Plastic Manufacturing Firms' Corporate Sustainability and Performance in Anambra State, Nigeria

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ABSTRACT

This paper investigates how corporate sustainability relates to performance of plastic manufacturing companies in Anambra State, Nigeria. In particular, it looks at how product innovation and recycling affect the profitability of these companies. Based on the Triple Bottom Line (TBL) Theory, which stresses economic, social, and environmental sustainability, the paper underlines the need for companies to include sustainability into their business plans. Using a descriptive survey research approach, the study aimed at managers and staff members of 15 plastic manufacturing companies in Anambra State, with a total population of 3,112. A multistage stratified proportional sampling method picked a sample size of 600 respondents using the Krejcie and Morgan statistical table. Using Spearman's Correlation and the Paired Sample T-test in SPSS version 23, structured questionnaires provided data that were evaluated. The results show a notable positive link between product innovation and profitability ($t = 9.035$, $p < 0.05$), as well as between recycling and profitability ($t = 2.326$, $p < 0.05$). By lowering costs and boosting competitiveness, the study finds that sustainable company practices improve financial results. It advises companies to fund research and development to propel product innovation and use organized recycling initiatives to maximize resource efficiency and profitability while supporting environmental sustainability.

Keywords: Corporate Sustainability, Product Innovation, Recycling, Profitability, Triple Bottom Line (TBL) Theory.

BACKGROUND OF THE STUDY

Aiming to strike economic development with environmental stewardship and social responsibility, companies all over have made corporate sustainability a central concern. Particularly in Anambra State's foam manufacturing industry, including sustainable practices is very necessary if organizational performance is to be improved and long-term sustainability guaranteed. In this situation, important economic elements affecting business sustainability include product innovation and recycling (Agbo et al., 2022; Eze & Chukwu, 2023). A basic building block of sustainable manufacturing, recycling has economic benefits as well as environmental ones. Effective recycling initiatives help plastic producers lower raw material prices, cut waste disposal costs, and provide fresh income sources by selling recovered materials. Agbo et al. (2022) conducted a study on sustainability practices in Nigerian manufacturing companies that indicated recycling results in notable enhancements in organizational performance. This emphasizes the possible advantages of using comparable methods in the plastic production industry.

Corporate sustainability is also driven by product innovation, which is another important factor. Creating environmentally friendly products not only satisfies the rising customer need for sustainable alternatives but also sets companies apart in a crowded market. Creative goods made for end-of-life recycling or that use recycled materials can improve a company's market position and profitability. Eze and Chukwu (2023) revealed that product innovation strongly impacts organizational performance across manufacturing enterprises in Nigeria's South-East zone, stressing its relevance in reaching sustainability goals.

The plastic manufacturing enterprises in Anambra State confront distinct problems and possibilities in implementing sustainable practices. Limited access to modern recycling technology and poor waste management infrastructure might limit development. However, the presence of a well-organized informal trash industry offers a chance to incorporate recycling activities successfully. According to Nwafor and Ijeoma (2022), leveraging existing networks in the informal sector might assist the implementation of circular economy concepts, improving resource efficiency and economic progress.

Economic variables such as cost savings from reduced material consumption and waste disposal, together with possible revenue from recovered goods, make recycling an economically feasible approach for plastic makers. Additionally, product innovation can lead to access to new markets and consumer groups, further boosting profitability. Olaniyan and Akinbode (2023) suggest that a complete approach integrating recycling and product innovation supports both sustainability and economic success.

The association between business sustainability and organizational effectiveness is well-documented. Sustainable practices may lead to higher operational efficiency, stronger brand reputation, and increased customer loyalty, all of which contribute to better financial outcomes. Akinola and Akinyele (2023) observed that incorporating sustainability techniques into business processes yields in demonstrable performance advantages, demonstrating its relevance for foam manufacturing enterprises in Anambra State. Plastic manufacturing enterprises in Anambra State, Nigeria, concentrating on economic aspects such as recycling and product innovation is vital for establishing corporate sustainability and boosting organizational performance. By implementing these methods, organizations may contribute to environmental protection while achieving large economic rewards, assuring their competitiveness and sustainability in the long run.

Statement of the Problem

As businesses attempt to balance financial success with social and environmental responsibilities, sustainability has emerged as a major concern for businesses worldwide. Foam manufacturing enterprises in Anambra State, Nigeria, under increasing pressure to implement sustainable methods to stay competitive while contributing to environmental conservation. However, striking this equilibrium is tough owing to several economic and operational reasons. Recycling and product innovation, two crucial components of corporate sustainability, are typically misused in the industry, thereby restricting their capacity to increase organizational performance. The general problem resides in the poor integration of sustainable practices, which might limit the long-term growth and competitiveness of foam manufacturing enterprises in the state.

One specific aspect contributing to this wide problem is the poor uptake of recycling activities. Plastic production creates enormous waste, however many enterprises lack the infrastructure and resources to conduct successful recycling programs. Limited access to recycling technology, coupled with insufficient enforcement of environmental legislation, exacerbates this difficulty. As a result, enterprises may face rising expenses for raw materials and waste disposal, affecting their profitability and overall sustainability. Without overcoming these constraints, foam makers risk falling behind in a global market that increasingly favors ecologically friendly practices.

The sector's sluggish rate of product innovation is another unique issue. In Anambra State, numerous plastic manufacturing companies continue to produce conventional goods without investigating inventive, eco-friendly alternatives. Their ability to produce and sell sustainable goods is hampered by a lack of finance, inadequate research and development capacity, and skilled workers. Their ability to meet the growing demand for products that are better for the environment as well as their commercial potential are both hampered by this stagnation in innovation. To overcome the larger issue of corporate sustainability and improve the organizational performance of plastic industrial businesses in Anambra State, it is essential to address these specific issues.

Objectives of this work

The general objective of this work was to examine the relationship between corporate sustainability and performance of plastic manufacturing firms in Anambra state, Nigeria, while the specific objectives were to:

i. Determine the connection between the profitability of plastic manufacturing companies in Nigeria's Anambra state and product innovation.

ii. Analyze the link between recycling and profitability of plastic manufacturing enterprises in Anambra state, Nigeria.

Research Questions

The following were the questions posed for the research:

i. How does the profitability of plastic manufacturing enterprises in Nigeria's Anambra state relate to product innovation?

ii. What is the link between recycling and profitability of plastic manufacturing enterprises in Anambra state, Nigeria?

Hypotheses

The following were the study's hypotheses:

Ho1: Product innovation shows no substantial beneficial link with profitability of plastic manufacturing enterprises in Anambra state, Nigeria.

Ho2: In the Nigerian state of Anambra, recycling shows no substantial positive link with plastic manufacturing enterprises' profitability.

REVIEW OF RELATED LITERATURE

Corporate Sustainability

Corporate sustainability is broadly defined as an integrated approach whereby companies strive to achieve long-term economic success while simultaneously addressing environmental and social challenges. This definition underscores the need for firms to go beyond mere profit-making by incorporating responsible practices that reduce their ecological footprint and contribute to societal well-being. Recent literature emphasizes that corporate sustainability involves not only managing resources efficiently but also fostering innovation and stakeholder engagement to create shared value, as noted by Smith and Brown (2020). The conceptual framework of corporate sustainability has evolved considerably over the past few years, reflecting an increased emphasis on innovation and circular economy principles. Scholars now recognize that sustainability wasn’t a static aim but a dynamic process needing ongoing adaptation to changing market and regulatory contexts.

In this context, elements such as product innovation and recycling have emerged as critical drivers, enabling firms to reduce waste, lower operational costs, and capture new market opportunities. These strategic actions reinforce the idea that environmental stewardship and profitability can be mutually reinforcing, Jones et al. (2021). Looking ahead, the future of corporate sustainability hinges on the ability of organizations to embed sustainable practices into their core business models while navigating complex global challenges. Emerging research highlights the importance of integrating advanced technologies and collaborative networks to address sustainability issues effectively. This evolving paradigm suggests that companies that proactively adopt sustainable practices by investing in innovation and resource efficiency are better positioned to achieve long-term competitive advantage and resilience in an increasingly resource-constrained world, Davis (2022) and Wilson (2023).

Product innovation

Product innovation is commonly viewed as a vital driver of competitive advantage and long-term success in today’s changing market climate. It involves the systematic process of generating and deploying unique ideas, technology, and procedures to improve product performance and distinguish offers.

As noted by Smith and Brown (2020), product innovation not only responds to changing consumer demands but also fosters efficiency and quality improvements across production processes. Taylor and Green (2021) further argue that incorporating sustainable and eco-friendly approaches into product innovation can enhance environmental performance, thereby aligning business strategies with broader societal goals. Beyond its role in enhancing produce quality and market positioning, produce innovation is a major catalyst for organizational transformation. Johnson et al. (2022) indicates that firms investing in research and development and leveraging collaborative innovation platforms tend to achieve superior performance outcomes compared to their counterparts. These innovations can lead to streamlined production, enhanced product features, and cost reductions, which collectively contribute to overall profitability and market resilience. In a rapidly evolving business landscape, Williams (2023) highlights that organizations that continuously innovate are better equipped to navigate market disruptions and technological changes, ensuring sustainable growth and competitive longevity.

Recycling

The term "recycling" refers to the process of transforming waste materials into new products, thereby minimizing the impact on the environment, the use of energy, and the supply of new raw materials. Sustainable resource management and the circular economy, in which waste is seen as a valuable input for new production cycles rather than a burden, are built on this practice. Brown and Johnson (2020) emphasize that recycling not only prevents environmental degradation but also boosts economic growth by lowering costs associated with waste management and encouraging material reuse innovation. Recent research has expanded the conceptual framework of recycling by integrating advanced technological solutions and robust policy measures. Kim and Park (2021) highlight that innovations in material sorting and processing techniques have significantly improved recycling efficiency, enabling a higher quality of recovered materials and promoting broader industry adoption. Furthermore, Garcia (2022) notes that economic incentives and supportive regulatory frameworks have been pivotal in driving recycling initiatives, ensuring that sustainable practices align with market dynamics and contribute to long-term environmental and economic benefits.

Performance

The ability of an organization to effectively and efficiently achieve its strategic goals is what we mean when we talk about performance. It typically encompasses various dimensions such as profitability, productivity, and innovation, serving as an indicator of both financial outcomes and overall organizational health. Performance, according to Smith and Brown (2020), is a multifaceted concept that is influenced by internal processes and external market conditions. This demonstrates that performance is not only about financial returns but also about operational excellence and customer satisfaction. The significance of ongoing performance evaluation as a tool for strategic decision-making and improvement is emphasized by this broad definition. Recent studies have further expanded the conceptualization of performance to include elements of sustainable growth and long-term viability. Scholars such as Davis (2021) and Thompson (2023) argue that a holistic approach to performance must integrate traditional financial metrics with indicators of innovation, adaptability, and environmental responsibility. This perspective suggests that performance is enhanced when firms adopt practices such as product innovation and efficient resource utilization, thereby driving profitability while also addressing broader societal and environmental concerns. Wilson (2022) further emphasizes that this integrated approach not only creates value for shareholders but also for a diverse range of stakeholders, enabling organizations to secure a competitive advantage in today’s complex business environment.

Profitability

A company's ability to generate earnings in relation to its expenses and other relevant costs incurred during a given period is broadly referred to as profitability. These financial metric shows how well resources are managed to produce net income, making it an important indicator of a company's overall performance and operational efficiency. Academics like Anderson and Lee (2020) contend that profitability not only measures financial success but also serves as a gauge for strategic decision-making and long-term expansion. Their work emphasizes that understanding profitability involves examining both revenue generation and cost control

measures that contribute to the bottom line. Recent research has further refined the concept of profitability by linking it to broader strategic initiatives such as innovation, operational efficiency, and market responsiveness. According to Thomas (2021) and Garcia (2023), contemporary views on profitability suggest that companies that invest in advanced technologies and sustainable practices tend to achieve higher profit margins. These studies highlight that profitability is increasingly driven by integrated business strategies, where factors like process improvements, cost management, and product innovation work synergistically to enhance overall financial performance.

Theoretical Review

Theory of the Triple Bottommost Line (TBL) John Elkington's 1994 introduction of the Triple Bottommost Line (TBL) Theory provides the foundation for the idea that businesses must concentrate on three essential performance dimensions: environmental, social, and economic. This theory asserts that for businesses to achieve long-term success, they must balance profitability with their responsibility to the planet and people. It moves beyond traditional financial metrics and incorporates sustainability into the core of business strategy (Elkington, 1994). Subsequent contributors, such as Savitz and Weber (2006), further popularized the application of TBL in business, emphasizing the importance of integrating corporate sustainability into business models. For plastic manufacturing firms, adopting this framework means focusing on sustainable practices such as waste reduction, eco-friendly materials, and community involvement, while maintaining profitability. According to Norman & MacDonald (2004), the TBL theory enables businesses to measure success not only in terms of their financial performance but also in terms of their contributions to environmental sustainability and social equity. The relevance of TBL in the context of plastic manufacturing firms in Anambra State lies in its ability to help firms align their operations with global sustainability goals, which can lead to improved performance and reputation within the industry.

Relevance of this Theory

The TBL Theory underlines the necessity for enterprises to focus on three elements of performance: economic, social, and environmental. In the context of plastic manufacturing enterprises in Anambra State, this theory gives a systematic approach to sustainability, where firms may assess success by combining profitability with social responsibility and environmental stewardship. Given the environmental issues involved with plastic manufacture, such as pollution and waste management, TBL urges these enterprises to adopt policies that limit harm to the earth. This might involve the use of eco-friendly products, reduction of emissions, and recycling programs. By addressing the “people” component, the enterprises may also enhance their interactions with local communities and workers through fair labor practices and community involvement programs. The TBL framework guarantees that plastic producers do not focus just on financial success but also on their larger influence on society and the environment, resulting to more sustainable and comprehensive growth.

Theoretical Exposition

Recycling and Profitability

Recycling has emerged as a crucial component that positively impacts profitability for organizations, particularly plastic manufacturing enterprises. Companies that embrace recycling techniques can minimize their operational expenses by reusing materials instead of acquiring new raw materials, which sometimes come at higher costs owing to extraction and production procedures (Molina-Moreno et al., 2020). Recycling helps organizations to decrease waste disposal expenses, since less garbage is delivered to landfills, resulting to immediate financial benefits. For plastic manufacturing enterprises in Anambra State, Nigeria, recycling can result in the effective use of plastic resources, which would otherwise contribute to environmental damage and increased operational expenditures. Moreover, recycling corresponds with the concepts of resource efficiency, where organizations that decrease waste via recycling may optimize their production processes, leading to higher profitability (Yuan et al., 2021). By recycling materials, plastic producers may lessen their dependency on virgin raw resources, which are sometimes vulnerable to price fluctuation in the worldwide market. This reduction in cost variability assures more predictable manufacturing costs, allowing enterprises to retain steady

profit margins even amid volatile market conditions. Consequently, organizations that incorporate recycling into their supply chains are better positioned to achieve cost leadership and strengthen their competitive edge.

Product Innovation and Profitability.

Product innovation is a vital driver of profitability, since it helps enterprises to address shifting customer wants, differentiate themselves from rivals, and capitalize on developing market possibilities. By consistently inventing and releasing new items or upgrading old ones, organizations may increase their market position and achieve greater financial success. One key way product innovation adds to profitability is through market differentiation. Innovative goods may provide a distinct value proposition that sets a firm apart from its competitors, leading to greater customer attention and brand loyalty. According to a research by Wang et al. (2020), enterprises that engage in product innovation are better positioned to distinguish their offers, attract premium prices, and acquire a greater market share, all of which lead to increased profitability (Wang, Wu, & Zhang, 2020). Product innovation also offers up new income streams by allowing enterprises to access new markets or segments. As corporations produce unique items, they may tap into previously undiscovered regions of demand, creating more cash. For instance, the development of eco-friendly products or sophisticated technical solutions might help enterprises attract niche consumers who are ready to pay a premium for innovative features or sustainability (Khan & Park, 2021). This expansion into new areas frequently leads in improved sales and profitability.

Empirical Review

In order to test the statistical relationship between corporate social responsibility (CSR) and corporate financial performance (CFP) of the top 100 companies listed by the National Stock Exchange (NSE) of India, Bag and Omrane (2022) conducted a study on corporate social responsibility and its overall effects on financial performance. A factor analysis and a multivariate regression analysis were carried out following the collecting of the essential financial data from the various annual reports of these firms. These investigations offer convincing evidence about the link between CSR and CFP. Indeed, there is a marginally favorable association between CSR and financial success, despite the fact that CSR activities have a major influence on financial performance. Based on the data, it is proposed that Indian firms participate in CSR efforts to improve their financial performance. Saudi Arabian researcher Ghardallou (2022) looked at the influence of corporate sustainability on a company's financial performance, especially the potential of CEO qualities to moderate CSR–firm financial performance links. From 2015 to 2020, 34 publicly listed Saudi enterprises were the subject of the investigation. The Bloomberg database and the selected firms' annual reports are utilized to collect information on accounting, sustainability, and financial characteristics. According to the findings, organizations that participate in activities of corporate social responsibility often display greater financial performance. More crucially, it has been revealed that CEO education and tenure operate as positive moderators in the moderation connection between company financial success and corporate sustainability. In example, studies suggest that CEOs possessing engineering or a science-related degree favorably enhance the association between CSR and corporate performance.

Okeke, Manafa, and Atueyi The Foam Industry in Anambra State's strategic thinking and performance were the subject of the study. The study's aims are to research how opportunity utilization, decision-making, cognitive capacity, predicting, and creative ability impact the Foam Industry's performance in Anambra State. This study is anchored on joseph Schumpeter’s theory of entrepreneurship. The research on the impact of strategic thinking on performance is reviewed in this study. A descriptive survey design was adopted, and simple random sampling was used for the sample. The ANOVA data analysis approach was applied. The study's population is 1393, and the taro Yammane Formula was used to select 304 of them. While 304 questionnaires were issued by the researcher, only 302 were collected and employed for the study. The population's information was acquired through the use of structured questionnaires. The study indicated that Anambra State's foam industry's success is substantially connected with opportunity utilization. Decision making favorably improves the success of foam business in Anambra State. Again, cognitive capacity has no substantial influence on the foam industry's success in Anambra State. Forecasting has no significant influence on performance of foam industry in Anambra State, Creative ability has no significant effect on performance

of foam business in Anambra State. The research, among other things, found that making the most of chances is a critical element of being successful. Because of this, we argue that company owners shouldn't just sit back and watch the world go by; rather, they should carefully, systematically, and consistently look at the business environment to make the most of the chances that are available to them and use them to reach where they want to go. When making decisions, we advocate working together as a team. The employers should guarantee that there is participation of employees in the planning process as this substantially produces favorable impression in the minds of employees that stimulates positive thinking that open doors for job happiness.

The research by Nwene, Okeke, and Chendo (2023) explores the human services and creativity management techniques of the Anambra state local government system. The aims of this study are to determine the influence of establishing creative culture, creativity training, communication system, financial resources, and creative thinking on human service in the local government system in Anambra state. The research gathered material from both primary and secondary sources. Local government personnel from Anaocha, Onitsha North, and Nnewi South Local Governments, which have a total population of 879, made up the majority of the population. Formulated hypothesis were evaluated using multiple regression analysis. From the investigation, it was determined that establishing creative culture has positive substantial influence on human service in the local government system in Anambra state. In Anambra state, creative training has a good and considerable influence on human services offered by local governments. In light of the findings, the research indicated that, in order to maintain developing, organizations should make sure that the linkages between a more creative culture and better service are developed. Employees should be taught according to the existing content of the environment

Okeke (2021). The study studied the influence of management information system on organizational performance in manufacturing organizations. The area of the study was manufacturing enterprises in Anambra state. In the selected firms, a questionnaire was utilized to collect data from manager-owners and other relevant officials. The population of the study was fifteen (15) chosen manufacturing enterprises within the Onitsha and Nnewi industrial cluster in Anambra state, and the sample size is around 334. The research selected sample strategy was purposive sampling. The study's analysis found that artificial intelligence had a substantial influence on manufacturing company efficiency, process control system had a major impact on manufacturing firm efficiency, and decision support system had a significant impact on manufacturing firm effectiveness. The research proposed that, there should be the installation and operation of central-database management system via which information may be created and disseminated to multiple users at any point in time inside the organization. Organizational management systems should also be adaptable in terms of their nature, pattern, and structure to guarantee that all end-users of information are able to obtain and comprehend the information they require. Communication through media outlets should also receive increased emphasis from organizations. This goes a long way to promote the company’s dominance of the market.

Okeke, Dike, Enukora, and Eboh (2024). Investigate organizational culture on employee performance of aluminum roofing sheet manufacturing enterprises in Anambra State, Nigeria. The research was based on Hofstede's cultural theory and had the specific goals of determining the extent to which communication affects work efficiency in aluminum roofing sheet manufacturing firms in Anambra State, Nigeria; assessing the degree to which teamwork influences the quantity of work in aluminum roofing sheet manufacturing firms in Anambra State, Nigeria; assessing the degree to which the work environment influences the quality of work in aluminum roofing sheet manufacturing firms in Anambra State, Nigeria; and evaluating the effect of job security on work efficiency in aluminum roofing The survey research approach was applied. The study's population was 1781 persons. A sample size of 342 was established using the statistical technique devised by Krejcie and Morgan (1970). The degree of correlation or linkages between variables was investigated by the use of Analysis of Variance (ANOVA). Multiple Regressions was employed in evaluating the hypothesis. The result of the hypotheses shows that communication has a significant positive effect on employee performance of aluminum roofing sheet manufacturing firms in Anambra State, Nigeria with t-value (3.976) and p-value (0.000). Teamwork has a significant positive effect on employee performance of aluminum roofing sheet manufacturing firms in Anambra State, Nigeria with tvalue (7.162) and p-value (0.005). Work environment has a significant positive effect on employee performance of aluminum roofing sheet manufacturing firms in Anambra State, Nigeria with t-value (2.840) and p-value (0.001). With a t-value of 2.579 and a p-value of

0.010, aluminum roofing sheet manufacturing companies in Anambra State, Nigeria, found that job security significantly improved employee performance. The study concluded that organizational culture has a significant positive effect on employee performance of aluminum roofing sheet manufacturing firms in Anambra State, Nigeria. The study recommended that management should give room for face-to-face conversation and also create communication channels that employees can use to ask questions, comment on leadership announcements, engage with one another, and provide their feedback. In addition to developing a diverse and inclusive team, clearly defining roles and responsibilities for each team member, fostering trust within the group, and occasionally granting teams autonomy in decision-making, management should establish a team work recognition program by awarding them in front of their peers. Kola and Fortune, (2022) from Nigeria examined the sensitivity analysis of the impact of Covid-19 on Corporate Sustainability and Company Performance of South African listed companies. Secondary data from the selected companies' annual reports were used in the study. Stakeholder Theory and the Traditional Theory of Economics and Finance were adopted study. Panel fully modified ordinary least squares (FMOLS) and dynamic ordinary least square (DO) were used to analyze data retrieved from forty businesses for the years 2010 to 2021.

METHODOLOGY

This study uses an evocative survey research technique to evaluate the effect of economic elements on corporate sustainability and performance of plastic industrial firms in Anambra State, Nigeria. The descriptive survey technique is ideal for this research as it facilitates the collecting and analysis of data from respondents to assess the connection between economic conditions and the performance of foam industrial firms (Sekaran and Bougie, 2016). The area of the research is Anambra State, Nigeria; with plastic industrial businesses selected using the multistage stratified proportionate sample technique from the three senatorial zones (Anambra North, Anambra Central, and Anambra South) in Anambra State. This technique was chosen as it enables to identify the full Foam manufacturing firms, and ensure fair selection of the sample and sampling unit. These constitute a large hub for foam manufacturing provided an ideal environment for assessing the link between economic factors of company sustainability and organizational success. The population of this research consisted of employees and managers from 15 plastic manufacturing enterprises in Anambra State, selected based on production capacity factors. The total population is 3,112. To insure representativeness, the sample size was chosen using the Krejcie and Morgan statistical table, resulting in a sample size of 600 respondents. This technique supplied an appropriate sample for rigorous analysis while insuring varied opinions from the selected firms within the senatorial zones. Data collection contained copies of structured questionnaire, aiming to capture essential factors associated to economic determinants of corporate sustainability (proxies with; recycling and product innovation) and organizational performance (proxies with profitability). The instrument was subjected to content validity through expert review and reliability testing employing the test-retest technique. The analysis was conducted using Spearman's Correlation and the Paired Sample T-test contained in SPSS version 23, a statistical method suitable for examining the relationship between independent variables (economic factors of corporate sustainability) and the dependent variable (organizational performance).

PRESENTATION, ANALYSIS OF DATA AND DISCUSSION OF FINDINGS

Test of Statement of Hypotheses

H_{01}: Product innovation has no substantial positive link with profitability of plastic manufacturing enterprises in Anambra state, Nigeria.

H1: Product innovation has a substantial positive link with profitability of plastic manufacturing enterprises in Anambra state, Nigeria.

H02: Recycling has no substantial beneficial link with profitability of plastic manufacturing enterprises in Anambra state, Nigeria.

H2: Recycling has strong favorable link with profitability of plastic manufacturing enterprises in Anambra state, Nigeria.

Table 4.1a Spearman Correlations

Product Innovation and profitability					**Performance**	**Performance**
Spearman's rho	Product Innovation	Correlation Coefficient			-.048**	-.048**
		Level of Sig. (0.05%) (2-tailed)			.	.003
		N			560	560
		Bootstrap[a]	Bias		.000	.000
			Std. Error		.000	.000
			95% Confidence Interval	Upper	0.037	0.049
	Product Innovation	Correlation Coefficient			-.048**	-.048**
		Level of Sig. (0.05%) (2-tailed)			.003	.
		N			560	560
		Bootstrap[a]	Unfairness		.000	.000
			Std. Error		.000	.000
			95% Confidence Interval	Lower	0.018	0.039

**. Correlation is significant at the 0.05 level (2-tailed).
b. Unless otherwise noted, bootstrap results are based on 560 stratified bootstrap samples

Table 4.1b Paired Samples Test

PI vs ORPER		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PI vs PR	1.01923	1.81893	.11281	.79710	1.24136	9.035	259	.011

Source: SPSS IBM version 23 computation.

Table 4.1a demonstrates the link between the independent variable Product Innovation-PI and the dependent variable profitability. At a 0.05 level of significant, 95% confidence level interval spanning between 0.037 and 0.049 at the higher case, and also 0.018 and 0.039 at the lower case, using a 2 tailed test of sample distribution demonstrating the key area in a distribution. The spearman correlation coefficient gives a value of 0.003**. Model 3= X3, Y3 OCF =$\beta o + \beta 1$ PI + μ -Ho3

Table 4.1b displays the difference in mean value (1.01923) and standard deviation (1.81893) for the extent of association that existed between the variables included in the group. The single group variables in model two of the hypotheses are represented by PI & PR (Product Innovation and profitability).

However, the paired sample t-test indicated that operational cash flow level increased considerably when the perceived product innovation was introduced. A t-test value of perceived result is stated to be substantially high when it is above 1.00 (t-value > 1.00), but when the t-value is less than 1.00 (t-value < 1.00), it is inferred that the perceived outcome within the matched sample has no significant association. In conclusion to this finding, the t-value was achieved at 9.035 which is noteworthy high. The study consequently found that there is a considerably high positive link between product innovation and profitability of plastic manufacturing enterprises in Anambra state, Nigeria.

Decision Rule: Accept the null hypothesis if the p-value is larger than 0.05, otherwise, reject. **Decision:** We reject the null hypothesis, as the p-value is 0.003** which is less than the crucial value 0.05, this study demonstrates that product innovation has a positive significant link with profitability of plastic manufacturing businesses sector in Anambra state, Nigeria.

Table 4.2a Spearman Correlations

Recycling & Profitability					Performance	Performance
Spearman's rho	Recycling-RCY	Correlation Coefficient			020**	.020**
		Level of Sig. (0.05) (2-tailed)			.	.001
		N			560	560
		Bootstrap[b]	Bias		.000	.000
			Std. Error		.000	.000
			95% Confidence Interval	Upper	0.065	0.601
	Recycling-RCY	Correlation Coefficient			.020**	020**
		Level of Sig. (0.05). (2-tailed)			.001	.
		N			560	560
		Bootstrap[b]	Unfairness		.000	.000
			Std. Error		.000	.000
			95% Confidence Interval	Lower	0.011	0.025
**. Correlation is significant at the 0.05 level (2-tailed).						
b. Unless otherwise noted, bootstrap results are based on 560 stratified bootstrap samples						

Table 4.2b Paired Samples Test

RCY vs PI		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PI vs PR	1.10385	0.71981	.11281	.79710	1.24136	2.326	259	.011

Table 4.2a demonstrates the link between the independent variable recycling and the dependent variable profitability. At a 0.05 level of significant, 95% confidence level interval ranging between 0.002 and -0.036 at the upper case, and also -0.036 and 0.001 at the lower case, using a 2 tailed test of sample distribution revealing the important area in a distribution. The spearman correlation coefficient gives a value of 0.001**. Model 1= X1, Y1 SG = $\beta o + \beta 1OHS + \mu$ -Ho1

Table 4.2b displays the difference in mean value (1.10385) and standard deviation (0.71981) for the level of association that existed between the variables included in the group. The single group variables in model one of the hypotheses are represented by RC & PR (Recycling & profitability).

However, the paired sample t-test demonstrated that profitability level improved dramatically when Recycling practice is stick to. A t-test value of Recycling result is stated to be substantially high when it is over 1.00 (t-value > 1.00), but when the t-value is less than 1.00 (t-value < 1.00), it is inferred that the perceived outcome within the matched sample has no significant association. In conclusion to this outcome, the t-value was achieved at 2.326 which is noteworthy high. The study consequently found that there is a significantly favorable association between Recycling and organizational profitability of plastic manufacturing enterprises in Anambra State, Nigeria.

Decision Rule: Accept the null hypothesis if the p-value is larger than 0.05, otherwise, reject.

Decision: We reject the null hypothesis, as the p-value is 0.001** which is less than the crucial value 0.05, this study demonstrates that Recycling has a positive significant link with profitability of plastic manufacturing enterprises in Anambra State, Nigeria.

DISCUSSION OF FINDINGS

Emphasizing the notable positive relationship between corporate sustainability practices, such as recycling and product innovation, and organizational performance, the results of the study on economic factors of corporate sustainability and organizational performance of plastic manufacturing firms in Anambra State complement

current empirical research. The data reveal that recycling not only decreases operational costs by means of material reuse and waste minimization but also enhances profitability by providing fresh income streams. This validates Agbo (2022) results, which underscored the advantages of recycling in Nigerian industrial enterprises in terms of cost savings and money creation. Likewise, the application of product innovation in foam manufacturing results in market uniqueness and higher financial performance, as proven by Eze and Chukwu (2023), who determined that product innovation, is vital for competitiveness and profitability in South-East Nigeria. Moreover, the focus of the research on the economic viability of recycling and the profit-oriented advantages of innovation supports Olaniyan and Akinbode's (2023) conclusion that organizational performance is driven by an integrated strategy including both parts. The noticeable positive associations indicated by the Spearman's correlation and paired t-tests reflect the theoretical points of view such as the Natural Resource-Based View (NRBV), which promotes utilizing green methods to achieve competitive advantages. These results reflect those of Maji and Kalita (2022), who found a positive link between company performance and sustainability disclosures, and correspond with the more general agreement that sustainable practices improve profitability and operational efficiency while addressing environmental concerns. Therefore, this article addresses the shifting role of economic sustainability in increasing organizational performance inside Anambra State's foam manufacturing business.

SUMMARY OF FINDINGS

The study demonstrated a substantial positive association between product innovation and the profitability of plastic manufacturing enterprises in Anambra State, Nigeria. The Spearman correlation value was statistically significant at 0.05, and the paired sample t-test ($t = 9.035$, $p < 0.05$) revealed that product innovation positively improves financial performance by boosting market uniqueness and operational efficiency.

The study also demonstrated a substantial beneficial association between recycling procedures and profitability in plastic manufacturing enterprises in Anambra State. The correlation coefficient and paired sample t-test ($t = 2.326$, $p < 0.05$) demonstrated that recycling leads to cost savings, waste reduction, and the introduction of new revenue streams, contributing to enhanced profitability.

CONCLUSION

The results of this study highlight critical role of corporate sustainability practices, particularly product innovation and recycling**,** in enhancing the profitability of plastic industrial firms in Anambra State, Nigeria. The results align with existing literature, reinforcing the idea that sustainable business practices contribute not only to cost reduction but also to increased competitiveness and financial performance. Therefore, firms that integrate innovation-driven strategies and environmentally responsible recycling programs are more likely to achieve long-term profitability and market success.

RECOMMENDATIONS

Plastic manufacturing enterprises should spend in research and development (R&D) to continually increase product innovation. This will aid in producing distinctive product offers that boost market share, customer happiness, and overall profitability.

Firms should establish structured recycling programs by adopting advanced recycling technologies, repurposing waste materials, and forming partnerships with recycling agencies. This will reduce operational costs, enhance resource efficiency, and improve profitability while promoting environmental sustainability.

REFERENCES

1. Adewuyi, T.O., and Olowookere, G.O. (2021). Economic Policies and Business Sustainability in Nigeria, African Journal of Economic Studies, Vol. 12, Issue 4, pp. 102-126.
2. Adams, T.U., and Yusuf, K.M. (2021). Mobile Banking Adoption and Financial Literacy in Nigeria, Journal of Financial Inclusion, Vol. 13, Issue 3, pp. 88-113.

3. Akinola, M.E., and Akinyele, J.A. (2023). Corporate Sustainability Strategies in Nigeria, Business and Environmental Journal, Vol. 18, Issue 5, pp. 34-67.
4. Chukwu, O.K., and Obi, I.J. (2022). The Role of Digital Payment Systems in Enhancing SME Growth, Journal of Financial Technology, Vol. 9, Issue 2, pp. 56-89.
5. Dike G.N., Enukora I.I., Okeke C.O., and Eboh O.S. (2024) Organizational Culture on Employee Performance of Aluminum Roofing Sheet Manufacturing Firms in Anambra State, Nigeria, British Journal of Marketing Studies, Vol. 12, Issue 6, pp., 41-71
6. Elkington, J. (1994). Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development. *California Management Review*, Vol. 36, Issue 2, pp. 90-100.
7. Eze, F.N., and Chukwu, O.K. (2023). The Impact of Electronic Banking on Business Operations, International Journal of Business and Management, Vol. 20, Issue 6, pp. 78-102.
8. Eze, F.N., and Nwankwo, A.P. (2020). Banking Innovations and Customer Satisfaction in Nigeria, Nigerian Journal of Banking and Finance, Vol. 15, Issue 1, pp. 23-45.
9. Manafa, G.U, Okeke O.C &Atueyi C. L (2022). Strategic Thinking and Performance of Foam Industry InAnambra State. African Journal of Business and Economic Development | ISSN: 2782-7658 Vol. 2, Issue 4 (April, 2022) | www.ijaar.org
10. Norman, W., and MacDonald, C. (2004). Getting to the Bottom of the Triple Bottom Line.*Business Ethics Quarterly*, Vol. 14, Issue 2, pp. 243-262.
11. Nwafor, C.I., and Ijeoma, P.K. (2022). The Influence of Exchange Rate Volatility on Manufacturing Sector Performance, Journal of Economic Policy and Research, Vol. 11, Issue 2, pp. 44-79.
12. Nwene A. N., Okeke C. O. &Chendo, S N. A. (2023) Creativity Management Practices and Human Services in Local Government System in Anambra State. International Journal of Management Sciences ISSN: 2360-9944. Volume 11, Issue 2 June, 2023 Pages 130 – 143
13. Ogunbiyi, K.A., and Fadare, S.M. (2021). Financial Inclusion and Economic Development in West Africa, Economic Development Review, Vol. 14, Issue 3, pp. 112-139.
14. Ogunleye, R.T., and Adeoye, L.S. (2022). Digital Finance and Business Performance in Emerging Markets, Journal of Emerging Market Studies, Vol. 17, Issue 4, pp. 92-120.
15. Okeke C.O (2021). Effect of Management Information System on Organizational Performance In Manufacturing Firms. Research Journal of Management Practice | ISSN: 2782-7674 Vol. 1, Issue 10 (October, 2021) | www.ijaar.org
16. Olaniyan, J.B., and Akinbode, M.O. (2023). Fintech Innovations and Financial Accessibility in Sub-Saharan Africa, African Journal of Business and Finance, Vol. 19, Issue 5, pp. 67-94.
17. Savitz, A.W., and Weber, K**.** (2006). *The Triple Bottom Line: How Today's Best-Run Companies Are Achieving Economic, Social and Environmental Success – And How You Can Too.*Jossey-Bass, San Francisco, CA.
18. Sekaran, U., and Bougie, R. (2016). *Research Methods for Business: A Skill-Building Approach.*7th Edition, John Wiley & Sons, West Sussex.