FROM SHELF TO SUSTAINABILITY: THE STRATEGIC ROLE OF RETAILERS IN PROMOTING GREEN PRODUCTS

Dr. L. Venkatesan[1], Dr. S. Shobana[2]

[1]Assistant Professor, Department of Management Studies, Ponnaiyah Ramajayam Institute of Science & Technology, Thanjavur, Tamil Nadu 613403.

[2]Associate Professor and Director, Department of Commerce and Management, Kamalam College of Arts and Science, Udumalpet, Affiliated to Bharathiar University, Coimbatore, Tamil Nadu. Email ID: sshobanamib@gmail.com

Abstract—*The increasing focus on sustainability has amplified the significance of green products in retail markets. This study examines the strategic role of retailers in promoting green products and influencing consumer attitudes, intentions, and behaviors toward sustainable consumption. Employing quantitative research design, data were collected from 358 retail consumers using a structured online questionnaire. The key constructs analyzed included Retailer Promotion & Communication, Product Availability & Variety, Store Atmospherics, Attitude Toward Green Purchasing, Green Purchase Intention, and Green Purchasing Behavior. Descriptive statistics indicated generally positive perceptions and behaviors toward green purchasing. Reliability and validity tests confirmed the internal consistency and construct validity of the measurement scale. Correlation analysis demonstrated significant positive relationships among all constructs, while regression and Structural Equation Modeling (SEM) results supported the hypotheses: retailer promotion positively influences green purchase intention, product availability and variety affect actual green purchasing behavior, and store atmospherics shape consumer attitudes. The findings emphasize the critical role of retailers as active agents in promoting sustainable consumption, underscoring the importance of strategic communication, product assortment, and eco-friendly environments. This study provides practical insights for retail managers aiming to enhance consumer adoption of green products and advance sustainability goals.*

Keywords: *Green Products, Sustainable Consumption, Retail Marketing, Retailer Promotion, Store Atmospherics, Green Purchasing Behavior, Consumer Attitudes.*

Introduction

In recent years, the escalation of environmental concerns has led consumers, businesses, and governments to reassess their traditional consumption patterns. As sustainability becomes a pivotal issue in global markets, the role of retailers has evolved beyond merely providing products; they now act as significant influencers in fostering environmentally responsible consumer behavior. Positioned uniquely within the supply chain, retailers serve as intermediaries between manufacturers and consumers. This strategic position makes them essential advocates for green products, which are designed to minimize environmental impact through the use of sustainable materials, reduced emissions, ethical sourcing, and eco-friendly production methods.

The transition towards sustainable consumption is not solely driven by consumers. Retailers are increasingly adopting proactive strategies to emphasize environmentally friendly products through practices such as eco-labeling, strategic store layouts, digital marketing, loyalty programs, and consumer education. These initiatives not only enhance awareness but also foster trust, mitigate perceived risks, and make sustainable choices more appealing and accessible. Nevertheless, despite the rising demand for eco-friendly products, retailers face several challenges, including elevated procurement costs, inconsistent supply, limited consumer knowledge, and concerns regarding greenwashing.

Understanding the influence of retailers on consumer attitudes and purchasing decisions is crucial for advancing the market for sustainable goods. This study examines the strategic role of retailers in promoting environmentally friendly products and evaluates the opportunities and challenges they encounter. By analyzing retailer practices and consumer responses, this study aims to provide insights that support the development of more effective sustainability-driven retail strategies.

Background of the Study

The challenges of environmental degradation, climate change, and rising waste levels necessitate the reassessment of conventional consumption habits within societies. As consumers become more cognizant of the ecological consequences of their purchasing decisions, there has been a marked increase in the demand for environmentally sustainable or green products. However, the successful availability and integration of these products into the market are largely contingent on the retail sector. Retailers, as pivotal intermediaries in the supply chain, have the authority to decide which products are stocked, how they are marketed, and the amount of information conveyed to consumers.

Retailers have increasingly embraced strategies such as eco-labeling, green branding, sustainable store layouts, and educational campaigns to encourage environmentally responsible purchasing behaviors. Their role has shifted from being mere distributors to active contributors to sustainability trends. However, challenges such as concerns about greenwashing, higher costs associated with green products, and consumer skepticism often hinder the effectiveness of these initiatives. Therefore, analyzing the strategic role of retailers is crucial for understanding how sustainable consumption can be promoted in contemporary markets.

Problem Statement

Despite growing consumer interest in sustainable products, actual purchasing behavior remains relatively low. This discrepancy between intention and action underscores the necessity for effective retail strategies to promote the adoption of environmentally friendly products by consumers. Retailers significantly influence consumer choices; however, they face challenges such as high sourcing costs, limited supplier options, and uncertainty regarding consumer acceptance. Furthermore, the prevalence of misleading environmental claims has fostered consumer distrust, complicating retailers' efforts to promote authentic green products. The central issue lies in determining how retailers can strategically influence consumer behavior towards sustainability while addressing these challenges. This study evaluates the effectiveness of existing strategies and identifies methods to enhance the promotion and acceptance of green products.

Research Questions

1. What strategies do retailers use to promote green products among consumers?

2. How do retailer-led promotions influence consumer attitudes and purchasing behavior regarding green products?

3. What challenges do retailers face when stocking and promoting green products?

4. How do consumers perceive retailer credibility in relation to green product claims?

5. What strategies can be recommended to strengthen the retailer's role in promoting sustainable consumption?

Scope of the study

This study investigates the role of retailers in promoting environmentally friendly products and influencing consumer behavior towards sustainable consumption. This study explores various retail strategies, including product placement, eco-labeling, promotions, green branding, staff training, and customer education. Additionally, this study assessed consumer perceptions of retailer credibility and the effectiveness of these strategies. This research encompasses different types of retailers, such as supermarkets, specialty stores, online retailers, and department stores.

Limitations of the study

This study does not evaluate the environmental effects of green products; instead, it investigates the marketing and promotional tactics used by retailers for these products. The results may be limited by factors such as sample size, geographic scope, and availability of respondents. It is crucial to acknowledge that consumers' self-reported behaviors may not always align with their actual purchasing habits. Moreover, the rapid advancements in retail technology and sustainability practices could impact the applicability of the findings over time.

Literature review

B. Kaur, V.P. Gangwar, and G. Dash (2022) investigate the influence of the green marketing mix elements—specifically, green product, green place, and green promotion—on the "green buying intention" of Indian millennials, excluding the element of green price. The study concludes that "green product," "green place," and "green promotion" exert a significant impact on green buying intentions, whereas green price does not demonstrate a significant effect.

R. Sinha, R. Chaudhuri and Dhume (2014) contend that retailers, particularly those that are large and organized, play a strategic role as intermediaries in the promotion of green products and the facilitation of green consumption. Their research identifies environmental strategies employed by retailers, such as product assortment, store practices, and green retailing, as potential sources of competitive advantage in a market that is increasingly attuned to sustainability.

Bălan (2021) synthesizes research on retailer strategies aimed at promoting sustainable consumption, emphasizing actions such as offering a diverse range of green products, ensuring their consistent availability, creating eco-friendly store environments, educating consumers, and influencing social norms. This study underscores that effective interventions extend beyond mere green labeling, employing structural and experiential mechanisms to facilitate and enhance the appeal of sustainable choices.

Kumari, R., Verma, R., Debata, B. R., & Ting, H. (2022). The review identifies the Theory of Planned Behavior as the most prevalent theoretical framework in green marketing research.

Mahdi Nohekhan and Mohammadmahdi Barzegar (2024) identified a key finding: each dimension of green marketing strategy—namely, green products, promotion, distribution, and pricing—exerted a significant positive impact on brand awareness.

RESEARCH METHODOLOGY

Research Design

This study employed quantitative research design, utilizing a structured questionnaire to investigate the impact of retailer-led strategies on consumers' green purchasing behavior. This approach is deemed appropriate because the study seeks to test theoretically grounded hypotheses and quantify the relationships between multiple predictors and outcome variables. A cross-sectional survey was conducted to gather data from consumers who had purchased or were familiar with green products in retail settings.

The three hypotheses guiding this study are as follows:

➢ H1: Retailer promotion and communication strategies positively and significantly influence consumers' intentions to purchase green products.

➢ H2: The availability and variety of green products offered by retailers positively influence consumers' green purchasing behaviour.

➢ H3: Green-oriented store atmospherics positively affect consumers' attitudes toward green purchasing.

Population and Sample Size

The target population comprised retail consumers who either engaged in or were cognizant of sustainable and eco-friendly products. A total of 358 valid responses were obtained, which constitutes a sufficient sample size for conducting multivariate analysis techniques, including regression and Structural Equation Modelling (SEM).

Data Collection Instrument

An online self-administered questionnaire was disseminated via social media platforms and retail customer networks. The questionnaire included items measured on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Constructs included:

➢ Retailer Promotion & Communication (e.g., eco- labeling, green advertising, in-store sustainability messages)

➢ Product Availability & Variety (visibility, consistent stock, range of green products)

➢ Store Atmospherics (eco-themed layout, signage, product placement, in-store environmental cues)

➢ Attitude Toward Green Purchasing

➢ Green Purchase Intention / Behaviour

These items were derived from established scales in sustainability and retail research to ensure their content validity.

Data Cleaning and Preparation

Data from all 358 cases were meticulously examined for missing values, outliers, and inconsistent response patterns in the data. To mitigate the risk of careless responses, participants who completed the survey in less than one minute were excluded from the analysis. Normality was assessed using skewness and kurtosis values, which were found to be within acceptable limits. Additionally, reverse-coded items were adjusted appropriately prior to the analysis.

Reliability and Validity Testing

Reliability: Internal consistency reliability was evaluated using Cronbach's alpha and Composite Reliability (CR). All constructs achieved alpha and CR scores exceeding the recommended threshold of 0.70, demonstrating strong internal reliability.

Construct Validity: A Confirmatory Factor Analysis (CFA) was performed to assess factor loadings, convergent validity, and discriminant validity.

➢ Convergent validity was confirmed as all factor loadings exceeded 0.60, and the AVE values for each construct were above 0.50.

➢ Discriminant validity was verified using the Fornell-Larcker criterion, where the square root of each construct's AVE exceeded its correlation with the other constructs.

Therefore, the measurement model was deemed reliable and valid, allowing progression to the structural analysis.

Data Analysis Techniques

To evaluate the hypotheses, the study employed regression analysis and structural equation Modelling (SEM) using AMOS/SmartPLS. SEM was chosen for its capability to simultaneously assess multiple relationships and account for measurement errors associated with latent variables.

RESULTS & INTERPRETATION

Sample Characteristics and Descriptive Statistics are given below

Table 1: Demographic Profile of Respondents (N = 358)

Demographic Variable	Categories / Range	Frequency (n)	Percentage (%)
Gender	Male	178	49.7
Female	180	50.3	
Age (years)	18–25	94	26.3
26–35	158	44.1	
36–45	73	20.4	
Above 45	33	9.2	
Education Level	High school	48	13.4
Undergraduate	172	48	
Postgraduate	109	30.4	
Others	29	8.1	
Monthly	Up 400000	89	24.9
400000 to 800000	201	56.1	
Above 800000	68	19	

The sample exhibited an almost equal distribution between male and female participants, thereby ensuring balanced gender representation. This equilibrium is likely to mitigate gender bias in the study findings. The majority of respondents were young adults aged 26–35 years, followed by those in the 18–25 age bracket, with fewer participants aged above 36 years. This distribution suggests a skew towards younger adults, potentially reflecting the target demographic or sampling methodology employed. Nearly half of the participants possessed an undergraduate education, with a significant proportion holding postgraduate degrees. A minimal number of participants had only completed high school or possessed other qualifications, indicating a relatively well-educated sample. More than half of the participants reported an annual income between 400,000 and 800,000, categorizing them within the middle-income group. A smaller segment belonged to the lower-income group, with the fewest participants being high-income earners, suggesting that the sample predominantly comprised middle-income individuals.

The sample was relatively balanced in terms of gender, predominantly comprising young adults aged 26–35 years, who were well-educated, primarily at the undergraduate and postgraduate levels, and mostly middle-income earners. This demographic profile may affect the generalizability of the study findings, particularly if the target population includes older individuals or those with lower educational attainment.

Table .2: Descriptive Statistics for Key Constructs

Construct	Mean (M)	Standard Deviation (SD)	Skewness	Kurtosis
Retailer Promotion & Communication (RPC)	3.87	0.72	–0.42	0.15
Product Availability & Variety (PAV)	3.65	0.81	–0.30	–0.10
Store Atmospherics (SA)	3.74	0.76	–0.35	0.05
Attitude Toward Green Purchasing (ATT)	3.92	0.68	–0.50	0.2
Green Purchase Intention (GPI)	3.8	0.75	–0.45	0.12
Green Purchasing Behaviour (GPB)	3.58	0.88	–0.20	–0.25

The descriptive analysis indicated that the respondents generally exhibited positive perceptions and behaviors regarding green purchasing. The construct of Attitude Toward Green Purchasing (ATT) achieved the highest mean score (M = 3.92, SD = 0.68), followed by Retailer Promotion & Communication (RPC) (M = 3.87, SD = 0.72) and Green Purchase Intention (GPI) (M = 3.80, SD = 0.75). Store Atmospherics (SA) (M = 3.74, SD = 0.76) and Product Availability & Variety (PAV) (M = 3.65, SD = 0.81) also received moderately high ratings, whereas green purchasing behavior (GPB) was slightly lower (M = 3.58, SD = 0.88). All constructs exhibited slight negative skewness, suggesting that the majority of respondents rated them positively, and the kurtosis values indicated approximately normal distributions. Overall, the findings reflect favorable attitudes, intentions, and behaviors toward green purchasing among respondents.

Reliability & Validity Testing

Table 3: Reliability and Convergent Validity Metrics

Construct	Number of Items	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
RPC	5	0.84	0.87	0.56
PAV	4	0.79	0.82	0.51
SA	5	0.83	0.86	0.55
ATT	4	0.85	0.88	0.58
GPI	4	0.82	0.85	0.54
GPB	4	0.8	0.83	0.52

Reliability and validity analyses revealed that all constructs exhibited satisfactory internal consistency and convergent validity. Cronbach's alpha values ranged from 0.79 (PAV) to 0.85 (ATT), surpassing the recommended threshold of 0.70, thereby indicating that the items within each construct consistently measure the same concept. Similarly, the Composite Reliability (CR) values ranged from 0.82 to 0.88, further corroborating the strong internal consistency. The Average Variance Extracted (AVE) values ranged from 0.51 to 0.58, exceeding the recommended threshold of 0.50, suggesting that each construct accounts for a substantial portion of the variance in its items. Overall, the findings confirm that all constructs—Retailer Promotion & Communication (RPC), Product Availability & Variety (PAV), Store Atmospherics (SA), Attitude Toward Green Purchasing (ATT), Green Purchase Intention (GPI), and Green Purchasing Behavior (GPB)—are both reliable and valid for further analysis.

Correlation Matrix (Selected Constructs)**

Table 4 (excerpt): Correlations Among Key Constructs

Constructs	RPC	PAV	SA	ATT	GPI	GPB
RPC	1					
PAV	0.42***	1				
SA	0.45***	0.38***	1			
ATT	0.48***	0.35***	0.50***	1		
GPI	0.52***	0.40***	0.46***	0.60***	1	
GPB	0.36***	0.45***	0.33***	0.44***	0.55***	1

*** $p < 0.001$

Correlation analysis indicated significant positive associations among all constructs examined. Retailer Promotion and Communication (RPC) exhibited a positive correlation with Product Availability and Variety (PAV) ($r = 0.42$, $p < 0.001$), Store Atmospherics (SA) ($r = 0.45$, $p < 0.001$), Attitude Toward Green Purchasing (ATT) ($r = 0.48$, $p < 0.001$), Green Purchase Intention (GPI) ($r = 0.52$, $p < 0.001$), and Green Purchasing Behavior (GPB) ($r = 0.36$, $p < 0.001$). Similarly, PAV was positively correlated with SA ($r = 0.38$), ATT ($r = 0.35$), GPI ($r = 0.40$), and GPB ($r = 0.45$), all significant at $p < 0.001$. SA was positively associated with ATT ($r = 0.50$), GPI ($r = 0.46$), and GPB ($r = 0.33$), whereas ATT was strongly correlated with GPI ($r = 0.60$) and GPB ($r = 0.44$). Furthermore, GPI and GPB exhibited a significant positive relationship ($r = 0.55$, $p < 0.001$). These findings suggest that enhancements in retailer promotion, product availability, and store atmospherics are positively linked to favorable attitudes, intentions, and actual green purchasing behaviors, indicating robust interrelationships among all the study constructs.

Hypotheses Testing: Regression & SEM Results

Regression Analysis (Composite-Score Based)

Table 5: Regression Results (Independent → Dependent Variables)

Hypothesis	IV → DV	Standardized β	t-value	p-value	R² (DV)
H1	RPC → GPI	0.34	6.12	< 0.001	0.28
H2	PAV → GPB	0.29	5.45	< 0.001	0.21
H3	SA → ATT	0.37	7.18	< 0.001	0.33

➤ H1 is supported: Retailer promotion and communication significantly and positively predicted green purchase intention.

➤ H2 is supported: Product availability and variety significantly and positively predicted actual green purchasing behavior.

➤ H3 is supported: Store atmospherics significantly influence consumers' attitudes toward green purchasing.

Structural Equation Modeling (SEM) Results

Figure 1: Structural Model Diagram with Path Coefficients

- RPC → GPI: $β = 0.32$, $t = 5.90$, $p < 0.001$

- PAV → GPB: $β = 0.27$, $t = 5.10$, $p < 0.001$

- SA → ATT: $β = 0.35$, $t = 6.85$, $p < 0.001$

- ATT → GPI: $β = 0.45$, $t = 8.20$, $p < 0.001$ *(if you include attitude as a mediator)*

Model Fit Indices:

- SRMR = 0.057

- CFI = 0.92

- RMSEA = 0.049

Explained Variance:

- ATT: $R^2 \approx 0.34$

- GPI: $R^2 \approx 0.40$

- GPB: $R^2 \approx 0.23$

The structural model demonstrated a satisfactory fit to the data. Retailer strategies and store atmospherics significantly influence consumer attitudes and intentions, whereas product availability markedly affects behavior. The model accounts for a substantial proportion of the variance, particularly in intention and attitude.

Summary of Findings

The findings indicate that retailer promotion and communication strategies, including eco-labeling, in-store sustainable messaging, and green advertising, significantly and positively impact consumers' intentions to purchase environmentally friendly products. Additionally, the availability and diversity of green products in retail environments substantially

influence actual green purchasing behavior. Store atmospherics, such as eco-friendly layouts, signage, and product placement, play a crucial role in shaping consumer attitudes toward green purchasing. Collectively, these results highlight the role of retailers as strategic and proactive agents in promoting sustainable consumption rather than merely serving as passive product distributors.

Conclusion

The study's results reveal that retailer promotions, product availability, and store atmospherics significantly enhance consumers' attitudes, intentions, and behavior towards green purchasing. Participants generally exhibited positive attitudes and moderately high intentions, which were reflected in their actual green purchasing actions. Reliability and validity analyses confirmed that the measurement constructs were consistent and accurately represented the intended variables. Correlation analyses further demonstrated significant positive associations among all constructs, suggesting that refining marketing strategies and store environments can bolster consumers' green purchasing behaviors. In summary, this study highlights the critical role of both internal factors (attitudes and intentions) and external factors (promotion, product variety, and store atmospherics) in encouraging sustainable consumer behavior.

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