

MATERIALS RECYCLING AND PERFORMANCE OF TABLE WATER PROCESSING COMPANIES IN RIVERS STATE

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Abstract

This study investigated the relationship between materials recycling and performance of Table water processing companies in Rivers State, using customer patronage and customer retention as measures of performance. A correlational research design was adopted. The population of the study comprised 108 Table water processing companies. The Taro Yemen formula was used to derive a sample size of 85 companies. 255 management level staff were selected on a sample frame of 3 staff from each of the companies to provide data for the study. A 5-point likert-scale questionnaire was used to collect data. 255 copies of the questionnaire were administered to respondents, out of which, 200 copies were used in the final analyses. This represents 98% response rate. The Pearson Product Moment Correlation was used to test the direction and strength of correlation between materials recycling and measures of organizational performance. The results showed that materials recycling has a moderate positive and significant relationship with customer patronage and a strong positive and significant relationship with customer retention. Therefore, the study concludes that materials recycling significantly relates to performance of Table water processing companies in Rivers State; and recommends that management of Table water companies should adopt materials recycling as a strategic approach to achieving customer patronage and customer retention, hence organizational performance.

Keywords: Customer patronage, customer retention, materials recycling, organizational performance.

Introduction

A key challenge of researchers in organizational studies has always been to explain why some companies flourish where others fail. Harcourt and Ateke (2018) contends that firms fail too often, and a good number of firms do not survive past five years, while Lengnick-Hall et al. (2022) states that companies require entrenched adaptability and constructive ways of facing the future to escape extinction. This means that ability to adapt to emerging conditions and exploiting prevailing opportunities is key to survival for companies.

Ebenuwa (2022) provides that long-term survival and sustainability is a feat sought by businesses. Yet explanations for performance differentials of firms has been an area of contested claims among business practitioners and scholars alike (Cyfert et al., 2021). Organizational performance is essential to businesses and society. Thus, managers of firms are continually challenged understand factors that influence performance and to take initiate actions to acquire them.

Extant literature has consistently mentioned reverse logistics practices as an essential response to emerging environmental concerns and as key to achieving superior performance. To this effect, prior research has probed reverse logistics practices and how they affect different aspects of business performance. For instance, Karlsson et al. (2023) examined returns management strategies and environmental performance, Bohdan (2018) investigated green and reverse logistics as determinants of environmental sustainability; while David and Shalle (2014) assessed effects of reverse logistics on supply chain performance.

However, these studies do not provide adequate knowledge for managers in the Nigerian context on how reverse logistics practices affects business performance, as most of them are foreign and

conducted to explain outcomes, other than organizational performance. In order to close this apparent gap in literature, this study examined the correlation between materials recycling and performance of Table Water processing companies in Rivers State.

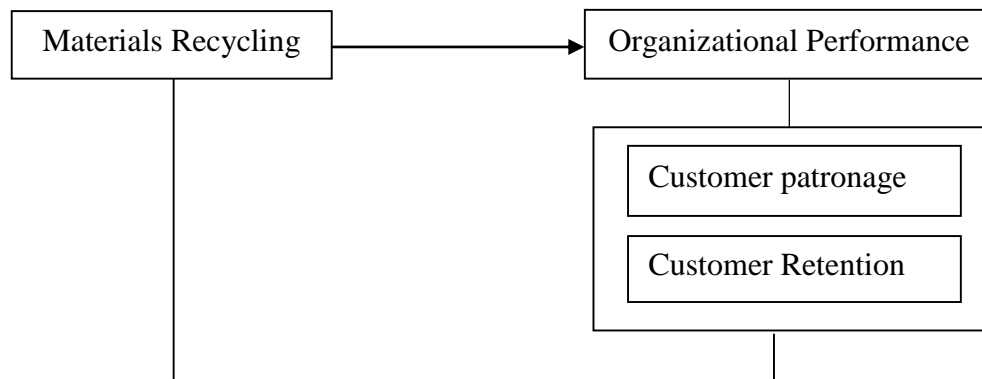


Fig. 1: Conceptual Framework of relationship between materials recycling and organizational performance

Materials Recycling

The amount of waste generated by industrial activities has increasing exponentially, and this raised concerns and calls for action (Srinivasu, 2014). One the ways companies respond to this challenge is by recycling materials to derive further value from them, and reduce their harmful impact on the environment. Materials recycling is describe recovery operation by which waste materials are reprocessed into products or materials for further economic use or proper disposal. It includes reprocessing organic material use as fuels or for backfilling operations (Day & Arnold, 1998).

Materials recycling reduce the amount of waste that ends up in landfill sites and decreases the amount of material needed from the natural environment. Materials recycling is also important due the fact that it decreases imports, as it provides industries with supplies recovered from waste like paper, glass, plastic as well as valuable metals from used electronic appliances (Tibben-Lembke, 2002).

The effectiveness of materials recycling is measured by recycling efficiency: decrease in recycling time, recycling standards, and recycling procedures. These parameter gauge savings in cost and time, and waste from errors and carelessness in recycling processes. Decrease in utility usage during recycling, that is power, water and gas consumption during recycling is also used to measure recycling effectiveness. Also, the efficiency of shredders and dismantlers are import indicators of recycling effectiveness. They are key attributes of recycling process that determine how effective a firm is, in its efforts to recycle materials.

Reduced emission and waste generation are also results of materials recycling. So, for recycling to be considered effective, it must be associated with waste and cost reduction (Litman & Burwell, 2006). Ultimately, recycling should lead to eco-sustainability and improved organizational reputation that results in superior performance.

Concept of Organizational Performance

Organizational performance describes the health of a firm as an outcome of management processes measured against nominated goals or compared to the health of competing firms (Ateke & Kalu,

as cited 2016 in Ateke & Simeon, 2018). Performance as a sweeping meter that encompass productivity and quality, and connotes how well an entity realizes its goals by deploying available resources. Performance has been a central issue in businesses and remains a vital concern for organizations. It is elusive and challenging to manage in the sense that businesses have continually searched unsuccessfully for certain and reliable signs by which performance can be judged.

Firms adopt different performance measures to suit their purpose. However, researchers prefer to measure performance objectively, using financial and non-financial indices. This is because composite measures provides holistic view of performance (Richard et al., 2009). Organizational performance may be classed into operational and financial measures. Operational measures include market share, product quality and marketing effectiveness; while financial measures include stock price, dividend pay-out and earnings per share, return on assets and return on equity (Terblanche et al., 2013; Fauzi et al., 2010).

Thus, organizational performance may be viewed as a set of financial and non-financial indicators that shows the level of success and the degree of achievement of objectives and results (Ateke & Kalu, as cited 2016 in Ateke & Simeon, 2018). It is the achievement of an organization and contains within a given timeframe and available resources. The ability of an enterprise to achieve high profit, quality product, large market share, good financial results and survive, using relevant strategy is core of organizational performance.

Consequently, organizational performance is a reflection of productivity of members of an enterprise measured in terms of revenue, profit, growth, development and expansion of the organization (Chandrasekar, 2011). It can also be gauged by product quality, customer satisfaction, market performance, service innovation, and employee that organization performance (Razaee et al., 2019).

The foregoing renditions betray organization performance as a relative and multi-faceted concept. It is an abstract concept that is not easy to measure directly. Firms therefore select indirect indices to represent it (Ateke & Simeon, 2018). Also, firms in different contexts and at different levels of development may prefer different metrics of performance. Also, operating philosophy may influence the indices of performance favoured by a firm. In this study however, we adopt customer patronage and customer retention to measure organizational performance. This is in line with Razaee et al. (2019).

Customer patronage

Delivering customer satisfaction is the primary focus of firms that seek sustained customer patronage in today's highly competitive marketing environment (Nwiepe & Ateke, 2016). Studies suggest that terminal values, lifestyles, social class, media habits and values are key determinants of patronage (Babin & Darden, 1996, as cited in Nwulu & Asiegbu, 2015). As a concept customer patronage is viewed as consumers' commitment to buy or use the product consistently in order to derive the benefits it offers.

Oluwalokun and Ikegwuru (2023) states that consumers patronize a company based on their perception of the company; while customer patronage may be informed to a company's outstanding products, it is also influenced by social, cultural and economic factors (Shim & Kotsiopolus, 1993, as cited in Nwiepe & Ateke, 2016). Consumer patronage may be viewed from three perspectives:

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unplanned buying, partially planned buying and fully planned buying (Engel et al., 1995); and measured through patronage intention, patronage action and repeat patronage (Nwulu & Asiegbu, 2015).

Initial patronage may be influenced by product quality, as well as social, cultural and economic factors, but continued patronage is a product of perceived value or benefits provided by a product. This suggests that Customers spend money with a company if they perceive that they would benefit from purchasing its goods and services.

Customer retention

Customer retention according to Jensen et al. (2019) is customer's commitment to remain in a relationship with a firm and its offerings over time, and expressed through repeat purchases. It is customer's stated continuation of a business relationship with the firm. Successful customer retention starts with the first contact an organization has with a customer and continues throughout the entire lifetime of a relationship (Ateke, 2015). Customer retention is key to a firm's strategic advantage and survive in today's ever increasing competitive environment. It is thus important to understand factors that impact customer retention.

Competitors continuously lookout to lure customers through better deals (Iruka & Ateke, 2014). Hence, firms must invest in effort to retain existing customers. This is because customer retention directly influence customer lifetime value, which is a more lucrative path for companies that seek growth and sustainability or protect themselves from market contraction ensuing from a constricting economy (Iruka & Ateke, 2014). Customer retention is therefore, significant when loyalty is declining and sales cycles are infuriating the business setting.

Materials Recycling and Organizational Performance

Prenovitz et al. (2023) posits that increase in economic freedom have positive effect on recycling rates, independent of related policy effects. But, inefficiencies associated with bureaucracies often discourage materials recycling. So, increases in economic freedom increases rate of materials recycling. Ben-Amor and Hammam (2022) identify cost of waste disposal, existence of waste collection centers and population density as key determinants of materials.

John-Mark (2021) examined the connection between awareness of environmental consumption, waste recycling and its relationship to academic performance of selected college students. The found that college students "often" observe different environmental consumption and waste recycling schemes in school. Also, the study showed a weak positive relationship between environmental consumption, waste recycling, and academic performance. The study concluded by acknowledging that college students practice appropriate environmental consumption and waste recycling.

Wilcox (2014) studied attitudes and behaviors of college students towards recycling. The rest of the data does give a picture of college student attitudes which overall are positive. This study is an excellent starting point for future studies of college student attitudes about recycling. It provides a framework on which more in-depth examinations of factors influencing positive behaviors and attitudes can build.

Lamba et al. (2022) reviewed literature on recycling/reuse of plastic waste as construction material for sustainable development. The study found that the inclusion of plastic waste as a binder, aggregate, fine aggregate, modifier or substitute of cement and sand in the manufacturing of bricks, tiles, concrete and roads has a significant effect on the sustainability of the environment. Also, the influence of the addition of plastic waste on strength properties, water absorption, durability was found to be significant. Also, Barasin (2020) studied the impact of materials recycling and marketing effectiveness of food and beverage firms in Nigeria, and revealed that materials recycling has positive and significant relationship with marketing effectiveness.

Based on the review above, the following hypotheses were formulated:

H03: Materials recycling does not significantly relate with customer patronage of Table water bottling companies in River State.

H04: Materials recycling does not significantly relate with customer retention of Table water bottling companies in River State.

Methodology

This study adopted a descriptive research design. The population of the study comprise 108 Table water bottling companies in Rivers. The study used the Taro Yemane formula for sample size determination of compute a sample size of 85 companies. 255 management staff were drawn from the 85 companies on a sample frame of 3 staff per company, though only data provided by 200 respondents were used in the final analyses. Structured questionnaire was used to collect primary data from the respondents. The validity of the questionnaire was determined by subjecting it to the opinion of experts, while its reliability was ascertained by subjecting it to Cronbach's Alpha test of reliability, with a threshold of .70. Table 1 presents a summary of the results of test of reliability.

Table 1: Summary of Results of Test of Reliability

S/N	Item	Number of Items	Cronbach's alpha
1.	Materials Recycling	3	.742
2.	Customer Patronage	3	.761
3.	Customer Retention	3	.774

Source: SPSS 22.0 Output (based on 2024 field survey data).

Table 1 summarizes the reliability result of materials recycling and measures of organizational performance (customer patronage and customer retention). The results showed that all items are reliable, being above the threshold of .70.

The direction and intensity of correlation between materials recycling and measures of organizational performance was tested using Pearson Product Moment Correlation (PPMC). The software used for this analysis was the Statistical Package for Social Sciences (SPSS) version 22.0.

Results and Interpretation

Table 2: Correlation between Materials Recycling and Customer Patronage

		Materials Recycling	Customer Patronage
Materials Recycling	Pearson Correlation	1	.521**
	Sig. (2-tailed)		.000
	N	200	200
Customer Patronage	Pearson Correlation	.521**	1
	Sig. (2-tailed)	.000	
	N	200	200

** . Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS 22.0 Output (based on 2024 field survey data).

As can be seen in Table 2, materials recycling and customer patronage has a correlation coefficient of .521**. The moderate value indicates that a moderate relationship exists between materials recycling and customer patronage. The positive sign of the correlation coefficient indicates that increase in materials recycling will result to increase in customer patronage, while the probability value of .000 produced by the test, and which is lower than the critical value of .05 suggests that the relationship between materials recycling and customer patronage is statistically significant. Thus, the null hypothesis that materials recycling does not significantly relate to customer patronage of Table water processing companies in Rivers State is rejected.

Table 3: Correlation between Materials Recycling and Customer Retention

		Materials Recycling	Customer Retention
Materials Recycling	Pearson Correlation	1	.630**
	Sig. (2-tailed)		.000
	N	200	200
Customer Retention	Pearson Correlation	.630**	1
	Sig. (2-tailed)	.000	
	N	200	200

** . Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS 22.0 Output (based on 2024 field survey data).

Table 2 shows that the correlation coefficient between materials recycling and customer retention is .630**. The high value suggests that a strong relationship exists between materials recycling and customer retention. The sign of the correlation coefficient is positive indicating that increase in materials recycling will result in increase in customer retention, while the probability value of .000 produced by the test, and which is lower than the critical value of .05 suggests that the relationship between materials recycling and customer retention is statistically significant. Thus, the null hypothesis that materials recycling does not significantly relate to customer retention of Table water processing companies in Rivers State is rejected.

Discussion of Findings

The relationship between materials recycling and customer performance of Table water processing companies in Rivers State was examined in this study. The results of data analyses revealed that materials recycling relates to performance of Table water processing companies, measured as customer patronage and customer retention. These results explicate the relevance of materials recycling to Table water processing companies in Rivers State. The implication of the results is

that materials recycling can be leveraged by Table water processing companies in Rivers State improve their performance.

The findings of the study support the view that firms involved in materials recycling cut costs of doing business by lowering materials acquisition costs (Prenovitz et al., 2023). The findings also validate the report by Mark (2021) that college students observe different environmental consumption and waste recycling schemes, and that a weak positive relationship exists between environmental consumption, waste recycling and academic performance.

Relatedly, the findings validate the arguments that inclusion of plastic waste as a binder, aggregate, fine aggregate, modifier or substitute of cement and sand in the manufacturing of bricks, tiles, concrete and roads has a significant effect on eco-sustainability (Lamba et al., 2022), and that the influence of the addition of plastic waste on strength properties, water absorption and durability is significant (Wilcox, 2014). Also, the findings corroborate the report of Barasin (2020) that materials recycling has positive significant relationship with marketing effectiveness.

Conclusion and Recommendations

This study probed the relationship between materials recycling and customer performance of Table water processing companies in Rivers State. The statistical analyses conducted in the study reveal that materials recycling has moderate positive and statistically significant correlation with customer patronage, and a strong positive and statistically significant correlation with customer retention. These results advance the importance of materials recycling to performance of Table water processing companies, and highlights that materials recycling is pivotal to the performance of table water processing companies in Rivers State.

The study concludes that materials recycling determine customer patronage and customer retention of Table water processing companies in Rivers State; and that performance of Table water processing companies measured as customer patronage and customer retention largely depend on materials recycling. The study therefore recommends that managers of Table water processing companies in Rivers State that seek increased customer patronage and retention should engage in, and improve their materials recycling capacity.

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