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RECYCLING SUSTAINABILITY ON ORGANIZATIONAL PERFORMANCE OF PUBLISHING FIRMS: A SURVEY-BASED APPROACH

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Abstract
This is an empirical study focusing on the impact of recycling sustainability on Nigeria's performance. To achieve the goals of this study, samples from 10 publishers in four major cities in Delta were taken. These cities include Asaba, Warri, Sapele and Obara. Given that Nigeria is a regional publishing centre in West Africa and newspaper publications are sold throughout the region, Nigeria's educational book publishers also dominate the regional market. The industry accounts for about 10% of GDP and is one of the fastest-growing companies in the manufacturing industry. Unfortunately, Nigeria does not produce most of the raw materials for the release. All paper materials used in Nigeria are imported, reducing the reliability of sources and increasing costs. In addition, the Nigerian publishing industry faces a high percentage of waste and returns. This study focused on the impact of recycling sustainability adoption as a possible solution to lower raw material costs, higher costs and higher response rates. We used a stratified random sampling approach and a descriptive study design. The survey was distributed as a data collection tool, which was pre-tested and informed about the design and layout of the survey before the final test began. To test the hypothesis, we conducted data analysis and expressed results and recommendations for solving the research agenda. The results show that if recycling sustainability is adopted and implemented in Nigeria, it will have a positive and significant impact on organizational performance.

Keywords: *Recycling, Sustainability, Effectiveness, Organizational Performance, Publishing Firms.*
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1. Introduction

Due to resource constraints and environmental concerns, sustainable asset management and pollution have become one of the world's most important challenges. Overall economic development may not be "closely linked" to pollution reduction and sustainable use of resources (Wang & Song, 2017). Balancing between high resource consumption and the development of economic relics is an ongoing challenge that forces organizations to engage in

environmentally friendly professional activities of high economic value (Cheng & Lee, 2017). Many organizations are forced to adopt activities that create and enhance economic value (Li & Olorunniwo, 2018). Overfishing of non-renewable resources caused by rapid economic development has destroyed the atmosphere and caused various environmental problems (Atlin and Gibson, 2017). To save energy and reduce carbon emissions, many countries have established environmental sustainability and protection agencies and regulations. Examples include restrictions on "Chlorofluorocarbons, Announcements on Sustainable Development of the Johannesburg World Summit" and restrictions on the use of some dangerous goods "Requirements for Electrical and Electronic Equipment, European Union Hazardous Substances Control Directive" (Weng et. There al., 2015,). .. Enforcement of such rules and regulations has attracted the attention of environmental supervisors (Zhu, Feng & Choi, 2017). The same result can be achieved by changing management and competitive practices between organizations (Feng & Chen, 2018). Organizations need to adopt green practices to comply with new green regulations, have a positive brand image (Chen, 2018), improve corporate performance and gain a competitive advantage (Rusinko, 2017).

Many studies are investigating factors that are changing recycling sustainability practices, such as environmental regulations, ethics, legal systems, and supply chains (Feng & Chen, 2018; Gao, Tsai, Xue, Ren, Du, Chen). , 2018). The study also investigated increased awareness, publicity and pressure from stakeholders related to green environmental issues (Foo, 2018). In addition, the literature provides evidence to optimize pressure from society, customers, and government agencies to practice recycling sustainability. However, there is a lack of knowledge in the literature on the relationship between stakeholder pressures (competitive pressures, state pressures, and employee behaviour) on sustainability practices. Manufacturing is facing more pressure from stakeholders as it may be the sector with the highest waste generation (Chang, 2017). A single industry was investigated for sustainable recycling practices (El-Kassar and Singh, 2019; Govindan, Mardani, Zakuan, Saman, Hooker, 2019). This study bridges the gap in investigating these structures in the manufacturing and service industries to enrich the literature on existing recycling practices and stakeholder pressures. In addition, stakeholder pressure (customers) on GI in external logistics companies (Chu, Wang & Lai, 2019), express companies (Zhang, He, Shi, Hong, Bao & Xue, 2020) and manufacturing companies (Song, Yang), Zeng & Feng, 2020). These three studies focused on implementation issues and focused on the pressure of stakeholders in Pakistan's manufacturing and services industries, which are early-stage developing economies that adopt recycling sustainability

practices. Conducted in the context of China (Du, Khan, Shahbaz, Murad & Khan, 2020). Publishing plays an important role in disseminating news, information, entertainment and educational materials, but Duetal. (2020) discovered that the industry is one of the highest return rates. Arasa and K'Obonyo (2016) discovered that publishers are dealing with products with very short shelf life. It takes less than a day for newspapers and only one month for magazines. Even textbooks are used within a semester or year before a user lives long. This means that publishers have to spend enormous resources to obtain raw materials for continuous publishing. Gobbi (2016) agrees that the high cost and shortage of raw materials is a major challenge, especially for the publishing industry. This means that the industry has to deal with high costs in the short term, resulting in lower profit margins (Cheng, 2016).

Production was interrupted due to a declining source of raw materials. Innovative application of reverse supply chain strategies, including recycling, reuse, waste reduction, returns and waste resale, proposed by Klapolva (2017), improves publisher performance and sustains publications. May guarantee possible use.

In addition, previous studies have focused on manufacturing because it is one of the most important sources of waste that can upset the environment. Amid growing concerns about global pollution, the industry saves energy and resources, protects the green environment and maintains its sustainability (Chang, 2017) or individual industries (Lin & Ho, 2018). We are facing increasing pressure from our customers, society and government agencies.). It is useful to provide a general-purpose model for studying GI problems for both service and manufacturing companies. Therefore, this study used Stakeholder Theory (Atlin & Gibson, 2017) to support the study method. This theory was used to get an overview of a particular organization to study the impact of recycling sustainability practises on a company's performance. Therefore, in response to stakeholder pressure, this study aims to investigate the impact of recycling sustainability on performance.

Purpose

1. Explore the relationship between resource recycling and the cost-effectiveness of an organization
2. Explore the relationship between waste recycling and organizational economics
3. Determine if there is a significant link between resource recycling and business profitability
4. Determine if there is a significant link between waste recycling and organizational profitability

Hypotheses

The following research hypotheses were made for this study.

HO1: There is no significant relationship between resource recycling and organizational cost efficiency

HO2: There is no significant relationship between waste recycling and organizational efficiency

HO3: Resource recycling has nothing to do with the profitability of an organization

HO4: Waste recycling has no significant implications for organizational profitability

2. Review of related literature and Conceptual framework

Sustainable recycling for paper-based organizations

According to Howard (2016), the main raw material for papermaking is pulp fibre obtained from natural materials, mainly wood, through complex chemical processes. The production of this fibre is very energy consuming and many chemicals are used in the manufacturing process, which is very problematic from the viewpoint of environmental protection. A good alternative is to get pulp fibre from already manufactured paper. This process consumes much less energy and chemicals. Paper recycling is simply defined as the mechanical properties of secondary pulp, the chemical properties of fibres, the degree of polymerization of pulp polysaccharide components, mainly from cellulose, and when their supermolecular structure changes. It means repeating, crushing and drying. Morphological fibre structure, degree and degree of interference binding (eg cause) of the above changes, fibre ageing mainly occurs in paper recycling and papermaking during the drying process. With repeated use of secondary fibres, if any changes are irreversible, the deterioration of the fibres during recycling will require deliberate changes in the properties of the paper. The depth of change depends on the number of cycles and how the fibre is used. The main problem is the mechanical properties of the secondary pulp as recycling progresses, mainly the decrease in paper strength (Jahan 2016; Hubbe & Zhang2017). This reduction is the result of many changes that may or may not occur with secondary pulp during the recycling process. When recycled, the cell walls become keratinized and some pulp properties deteriorate. This is due to irreversible changes in cell structure during desiccation (Ding & Wang, 2017). The lower properties of recycled fibres compared to virgin fibres may be due to keratinization, but also the reduced hydrophobicity of the fibre surface during drying is due to the redistribution or transfer of resins and fatty acids

to the surface. It is the cause (Nazhad2015). Okayama (2018) observed a significant increase in the contact angle with water due to the inactivation of fibres during recycling. This process is called "irreversible keratinization".

Paper recycling protects the raw materials of natural wood, reduces the operating and capital costs of paper units, and reduces water consumption. Last but not least, this paper treatment contributes to environmental protection (for example, 1 ton of recycled paper can replace about 2.5 m3 of wood). An important issue in paper recycling is the impact of energy consumption during manufacturing. It takes energy to process used paper for the production of paper and paperboard. Energy is usually obtained from fossil fuels such as petroleum and coal. In contrast to the production of pulp based on fresh fibre, the processing of recycled paper does not result in heat surplus, so heat energy must be supplied to dry the web of paper. However, vigorous use of recycled paper reduces the need for fossil fuels and has a positive effect on the carbon dioxide balance and the greenhouse effect. In addition, fresh fibre-based pulp production requires the consumption of logs, which causes the emission of air pollutants, similar to the collection of used paper. To increase the utilization rate of paper, the optimum fibre flow model was developed, which is an interactive model that considers both the quality (age) of recycled paper recycling and environmental measures (Byström & Lönnstedt, 2015).

Sustainable Recycling and Environmental Value of Recycled Paper

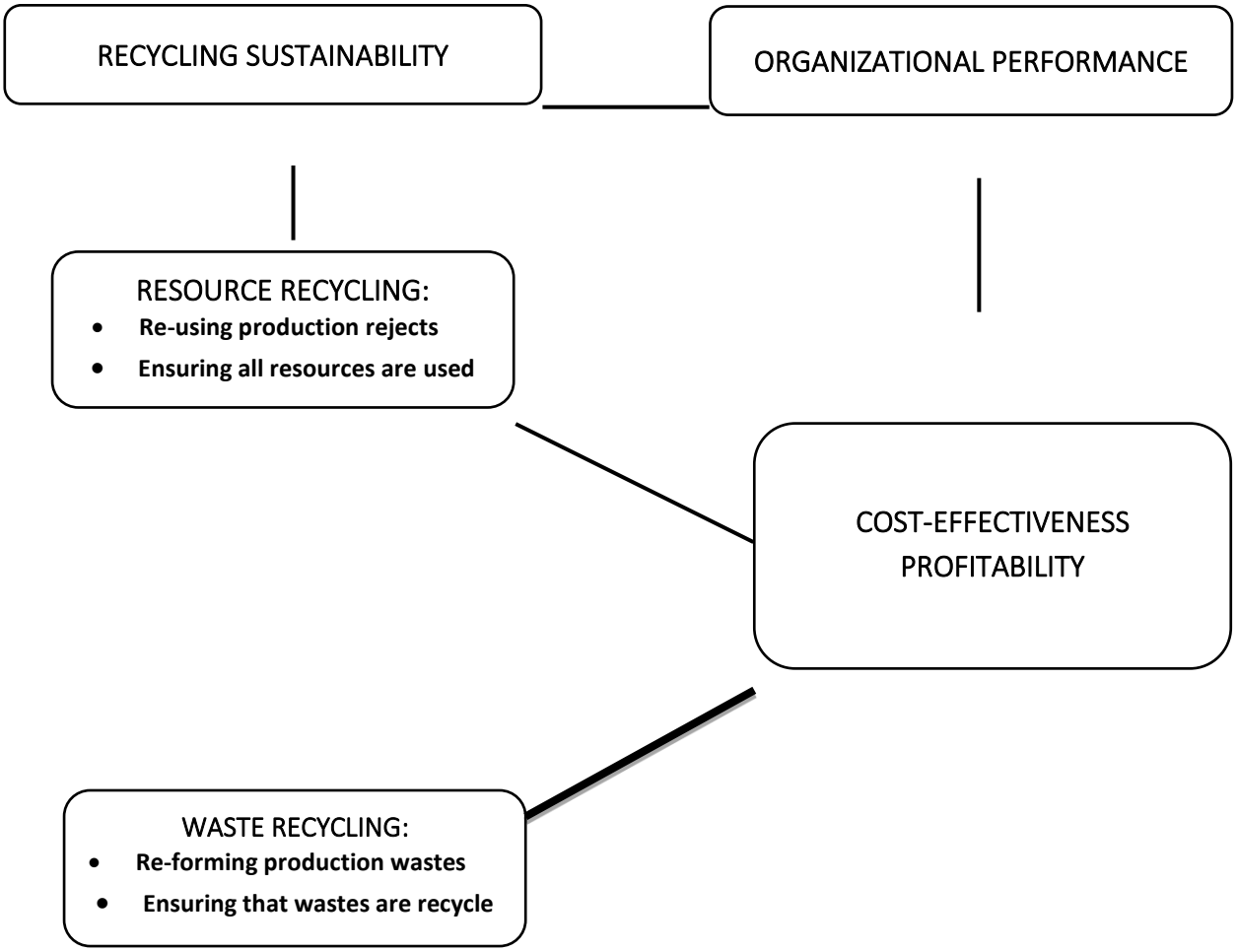
Paper is made from wood, and wood is made from the forest. Recycled paper is known as the "fourth forest" along with primaeval forests, natural forests and forests. Old newspapers, books, used magazine paper, office paper, kraft paper, cardboard boxes, and cardboard are valuable textile raw materials. Recycling renewable fibre raw materials can promote pulp reuse and improve pulp utilization. This also means increased paper production with the same amount of wood and reduced demand for high-strength logging in the pulp and paper industry, facilitating the realization of sustainable forest management (Wang, 2018). Manufacturing paper from recycled fibre raw materials can significantly reduce wood, water, electricity consumption, and pollutant emissions in the primary pulp process. By recycling 1 ton of recycled paper, we can produce 800 kg of recycled fibre raw material, saving 17 large trees and 3 m3 of landfill space. In addition, recycled fibre papermaking has lower energy consumption, environmental treatment costs, and raw material costs per unit, saving more than 50% on papermaking energy and reducing water pollution by 35%. As public awareness of cost control and environmental

protection grows, recycled paper fibre materials have become an essential source of raw materials for the paper industry (Zhang, 2018).

Organizational Performance Concepts

Organizational performance is related to the overall productivity of the organization in terms of inventory turnover, customers, profitability, and market share. The concept of organizational performance is central to the business, as the main goal of a business is to make a profit. Iravo, Ongori, and Munene (2018) say that one of the key questions in business is why some organizations succeed and others fail, and this is what drives performance. It says it is useful. Arasa and Obonyo (2016) see performance as a formula for assessing how an organization works under certain parameters such as productivity, employee morale, and effectiveness. Owolabi and Makinde (2015) commented that managing and improving performance is central to strategic management, as much of the strategic thinking is focused on defining and measuring performance. Lawal, Elizabeth, and Oldayo (2017) argue that for an organization to succeed, it needs to record high returns and identify performance drivers from top to bottom. Njagi (2016) identified three approaches to organizational performance: goal approaches that show that an organization pursues identifiable goals. This approach describes performance in terms of achieving these goals. The second approach is the system resource approach. It defines performance as the relationship between an organization and its environment. This concept defines performance according to the organization's ability to protect limited and valuable resources in the environment. The third approach is the process perspective. It defines performance in terms of the behaviour of the people in your organization. Organizational performance is a measure of effectiveness, efficiency, and standards or mandated indicators of environmental responsibility such as cycle time, productivity, waste reduction, and regulatory compliance. Performance also refers to metrics related to how a particular request is handled or performed. To make something successful. Use knowledge, not just own it.

Conceptual Framework of the Relationship between Recycling Sustainability and Organizational Performance



Source: Author's Conceptual Framework, 2022

3. Theoretical framework

Transaction Cost Economics

This study was anchored on Transaction Cost Economics (TCE) interwoven with a Resource-based view and Reverse Supply chain theories. The TCE specifies that the conditions under which a company manages economic exchanges within its boundaries or externally through arrangements between organizations focus on minimizing the overall transaction costs for producing and distributing a particular product or service. According to Srivastava (2016), the external (or macro) environment includes inputs (pointing to suppliers), regulations (pointing to interested aggregators such as governments and lobby groups), outputs (pointing to buyers),

and competition (pointing to buyers). Includes four sectors (pointing to). To competitors). The internal environment consists of strategic factors (strategic costs, overall quality, customer service, environmental issues, regulatory concerns, etc.) and operational factors such as recycling. The reverse supply chain strategy is aligned with TCE by maximizing the company's internal resources to remain competitive and profitable (Gobbi, 2018). Applying recycling sustainability, excellent return on investment (Gunasekaran, Patel & McCaughey, 2017), improved cycle time (Hult, KetchenJr & Slater, 2018) that improved marketing performance (Li, Ragu-Nathan, Ragu-Nathan), Rao, 2016), improved efficiency and effectiveness (Spekman, Kamauff Jr. & Myhr, 2016), and improved corporate financial performance compared to competitors. Corporate resources and capabilities include all financial, physical, human and organizational assets used by the company to develop products or services and deliver them to customers. These resources give companies a sustainable competitive advantage if they have the characteristics of value-added (valued), rare (rare), difficult to imitate, and non-tradable (restricted transfer). Similarly, Ngaji (2016) identifies a shortage of raw materials for publishing and overall cost savings for reverse supply chain strategies. RBV is also considering incorporating the reverse supply chain as part of the long-term business strategy of some large companies to achieve a sustainable competitive advantage where publishers who completed the application of recycling are more competitive in terms of both efficiency and profitability which makes this theory suitable for this study.

Empirical verification

Rogers and Tibben-Lembke (2017) observed that recycling accounts for about 4% of the total logistics cost of the publishing industry. In the retail and manufacturing industries, recycling accounts for an estimated 5-6 per cent of total logistics costs. Gobbi (2018) also adds restrictions on mandatory product recall laws, especially in Europe, where the law does not provide incentives.

Kange (2016) discusses the role of recycling in electronic waste management in East Africa, environmental sustainability, recovery of consumer economic prosperity and social value by individual companies, and corresponding waste management policies. Through market expansion, optimal use of assets, products or environmental benefits has been discovered as a result of recycling.

Rusinko (2017) offers another view that proposes reducing costs throughout the supply chain as an important contribution to recycling. For their part, Ellram, Tate and Carter (2016). Summarized the importance of recycling as a positive environmental impact, regulatory compliance increased competitiveness and improved customer service. Several recent types of research have also focused on barriers to the uptake of recycling sustainability. Rogers and

Tibben-Lembke (2017) identify the major obstacles to recycling compared to other issues. Recycling is not a priority within the company. Another obstacle is corporate policy, which can be motivated by fear of market cannibalism and the risk of brand damage. The company avoids implementing a return policy. This is shared by Fernandez (2016) who points out that the lack of a system for receiving incoming goods and advancing the selection of inspection, registration and collection options is still an obstacle. Another barrier by Rogers and Tibben-Lembke (2017) is the lack of attention to managing competitive issues. The human resources and resources needed to implement new systems and processes require investment in staff training and the use of resources.

Tools and materials

This study adopted a research design. The survey sample consisted of 10 publishing organizations spanning four major cities in Delta: Asaba, Warri, Sapele, and Oghara. The sample used in this study consisted of 200 employees working in these publishing organizations identified by expedient sampling methods. However, a questionnaire was distributed as a means of collecting data. The survey form contains four different measurements related to the survey variables. The 200 successfully submitted and retrieved questionnaires correspond to a 100% response rate. The least squares (OLS) multiple regression estimation method was usually used for data analysis.

Model Specification:

$$\mathbf{OrgC = \alpha_0 + \beta_1 ResRec + \beta_2 WasRec + \varepsilon_t} \qquad \textbf{(i)}$$

$$\mathbf{OrgP = \alpha_0 + \beta_1 ResRec + \beta_2 WasRec + \varepsilon_t} \qquad \textbf{(ii)}$$

Where:

OrgC: Organizational Cost Effectiveness
OrgP: Organizational Profitability

ResRec: Resource Recycling

WaRec: Waste Recycling

α_0: a constant, equals the value of Y when the value of X = 0

β: coefficient of the independent variables

ε_i: the error term

4. Outcomes and Discussion

Regression Results Presentation

Table 1: Regression Estimation for Model I

$OrgC = \alpha 0 + \beta 1 ResRec + \beta 2 WasRec + \varepsilon_i$ (i)		
Independent	***Resource Recycling and Organizational Profitability***	
variables	*OLS Summary*	
	Coeff.	***p-value***
Intercept	54.58422	0.0000
ResRec	0.428745	0.0411
Waseca	0.512366	0.0025
N	200	
Adjusted R-squared	0.812364	
F-test		0.045875

[a]*Significance at the level 5% level (two-tailed)*

Table 2: Regression Estimation for Model II

$OrgP = \alpha 0 + \beta 1ResRec + \beta 2WasRec + \varepsilon_i$ (ii)		
Independent	***Waste Recycling and Organizational Profitability***	
variables	*OLS Summary*	
	Coeff.	***p-value***
Intercept	0.352922	0.0000
ResRec	0.632596	0.0011
Waseca	0.120616	0.0076
N	200	
Adjusted R-squared	0.863547	
F-test		0.007497

[a]*Significance at the level 5% level (two-tailed)*

5. Discussion of Findings

The study found that recycling sustainability has a significant impact on the performance of Delta publishing organizations. Regression analysis of the relationship between recycling sustainability and organizational performance reveals positive coefficients and significant P-values, and recycling sustainability is measured by cost-effectiveness and profitability of the organization. It has been shown to have a positive and significant relationship with performance. A regression analysis of recycling sustainability for corporate performance revealed that resource recycling and waste recycling affect corporate performance, as shown in the regression results which was positively significant.

This result can be compared with the study by Rogers and Tibben-Lembke (2017). The study found that recycling has many strategic benefits, including reduced consumption of fresh raw materials, reduced energy consumption, and reduced air pollution. Kange (2016) also says that the recycling process helps reduce the amount of landfill waste, saves natural resources, saves energy, reduces greenhouse gas emissions and creates new jobs. Found to be beneficial for

many reasons. Recycled materials can also be converted into new reusable products such as paper, plastic and glass (Staurt et al, 2015). For individual companies, this means cost savings and new revenue streams that should improve profitability.

6. Conclusion and Recommendations

Following the results of this study, the results show that recycling sustainability has a positive and significant relationship to organizational performance. Therefore, given the results obtained and the literature reviewed, in this study, the sustainability of recycling through resource recycling and waste recycling is positively and significantly related to the cost efficiency of the organization and its performance of the organization. It is appropriate to conclude that there is.

Recommendations

Based on the above findings, the following recommendations are made in this study:

1. Entrepreneurs need to set up intermediaries that continue to promote sustainable recycling and leverage waste and revenue from mainstream publishers.
2. Publishers will adopt recycling as an investment to improve performance, thereby moving towards sustainable growth, one of the cornerstones of Nigeria's 2030 vision.

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