6	2
Greif Nigeria PLC	6	3	4	7
Lafarge Africa PLC.	4	2	5	5
Meyer PLC.	3	4	6	4
Portland Paints & Products Nigeria PLC	5	4	6	4
Premier Paints PLC	4	7	3	5
Fidson Healthcare PLC	7	2	4	3
Glaxo Smithkline Consumer Nig. PLC.	6	3	2	4
May & Baker Nigeri*A PLC.	4	3	5	6
Morison Industries PLC.	5	4	3	5
Neimeth International Pharmaceuticals PLC	3	5	4	3
Pharma-Deko PLC.	2	3	1	4
Chellarams PLC.	3	1	2	5
John Holt PLC.	2	4	7	6
S C O A NIG. PLC.	8	7	6	4
Transnational Corporation of Nigeria PLC	4	3	5	2
U A C N PLC.	7	4	8	3

Source: Authors' compilation 2024

6.4 Effect of Sustainability Practices on Performance of Nigerian Manufacturing Firms from a Management Perspective

Table 4 shows how panel least squares regression, including pooled OLS, fixed effects, random effects, and the Hausman test, was used to examine this study's hypotheses. This model examines how sustainability policies affect Nigerian manufacturing firms' financial performance from a managerial perspective. This means sustainable practices are the independent variable and management-focused financial success is the dependent variable. Table 4

shows that the OLS pooled regression produces an adjusted R-squared value of 0.298, indicating that the independent factors explain 30% of the systematic fluctuations in the dependent variable across the pooled companies during the specified period. This suggests that this study's variables cannot adequately explain Nigerian manufacturing businesses' dependent variable. The OLS Pooled regression model's F-statistic of 40.49 and P-value of 0.000 suggest statistical significance at the 1% level, demonstrating its statistical inference validity. The table shows a mean VIF value of 1.03, below the benchmark of 10, indicating no multicollinearity and no independent variable eliminated from the model.

Table 4. Effect of Sustainability Practices on the financial performance of Nigerian manufacturing firms from a management perspective

Variables	OLS	Fixed Effect	Random Effect
C	7.29(0.00)**	11.02(0.00)**	13.20(0.00)**
SP	0.31(0.758)	7.46(0.00)**	0.27(0.658)
FG	-12.46(0.00)**	-10.17(0.00)**	-14.22(0.00)**
FS	-0.29(0.769)	0.03(0.973)	-0.21(0.545)
FA	-0.07(0.945)	-8.19(0.00)**	-7.07(0.006)**
AdjR-Squared	0.298	0.31	0.307
F-Statistic	40.49(0.00)**	40.49(0.00)**	161.98(0.00)*
VIF Test	1.03		
Heteroscedasticity	27380.25(0.00)*		
Observation	370	370	370

HAUSMAN TEST, Prob>chi2= 10.82(0.000)*

Note: (1) bracket [] are p-values, (2) **, implies statistical significance at 5%

(3) ROE= return of equity; SP= sustainability practices; FG= firm growth; FS= firm size; FA= firm age

Source: Author's compilation 2024

Table 4 shows the fixed effects and random effects panel data regression estimation methods used to test the hypothesis. Results showed variability in coefficient magnitude, sign, and irrelevant factors. The fixed panel regression estimation assumed no correlation between the error term and explanatory components, whereas the random effects model does. The Hausman test was used to pick between two panel regression findings. The null hypothesis states that the random effects model is better than the fixed effects model. The Hausman test p-value (0.00) suggests rejecting the null hypothesis and accepting the alternative hypothesis at 5%. This means we should use fixed effect panel regression results to draw conclusions and make recommendations. This implies that fixed effect findings are statistically better than random effect discoveries.

7. DISCUSSION

In light of the findings, the fixed effect results become essential for hypothesis testing. The subsequent discourse pertains to the independent variable as analyzed by fixed effect regression. SP (fixed effect=7.46(0.00)) as an independent variable demonstrates a positive significant impact on ROE. This indicates that we should accept hypothesis (H0; sustainability practices have no substantial impact on the financial performance (from a management perspective) of listed industrial enterprises in Nigeria). This conclusion corroborates the results of Jan et al. (2019). The outcome supports the premise of legitimacy theory, which posits that stakeholder theory asserts that the stronger a company's relationships with various interest

parties, the more readily it can achieve its commercial objectives. Concerning control variables, FG (fixed effect=-10.17(0.00)) exhibits a negative and statistically significant relationship with ROE at the 5% significance level. Nevertheless, FS (fixed effect=0.03(0.973)) had a favorable albeit small impact on ROE, contrasting with the findings of Naciti (2019).

8. CONCLUSION

The Study analyzed the effect of sustainability practices and performance, particularly Return on Equity (ROE), among publicly traded manufacturing companies in Nigeria from 2011 to 2023. The fixed effect regression analysis revealed that sustainability practices exert a positive and significant impact on ROE, suggesting that the implementation of sustainable practices enhances financial performance. This corroborates the legitimacy theory, indicating that firms with robust stakeholder ties can more readily attain their corporate objectives. Furthermore, firm growth exhibited a negative and substantial correlation with ROE, indicating that swift development may deplete resources and diminish short-term profitability. Conversely, firm size exhibited a positive albeit small impact on ROE, indicating that a business's size does not inherently ensure superior financial performance, in contrast to earlier research such as Naciti (2019).

9. POLICY RECOMMENDATION

Policymakers ought to promote the adoption of sustainability practices within manufacturing enterprises by providing incentives, such as tax

reductions or subsidies, for those that implement ecologically and socially responsible activities. This may enhance both financial performance and long-term corporate sustainability. Manufacturing firms must enhance their interactions with stakeholders, including investors, customers, and regulators, to more effectively match their sustainability strategy with stakeholder expectations. This will guarantee sustained credibility and backing, potentially resulting in improved financial results. Also, companies must adopt a balanced growth plan, ensuring that swift expansion does not jeopardize financial success. Policymakers could facilitate by offering guidance on sustainable growth methods, allowing enterprises to expand without adversely affecting profitability.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) here by declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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