





The Effect of Employing Green Materials on the Business Performance of the Sustainable Retail Sector

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Abstract

There has been an increasing demand in the retail sector to become more environmentally sustainable in its operations. One crucial aspect of sustainable retail operations is green materials, which can lead to better business performance among firms in sustainable retailing. The quantitative approach was adopted in this study, whereby a structured questionnaire was administered to the respondents, who, in this case, were retailers in a specific sustainable retail environment. The population of this study comprises 200 retailers based in the sustainable retail sector who are using green materials for their supply chain packaging and manufacturing processes, such as Post Industry Recycled, biodegradable and organically oriented materials. This study will help develop strategies to incorporate green materials in business operations to benefit companies in a sustainable retailing business. The research shows that adopting environment friendly materials such as biodegradable and recyclable ones can make a company more profitable, preferred by customers, loyal to the customers and respond to their needs and promote their image to prewise customers who are green conscious. It entails that sustainable actors in the retail sector who incorporate green materials in their product designing and manufacturing processes are likely to snatch the sustainable market efficiently.

Keywords: *Sustainable Retailing; Environmental Impact; Operational Efficiency; Consumer Behavior*

INTRODUCTION

As people's understanding of environmental problems expands, the consumers' desire for sustainable products increases (Yunus & Rahman, 2014). At the same time, retailers operating in the sustainable sector have the opportunity to influence consumption patterns towards being more environmentally friendly by the adoption of retailing methods that include the use of green materials, for instance, recycled or degradable imperial which makes the business more attractive to the environmentally sensitive consumers (Sesini et al., 2020). As the importance of sustainability and consumer demand changes, such management of this sector has led to the development of environmental strategies by most companies in the sector to attract buyers (Camilleri et al., 2023). The products and actions that are classified as green marketing and greening of businesses have now become one of the strategies for building businesses' brand equity and competitive advantage within sustainable retail markets (Moravcikova et al., 2017).

Although the use of sustainable materials is believed to be an inevitable progression of the retail industry, the effect of this particular practice on the performance of the sustainable retail sector still lacks enough academic attention. This study intends to examine and explain the multiple dimensions of the use of green materials, such as those made of/contain recycle and/or biodegradable materials, to the business performance of companies in the sustainable retail business. By focusing on performance parameters such as profitability, customer satisfaction, loyalty, and operational efficiency, this research will demonstrate how using green materials will enhance the business prospects and competitive positioning of sustainable retailers.

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The purpose of this study is to investigate in detail how the use of green materials such as recycled or biodegradable materials affects various business performance formulas in the context of sustainable retail. It will also determine whether the use of green materials improves the bottom line, customer satisfaction and loyalty, and even the brand image among green consumers. Adopting a more nuanced approach to understanding these dimensions of green materials usage, the study will also explore their impact on business performance, profits, operational efficiencies, customer satisfaction levels and brand equity of businesses based on sustainable retailing.

LITERATURE REVIEW

From the literature, it can be seen that over the years, attention to environmental issues in the context of retailing has increased to the extent that it has been forced by competition as well as changes in the attitudes and choices of consumers when it comes to purchasing goods (Naidoo & Gasparatos, 2018). Both customers and retailers have gradually adapted to using green materials during product design and production processes as one of the core drivers that can satisfy their shifting market demand and enhance their eco-friendly image (Jones et al., 2014; Ottman, 1992).

One research on the green branding concept states that the application of environmentally friendly solutions, like the usage of green materials, can enhance the firm brand equity and positively influence consumer behaviour (Sohail, 2017). The authors claim that the sustenance of the brand can attract potential customers concerned about the environment, thus providing the firm with strategic leverage (Lin et al., 2021). It implies that the retailers who use green materials during the designing stage and also during the manufacturing stage of the products can utilize this as a strategic benefit as it helps to target the rise of eco-friendly consumers and stand out from the rest of the competition in the green retail market (Smith, 2012).

There has also been evidence in studies in the area of green supply chain management and firm performance stating that better profits can be achieved through sustainable practices, such as using green materials (Allam et al., 2021). It is because of such merits as less expenditure due to lesser resource usage, better customer retention and brand perception, and the ability to charge high prices for green products (Lee et al., 2015). Green supply chains in the context of retail (Seman & Aslinda, 2012). Although there has been fragmentation of green supply chain management externally and internally, including usage of green materials, it has been witnessed to improve the firm's performance (Green et al., 2012). According to the ethics of the management of organizations, ethical leadership within the organization is also regarded as one of the necessary components of the successful realization of sustainable supply chain practices (Wang & Dai, 2018).

Studies about the use of biodegradable packaging and other eco-friendly materials in retail have proven beneficial for companies (Xin et al., 2019). The application of these green materials has also been associated with enhancing consumers' views of the brand's environmental and social accountability, leading to high customer satisfaction, brand trust and preparedness to pay extra for the products offered (Rusinko, 2007). The global consumer preferences are gradually changing where they look for brands that practice sustainability and seek to accommodate green materials which can be beneficial to the retailer's brand (Rizomyliotis et al., 2021). These customers become loyal to the sellers and are ready to pay a premium for green products, thus improving the company's revenue generation from financially sound customers (Mukonza & Swarts, 2020).

The available literature has established the benefits of using green materials in the retail industry. The potential aspects included improved profitability, brand image, customer satisfaction, and customer retention. This research seeks to assess the profitability, customer satisfaction, and operational productivity of businesses that use sustainable materials in their retail activities. Financial viability indicators will highlight the cost benefits of switching to green materials, whereas loyalty and satisfaction indices will demonstrate the level of adoption of green materials

and their effects on brand image and consumer participation (Tang et al., 2016). Moreover, strategies related to operational efficiency metrics would also highlight the cost and resource efficiency advantages achieved through the use of sustainable materials and methods (Tian et al., 2019). Focusing on these personnel efficiency measurable aspects will help to explain how utilization of green materials impacts the general business performance of sustainable retailers.

RESEARCH METHOD

The underpinning of this work is the concept of the triple bottom line orientation, which focuses on the non-financial performance of the organization as well as people, profit, and the planet (Peng, 2018). Emphasis on the Triple Bottom Line means that organizations do not focus only on monetary returns but seek to balance economic, social, and environmental returns in the long-term business outlook, hypothesis:

H1: The adoption of green/sustainable construction materials boosts the profitability of the business.

H2: The utilization of green products and materials helps enhance operational efficiency.

H3: The application of green materials will enhance consumer satisfaction.

H4: Eco-friendly materials help gain customers' loyalty.

H5: Eco-friendly materials will improve the competitiveness of the business.

The study utilized quantitative research to implement a detailed survey targeting several stores dealing with sustainable retailing. The survey instrument aimed at capturing critical business growth parameters which included metrics such as sales growth, enhanced margins, customer satisfaction, brand loyalty, and efficiency in operations. Such quantitative data was collected from the retailers themselves with the aim of understanding how eco-friendly material usage influences performance in certain areas of an organization.

The sample for this research is focused on 200 retailers in the sustainable retail sector who have undertaken green procurement strategies in the packaging and manufacturing of products, including the utilization of recyclable, compostable, or eco-friendly materials. We collected material and business performance data through structured questionnaires targeting material usage and business performance metrics. The dependence of the environmental design of a product on its business performance indicators was examined using structural equation modeling.

FINDINGS AND DISCUSSION

The participants in the survey included agents of retailing in the sustainable sector, independent retailers, large retailers operating with a national scope, and even pure e-tailers. In this region, most of the respondents' businesses (65%) were small to medium-sized enterprises with revenue measuring 50 million and below. Regarding the "green" motives, most of the retailers (82%) used environmentally friendly materials such as recycled and biodegradable or organic materials to pack and produce their products. Also, a good number (73%) of them had also embraced some other eco-friendly measures like energy saving usage, others being waste management and ethically sourcing of the materials.

The findings indicated a strong positive relationship between the use of green materials and profitability and consumer devotion ($p < 0.05$). Enterprises that have been using green materials in their activities raised a profit more, created higher customer satisfaction and secured more customer loyalty than those who have never practiced sustainable materials use. These findings indicate that green materials can be successfully used by business realtors, and this has a positive strategy measurement for business where finance performance, customer engagement practices,

and brand image are the metrics of assessment.

Table 1. Results of Validity and Reliability Tests

Variable	Cronbach's Alpha	Composite Reliability
Profitability	0.892	0.926
Operational Efficiency	0.867	0.907
Customer Satisfaction	0.912	0.937
Customer Loyalty	0.924	0.946
Competitiveness	0.879	0.917

The results of the validity and reliability tests performed earlier show that all the constructs have a Cronbach's Alpha of more than 0.8 and a Composite Reliability of more than 0.9 which signifies a significantly high level of internal consistency and reliability. The following table outlines the main results based upon numerous structural equation modeling analysis and results regarding these important figures:

Table 2. Structural Equation Modeling Results

Hypothesis	Path Coefficient	t-value	p-value	Remarks
H1: Green Materials -> Profitability	0.456	8.26	<0.001	Yes
H2: Green Materials -> Operational Efficiency	0.386	6.92	<0.001	Yes
H3: Green Materials -> Customer Satisfaction	0.512	9.84	<0.001	Yes
H4: Green Materials -> Customer Loyalty	0.576	11.72	<0.001	Yes
H5: Green Materials -> Competitiveness	0.529	10.23	<0.001	Yes

The structural equation modeling analysis provides strong support for the proposed hypotheses. The results indicate that embracing green/sustainable materials was found to have a positive effect on all five important measures of business performance – profit, operational efficiency, customer satisfaction, customer loyalty, and competitiveness. The path coefficients together with the t-values and the p-values reveal that the associations are significant and in excess of the $p < 0.001$ level, thereby fortifying the business case of eco-friendly materials in the sustainable retail industry.

These results conform to the earlier evidence on the green supply chain practices advantages in the other sectors (Abdallah & Al-Ghwayeen, 2020). The reasons for improved business retail performance with respect to the green supply chain practice integration can be explained by ecologically friendly material usage leading to enhanced waste management practices and favorable brand attitude (Chin et al., 2015). Notably, the data also revealed a very strong correlation when customers were categorized according to contracts with the use of green materials and customer hearth. However, coordinated communication of marketing strategies and sustainable business practices are well appreciated by sustainability-oriented consumers who are well accustomed to fore and leash retailers' goods (Su et al., 2021). These consumers make it clear that if such retailers are available, they will provide loyalty, assistance in using the brand against competitors and higher pricing for the offered goods (Tsarenko et al., 2013). It also reiterates the need for retailers to consider integrating their product category, facilities, as well as their promotional communication with the changing trends and eco-friendly concerns of their consumer market.

This finding contributes to the knowledge of retailers as it suggests that they should ensure that their products, policies, and branding remain similar to the market needs that are changing. Increase in consumer preference for sustainable products can be translated to an advantage in the effectuality of the retailer in terms of eco-friendly materials promotion (Naidoo & Gasparatos, 2018). However, here is a paradox, believing that riding on green materials will help the company improve business performance is not very realistic (Rusinko, 2007). Retailers also need to look at other aspects related to the outer layer of their sustainability strategies and ensure these strategies encompass all layers of operational and value chain processes (Jones et al., 2013). A country's amount of eco-friendly materials requires special management of sourcing, logistics, and disposal/recycling to ensure greater environmental and economic effectiveness (Roy et al., 2020).

In contrast with other investigations that almost always emphasize on the environmental or social aspects of the green policies at the market retailing this study goes a step further and explores the more. The results allow retailers to formulate aggressive and pertinent data substantiated strategies for including sustainable materials and overcoming the barriers posed by insufficient management of this activity. Moreover, this study deals with the increasing volume of literature on the business case for sustainability, demonstrating tangible economic and competitive benefits that come with environmentally favorable actions.

CONCLUSIONS

The findings of this research confirm that the application of green materials in the sustainable retail industry is advantageous with respect to performance measures such as operational effectiveness, customer satisfaction, customer retention and customer competitiveness. Retailers are likely to make higher returns and achieve lasting sustainability through better resource allocation, less wastage and enhancing their reputation among environmentally conscious consumers by using eco friendly materials. Such results provide significant strategic recommendations to retailers who want to stand out from the crowd and meet the needs of increasingly eco friendly customers.

Using environment-friendly materials within the retail industry rewards an organization with better operational efficiency, offers better customer gratification, and increases market brand power in highly competitive areas. This allows them to sell about the products at a lower price such much lower than what they had offered before without making a loss. It also increases the overall performance and brand perception of the retailers in the eyes of the environmentally-conscious target market making them willing to pay more for their products. The multifaceted impact of adopting such materials and the example mentioned and a few expansions form a clear picture of the strategic benefits of the use of green materials to sustainable retailers in today's marketplace.

Through the existing literature addressing the social and environmental aspects of sustainability strategies in retail stores, one can observe that a large number of studies have been done yet only a few have physically evaluated how using eco-friendly materials performs directly to business expectations. This being one of the studies, addresses such an area and offer prove that efficient market exporters do realize the benefits gained direct from the use of green materials in the composition and activity of trading in the retail products.

LIMITATION & FURTHER RESEARCH

This study provides information that is useful and ideas which can guide further studies. The findings emphasise the competitive benefits that retail businesses, or those that practice sustainable retailing, can achieve through the development and use of green products. Future research could look more at what precisely on the business performance relates to the sustainable material employment and how these positive phenomena can spread to other areas and locations

within the retail hierarchy.

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