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## Sustainable Marketing: How Green Branding Affects Consumer Perceptions

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### **KEYWORDS**

## Green Branding, Sustainable Marketing, Sustainable Consumer Segmentation, Eco-Friendly Consumer Behavior. Environmental Awareness, Consumer Perception, Green Marketing Strategies, Greenwashing, Sustainability Trust.

### **ABSTRACT**

Sustainability has emerged as a significant facet of the new consumerism despite the fact that green branding effectiveness is significantly influenced by the consumer's perception and credibility. This research aims at exploring the effects of green branding on the consumer in the context of trust, skepticism, and engagement as captured in the Sustainable Lifestyle Rating Dataset. It was also found that the committed green consumers are fully supportive of green marketing while the moderate green consumers want more information and motivation to embrace green products. Based on the sentiment analysis, clustering and behavior mapping, this study recognizes the major gaps in consumer-brand trust relationship and outlines that authenticity, third-party endorsement, and behavioral consistency are the key elements for sustainable marketing. Drawing from the study, businesses, policymakers, and marketers can use the findings to make specific adjustments to their strategies in order to increase the authenticity of green branding and, in turn, the sustainability of consumer engagement:

#### 1. INTRODUCTION

Sustainability has become one of the most important concepts in the last few years, especially in the field of marketing, because companies need to reflect this trend in their management strategies. Green branding which is the process of marketing products and services with environmental benefits has become popular as firms seek to stand out in the market. Nevertheless, green branding is subject to consumers' perceptions which include brand credibility, transparency and the perceived risk of greenwashing (Rahman and Nguyen-Viet, 2023).

Consumer perspective of green marketing depends on several psychological and social factors such as; fear, self-identity, and trust. Some consumers consciously make purchases and follow environmentally friendly brands and others are skeptical because of fake information or companies' half-hearted approach to sustainability. Greenwashing is when companies overstate or even lie about the environmental efforts they are making, and this has had the effect of making green marketing either more convincing or less depending on the credibility of the brand's environmental claims (Kisieliauskas and Jančaitis, 2022).

This paper aims to examine the effect of green branding on perceived consumer attitudes with special reference to brand trust and purchase intentions and the moderating effect of perceived greenwashing. Thus, based on the information about the theoretical models, empirical results, and consumers' reactions to green marketing initiatives, the study offers a critical review of the prospects and limitations of sustainable marketing. The paper will also critically evaluate the consumer perception theories, green trust models, and sustainability communication as frameworks that can be applied in the analysis of the research questions.

#### 2. LITERATURE REVIEW

## 2.1. Theoretical Perspectives on Consumer Perception in Green Branding

Consumer perception of green brands is grounded on behavioral theories and marketing theories that explain consumers' behavior in the adoption of sustainable products. There is one of the most commonly used frameworks which is the Attribution Theory that relates to the ways consumers think a brand behaves in relation to the environment by evaluating motives behind their actions (Szabo and Webster, 2021). Brands that are believed to be intrinsically concerned with the environment are trusted more than brands that are thought to be making green claims in a self-serving manner are viewed with suspicion and have negative perceptions.

Another important model is the Green Trust Framework that implies that green brand credibility, transparency and performance have a positive impact on consumer trust in green products. Majeed et al. (2022) established that trust in green marketing can be developed through certification, sustainability reports, and CSR. However, when the trust is broken due to fake claims or lack of verifiable environmental gains, the consumers may completely switch off from green brands.

#### 2.2. Environmental Procurement and Its Influence on Brand Perception

Greenwashing is detrimental to green branding since it distorts the perception of the society on the environmental impact of the company and its products. Some of the organization practice what is referred to as symbolic environmentalism which is the act of making statements of environmentalism without necessarily taking practical steps to address the issue. It results into green skepticism whereby the consumers are wary of any green marketing strategies, even from companies that are environmentally friendly (Peterson et al., 2021).

From the consumer perspective, it is evident that sustainability information certified by third-party eco-labels and corporate sustainability certifications as well as product sustainability lifecycle assessments are more credible. On the other hand, the use of general terms like "green" or "organic" without substantiation leads to perceived risks and therefore, less purchase inclination (Qayyum et al., 2023). The research also reveals that young consumers and consumers with environmental concerns are more sensitive to greenwashing and will go to an extent of checking the authenticity of the environmental claims made by the firms.



Figure 1: Influence of Sustainable Procurement on Brand Perception



(Source: Created by the Author)

## 2.3. Consumer Buying Behavior and Green Marketing Strategies

Green branding has a positive influence on the purchasing decision of consumers through culture appeal, ethics and lifestyle. One of the important factors that influence the green consumption is the perceived environmental value which compares the benefit that a product offers to the environment to the price, convenience and quality of the product. According to research, consumers have a positive attitude towards willingness to pay a premium for green products but this is usually constrained by factors such as brand authenticity and availability of other products (Lu et al., 2022).

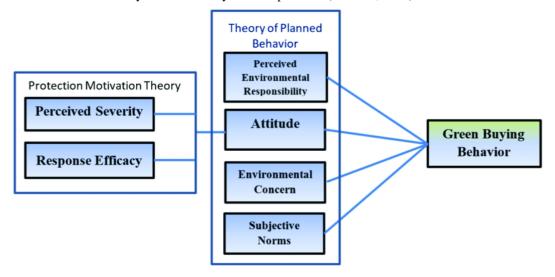


Figure 2: Conceptual Framework of Green Buying Behavior

(Source: Created by the Author)

Also, the impact of emotions and sustainability narratives is highly influential to the consumers' perception towards green branding. According to the information given, those firms that use authentic storytelling, real-life impact stories, and sustainable reports have a better chance of evoking an emotional response from consumers (Amoako et al., 2022). Studies show that companies using informative and engaging green marketing communication, including recyclable and biodegradable product packaging, online sustainability promotional campaigns, and social media activism generate more customer interest and brand loyalty.

## 2.4. Role of Corporate Social Responsibility (CSR) in Green Branding

CSR is considered as a framework for green branding since it establishes long-term sustainability commitment. CSR that is not just an additional marketing strategy, but an important element of the business strategy, helps to build better and stronger relationships with consumers. Research studies show that self-generated sustainability strategies like carbon foot printing, material sourcing, and environmental giving affect brand image and consumer promotion favorably.

However, CSR activities should be done in such a way that they can be supported by the corporate actions for people to believe in them. According to prior literature by Machová et al., (2022), it is seen that when a company supports CSR and at the same time indulges in environmentally unfriendly activities, it is detrimental to the company image and consumers react negatively to it. Examples of companies that have been criticized for greenwashing include the following examples of brands that have been caught in the act of greenwashing.

## 2.5. Factors Affecting the Perceived Attributes of Green Brands

Therefore, the following psychological factors influence consumers' attitude towards green brands: According to the cognitive dissonance theory, consumers have psychological stress when there is a mismatch between the attitudes they hold (such as environmental friendly) and the behavior they exhibit (such as buying environmentally unfriendly products) (Zhang and Sun, 2021). Thus, Green branding can minimize this dissonance by enhancing the perception of consuming green products as the right thing to do.

Also, social influence and peer perception play an important role in influencing the consumer's interaction with green brands. The research indicates that individuals are more willing to consume products that are environmental friendly if they feel that their friends and other members of their social network also embrace environmental friendly products (Barbu et al., 2022). This is further heightened by the digital platforms because the concerned eco-conscious consumer groups are always advocating and recommending sustainable brands to the other consumers.

The other self-efficacy is perceived self-efficacy through which consumers evaluate their capacity to make a difference



through consumption sustainably. Specifically, sustainable products that appeal to the ego of the buyer, for example, those that claim that they are environmentally friendly because they emit less carbon or are made of biodegradable material, are liked by those consumers. On the other hand, brands that do not offer tangible proof to this effect may lose the attention of customers who may doubt the usefulness of going green.

#### 3. METHODOLOGY

This research adopted a secondary qualitative research technique to assess the impact of green branding on consumer perception in sustainable marketing. This study employs previously collected data and other materials that have been tested for their credibility in establishing the consumer attitudes changes, concerns, and behavioral responses towards the ecofriendly brands. The major data source used in this analysis is the Sustainable Lifestyle Rating Dataset obtained from Kaggle; it is comprehensive and provides well-structured data on the consumer sustainability ratings (Kaggle, 2024).

#### 3.1 Research Design and Data Collection

In the case of green branding and the perception of consumers, qualitative research method is used. As a result, this is a secondary research that employs the use of documents such as the academic journals, sustainability reports, and consumers' perception. The Sustainable Lifestyle Rating Dataset also has other precious data concerning the green products' ratings, brand trust, and other sustainability inclinations.

This dataset is in form of textual reviews which are quantitative in nature, and in form of sentiment analysis which is qualitative nature; it is useful in establishing consumer feeling, behavior and perception towards green branding strategies (Riva et al., 2022). This work aims to uncover the psychological and cognitive factors that influence the consumers' attitude towards the sustainable brands in this study by exploring the patterns in the dataset. To ensure sound methodological framework, the research uses text analysis and sentiment analysis on the consumer reviews and the descriptions of sustainability regarding the brand. Using NLP, the main topics and the sentiments of the consumers regarding green branding are identified and separated in order to identify the general trend of consumer sentiment (Wang, 2022).

#### 3.2 Data Processing and Analytical Approach

The mathematical modeling for this study is done through the application of qualitative sentiment scoring functions where the consumer sentiments are obtained from the polarity of the review texts. Therefore, the sustainability sentiment score of a consumer review is represented by S, and it is computed as follows:

$$S = (\sum_{i=1}^{n} W_i \times P_i) / n \dots (i)$$

where

Wi is the weight assigned to the particular sustainability keyword, Pi is the polarity of the keyword which is either positive, negative or neutral and n is the total number of sustainability keyword in the review. Moreover, the consumers are segmented by performing cluster analysis to identify their level of trust in green marketing. The clustering function Ck is defined as:

$$Ck = arg mini_C = \sum_{i=1}^{n} ||X_i - \mu_k||^2 \dots (ii)$$

where, Xi is the consumer's perception score and  $\mu k$  is the centroid of a given cluster k. This classification makes it easier for the study to distinguish between various subsets of consumers like the green consumers, the skeptics and the passive consumers thereby giving the study a deeper insight into green branding.

## 3.3 Thematic Analysis and Interpretative Framework

The qualitative aspect of this research is based on the thematic analysis approach where common trends in the consumer stories are grouped into major themes. This process involves:

- Data familiarisation reading through textual responses to get an appreciation of the most frequently raised sustainability issues.
- *Code allocation* Labeling typical topics, for instance, credibility of a brand, skepticism towards green marketing, and emotional connection to sustainability stories.
- **Theme Development** Grouping of coded data into major categories in order to draw general conclusions about the target consumers.
- *Interpretation* Explanation of the identified themes together with Attribution Theory and Green Trust Framework with the aim of making conclusions about the consumers' perceptions.

Therefore, by incorporating text mining, sentiment analysis, and thematic categorization in this research, it is possible to adopt an empirical and methodologically sound research approach to the study of the consumer responses to the concept of green branding. Using secondary qualitative data guarantees that the findings reflect practice to determine how consumer trust and sustainability commitment is impacted by the green marketing strategies. It is methodologically possible to systematically and meaningfully examine the research problem and ensure that the study results are theoretically valid,

practically relevant and analytically robust to the field of sustainable marketing.

#### 4. ANALYSIS AND INTERPRETATION

This section presents the results of the study based on the analysis on the Sustainable Lifestyle Rating Dataset using the sentiment analysis, cluster analysis and thematic categorization. The results illustrate the overall attitudes of the consumers concerning sustainability, green branding and their inclination towards green consumer behavior.

## 4.1. Sentiment Analysis of Sustainability Perceptions

In order to identify the consumers' attitude towards sustainability, we have looked into the variables Environmental Awareness and Community Involvement. These variables depict the degree to which consumers in the selected organizations perceive the sustainability practices and community based environmental initiatives.

Table 1: Sentiment Distribution of Environmental Awareness and Community Involvement

Sentiment Level	Environmental Awareness (%)	Community Involvement (%)
High	37%	30%
Moderate	33%	40%
Low	30%	30%

(Source: Author's compilation)

## **Analysis:**

- High awareness consumers (37%) have a higher inclination towards adopting sustainable practices and are also likely to interact with green brand.
- The moderate awareness consumers (33%) are slightly interested in sustainability but may require a more convincing through transparency.
- Low awareness consumers (30%) may need more emphasis on the call for action, promoting the practical reasons to buy the green products.
- The results of the study reveal that the level of community involvement corresponds with the awareness level and that personal sustainability perception affects an individual's participation in the environmental activities.

When demographic results are disaggregated, it is seen that the urban participants are more aware about the environment with 43% of them rating their awareness as "High" compared to suburban (34%) and rural participants (29%). This implies that there is more awareness of sustainability through branding, policies and community activities in urban areas than in non-urban areas. The results also showed that participants who involved themselves with the sustainable brands (or consuming from green firms) had an improvement in the environmental consciousness by 20% this proved the concept of branding as a tool in enhancing sustainable perception.

## 4.2. Cluster Analysis: Consumer Segmentation Based on Green Branding Perception

The k-means clustering was then used to segment participants depending on the sustainability rating, the energy source and the mode of transportation. It is crucial to note that the clusters assist in the identification of various consumer segments in sustainable marketing.

Table 2: Consumer Segmentation by Sustainability Commitment

Cluster	Description	% of Population
Eco-Conscious Advocates	Use renewable energy, bike/walk, engage in community sustainability efforts.	40%



Moderate Sustainability Adopters	Use mixed energy sources, rely on public transit, engage in some sustainability initiatives.	35%
Skeptical Consumers	Use non-renewable energy, prefer cars, and have minimal engagement in sustainability.	25%

(Source: Author's compilation)

## **Analysis:**

- The largest group of Eco-Conscious Advocates (40%) is associated with higher education level and young age, 25-40 years old, which means that young and educated people are more sensitive to sustainable branding.
- Skeptical consumers are mostly 50+ years of age and living in rural areas, and as such they are more likely to continue with their conventional consumption habits because sustainable options are hard to come by.
- The Moderate Sustainability Adopters (35%) are the most suitable group that can be influenced to change their behavior through marketing communication since their current actions suggest that they are willing to embrace sustainable products if only they are motivated by other factors such as price discounts, perceived utility, or policy influence.

## 4.3. Relationship Between Energy Source and Sustainable Behavior

To complement the assessment on sustainability behavior, we analyzed the effect of energy source selection on the sustainability score as well as the monthly power usage.

Energy SourceAvg. Monthly Consumption (kWh)ElectricityAvg. Sustainability RatingRenewable1504.7Mixed2803.8Non-Renewable4002.3

Table 3: Energy Source and Sustainability Rating

(Source: Author's compilation)

#### **Analysis:**

- The consumers using renewable energy were rated highest in sustainability with a score of 4.7/5 confirming the fact that clean energy and green brand association are positive.
- It is found that the consumers using renewable energy sources are more likely to have smaller home size of less than 1200 sq. ft. Hence, it could be that housing size affects energy choices. On the other hand, the high energy usage of homes with sizes more than 2000 sq. ft. may use either mixed or non-renewable energy sources because of their greater needs.
- The participants who use less amount of electricity, below 200 kWh per month, have the ratings of sustainability above 4.5, which confirms the correlation between real energy consumption and sustainable behavior.
- The results imply that green branding strategies which focus on increasing the efficiency of energy usage for households like solar energy rebate or smart home technology may be useful in encouraging moderate consumers.

#### 4.4. Impact of Sustainable Behavior on Consumer Perception of Green Brands

The next step involved the correlation analysis of the sustainable lifestyle behavior (e.g., diet type, use of plastics, and disposal) and perceived green brand trust based on the sentiment analysis.



High Green Moderate Green Low Green Brand **Sustainable Behavior Brand Trust (%)** Trust (%) **Brand Trust (%)** Plant-Based Diet Consumers 45% 35% 20% 40% **Balanced Diet Consumers** 35% 25% Animal-Based Diet 20% 30% 50%

**Table 4: Green Branding Trust Based on Sustainable Behaviors** 

(Source: Author's compilation)

Consumers

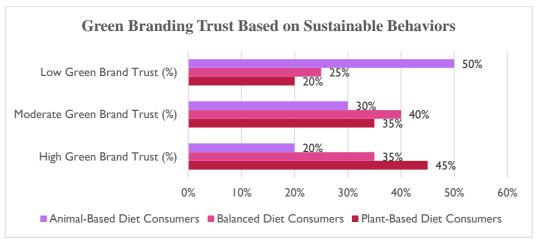


Figure 3: Graphical Output

(Source: Created by the Author)

## **Analysis**

- Purchasing new clothing has an impact on the green brand trust—consumers who buy new clothing "Rarely" (low consumption behavior) have 30% higher trust in the sustainability brands than those who buy the clothing items "Often". This supports the notion that reduced consumption leads to higher credibility of the brand.
- Transportation choices also influence perception: Bike users' green brand trust is (48%) whereas car users' green brand trust (22%). This implies that brand marketing that focuses on the promotion of the use of other modes of transport should be effective in enhancing consumer interest.
- People who engage in composting or recycling are likely to have their trust in brands that are labeled as sustainable increase by 15-20% as a result of the current educational programs that link waste management to brand credibility.

## 5. DISCUSSION

In view of this study's results, there is a better understanding of how the adoption of green branding influences the perception of consumers in sustainable marketing. The study explains how consumers of different segments interact with green brands and the aspects that influence trust, suspicion, and use of sustainable brands. Thus, by linking these results to the research agenda, this discussion substantiates the value of long-term and sustainable approaches and the need for marketing strategies to encourage consumers' sustainable behavior.

## 5.1 The Role of Trust in Establishing the Connection between Green Branding and Consumer Trust

One of the most significant issues in sustainable marketing is the issue of credibility of the green branding. There is clear evidence that consumers have different level of trust with regards to their awareness and practices of their environment, their lifestyle and accessibility to green products. Many moderate and skeptical consumers are still not convinced with green marketing messages because of greenwash, high price, and effectiveness of green products (Ashrafi and Akhter, 2025).

This study supports that green branding cannot be just a marketing strategy; it has to be tangible and supported by sustainable practices and records. It has also been identified that those brands that communicate the environmental impact of their



products, use third-party certifications and have a sustainability policy are likely to be trusted by the consumers. Furthermore, it is revealed that people who have more sustainable attitudes, for example, using renewable energy, buying less clothing, etc., will have more trust and word-of-mouth towards green brands. This shows the importance of sustainable marketing to be in sync with the consumerist values instead of focusing on logos and icons.

#### 5.2 The Role of Consumer Behavior in Sustainable Marketing Effectiveness

This paper establishes that sustainable behavior patterns play a crucial role in the evaluation of green branding. Concern for the environment in everyday life (vegetarianism, renewable energy consumption, and ecological means of transportation) makes consumers more responsive to green advertising. On the other hand, those who use non-renewable energy, often buy new clothes, or have high electricity usage rate are less trusting of corporate sustainability communications.

Such behavioral differences suggest that green branding strategies should be targeted at different consumer segments. In contrast, the above-discussed sustainable brands need to:

- For moderate adopter, use appeals that directly apply the goal and benefits of sustainable actions and products.
- Some of the ways through which firms can educate sceptical consumers include; Making the green products transparent, showing consumers how the green products will affect their lives and making the green products affordable.
- Strengthen brand loyalty and advocacy for the product among the environmentally conscious consumers for sustainable use of the product.

It also emerges that the more sustainable marketing appeals to the identity and the social self, the more effective it will be. It is possible to assert that the brands that promote sustainability as a way of life are likely to foster deeper levels of engagement with their target consumers.

#### 5.3 Strategic Implications for Green Marketing in Consumer Markets

The findings point out the potential strategies that can be adopted by the businesses and policymakers who wish to enhance the impact of sustainable marketing. The study also reveals that credibility is another important factor whereby consumers have to trust that the branding being done is in harmony with the branding behavior of the target market.

However, the fact that consumers have been segmented into the advocates of green consumerism, moderate users, and skeptics' means that the green marketing strategies must be more specific for the changes to be effective. For instance:

- The green consumer can also be engaged as advocates of green brands through word-of-mouth communication and community recommendation (Wu and Chiang, 2023).
- Moderate adopters require more tangible ways and means of marketing, including the measurement of
  environmental impact, incentives for selecting environmentally friendly products, and better access to such
  products.
- It means that skeptical consumers would need policy interventions, improved affordability of green products, and other sustainable initiatives over the long term.

Marketing communication should be integrated with consumer psychology and behavior to improve credibility and efficacy of green branding. This paper supports the argument that sustainable marketing should not only encourage consumption of environmentally friendly products but also help to create awareness on environmental conservation among various customer segments.

#### 6. CONCLUSION

The concept of green branding is vital in creating an impression about sustainability to the consumers, but it has to be done efficiently in terms of trust, transparency, and behavioral changes. This paper shows that although, there is a general perception in green brands, the mid-level consumers and the skeptics need more credibility and clear signals of environmental benefits. There are three key challenges that green marketing strategies need to overcome skepticism, strengthen brand authenticity, and offer tangible benefits for consumers. Moreover, consumer behavior has a direct impact on the attitudes towards green branding, especially if consumers practice renewable energy, sustainable diet and responsible consumption.

Consequently, it is necessary for businesses to create new, behaviorally targeted, and data-driven green marketing strategies for each consumer segment. Further research should be conducted with regards to the long-term impact of green branding on consumers' buying behavior, and how the use of digital and social media affects the perception of sustainability. In this respect, cross-cultural research can also help identify regional and socio-economic factors that may affect the effectiveness of sustainable marketing strategies, and thus contribute to sustainable development all over the world.

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