

An Empirical Investigation of Sustainable Products Among Indians

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Abstract -- Consumers are becoming more ecologically conscious and desirous of purchasing environment-friendly products i.e. sustainable products that can be recyclable. The present study is an attempt to examine the desire to buy, customer opinions about sustainable products, and awareness of sustainable products among people in India. The data has been collected from 218 people from different areas of Delhi NCR. The research study reveals that a large number of participants perceive sustainable products as environment-friendly and eco-friendly products, while other participants said that they were aware of products made with recycled plastic or wood, electronics made with recycled materials and energy-efficient components, green building materials. However, there are few who are not aware of products which are green.

Judgemental sampling is used by the researcher for collecting the data and for analyzing the data percentage, mean deviation, and one-way ANOVA is used. It is concluded that consumers are not only concerned about the environment but also have positive and high intentions to purchase sustainable products. The study makes an interesting finding that though consumers were concerned about the environment and were ready to pay a high price, they were not aware of what constituted environmental-friendly products. Therefore, there is need to consider the effort required to translate environmental concerns into environmental consumer behavior.

Keywords: Environment-friendly products, Sustainable products, Recycled materials, Energy efficient, Consumption behavior

I. INTRODUCTION

THE most talked-about topics today are those related to the environment, such as global warming, the loss of natural resources, and changing weather patterns [1]. This might have a direct or indirect impact on how someone acts, particularly when choosing what to buy. Humans' greed and drive to obtain the greatest amount of wealth possible led to the destruction of the vital life-supporting systems of land, water, and air [2].

Globally, unsustainable consumption levels result in serious environmental sustainability issues such as global warming, water, air, and soil pollution as well as waste production. These issues force society to change its usual consumption patterns and purchasing behavior in order to achieve environmental sustainability. As a result, in the field of modern consumer

research, the phenomenon of green consumer behavior has developed into a new paradigm of the marketing discipline [3] Jaiswal & Kant conduct a comprehensive review of literature in the context of green purchasing behavior [4]. It applies an integrated model based on the 'attitude-intention-behavior' framework to assess the relationships between several key factors and green purchase behavior in the Indian context. The study focuses on the following factors:

Environmental Concern (EC): This factor represents individuals' levels of concern for the environment. *Perceived Consumer Effectiveness (PCE):* PCE measures how effective consumers believe they can be in making a positive environmental impact through their purchasing decisions. *Attitude towards Green Products (AGP):* AGP reflects individuals' attitudes and perceptions regarding green or environmentally friendly products. *Perceived Environmental Knowledge (PEK):* PEK represents the extent to which individuals believe they possess knowledge about environmental issues.

While some previous research has explored the factors influencing purchase intentions and behavior for green products with a focus on the mediation role of attitude, the study points out that there is a gap in the literature when it comes to evaluating these specific cognitive factors (EC, PCE, AGP, PEK) as antecedents of green purchase intention and behavior in the Indian context. Notably, the study highlights that it is testing the relationship between PCE and purchase intention for green products directly and indirectly through AGP for the first time in the indigenous Indian setting. This underscores the novelty of the study's approach and highlights its contribution to understanding the factors that influence green purchasing behavior in the Indian context and its objective to verify the importance of green purchase intention as a predictor of actual green purchase behavior.

II. SUSTAINABLE PRODUCTS

Sustainable products protect human health and the environment throughout their life cycle, from raw material extraction to final disposal. They also benefit society, the environment, and the economy. Sustainable products are those that benefit society, the environment, and the economy throughout their life cycle,

from raw material extraction to final disposal, while protecting human health and the environment. [5],[6]

III. LITERATURE REVIEW

Today, green marketing is considered one of the fastest-growing business trends. It includes measures taken by organizations to solve environmental problems by offering environmentally friendly services and goods that do not harm the environment in any way. Nowadays, green products are preferred by both customers and traders.

Roberts [7] posited that individuals’ awareness of environmental issues plays a crucial role in shaping their behavior towards the environment. It is suggested that heightened awareness and positive attitudes have a favorable impact on consumers’ purchasing behavior. Specifically, individuals who possess a deeper understanding of environmental concerns tend to exhibit more favorable behaviors in support of environmental causes [8]. This knowledge about environmental issues is closely linked to individuals’ attitudes and behaviors regarding the environment. Laroche *et al.* proposed that a well-informed populace regarding environmental problems tends to assume greater responsibility for environmental stewardship [9].

Empirical evidence supports the notion that consumers who are both aware and conscientious about environmental matters tend to make environmentally friendly choices [10]. It’s important to note that positive environmental behavior in individuals does not necessarily guarantee their active involvement or participation in environmental initiatives. The degree of an individual’s involvement is a critical factor, and the motivation to process information effectively depends on the level of their engagement.

Individuals who possess knowledge and awareness about environmental issues are more inclined to engage in green purchasing behaviors [9,10]. However, the extent of their active participation depends on their level of involvement [11].

According to research, Indian consumers are becoming more aware of sustainability and sustainable products. Indian customers are growing more environmentally concerned and are willing to pay more for sustainable goods. This shows that Indian customers have a favorable view of sustainability.

(Nekmahmud&Fekete-Farkas [12] have found important elements that affect India’s adoption of sustainable products. Consumer decisions are influenced by variables like price sensitivity, product quality, and eco-labeling. Businesses seeking to market sustainable products in the Indian market must fully comprehend these considerations.

Sainiet *al.*[13]observe that India confronts difficulties in encouraging sustainable consumption, despite the increased

interest in sustainable products. The challenges to sustainable consumption have been recognized as a lack of sustainable product options, ignorance about certifications, and cost considerations [14].

In India, cultural considerations have a big impact on how people behave as consumers. Studies have looked into the impact of cultural norms and values on sustainable purchasing behaviors. In India, for instance, the idea of “Jugaad” is common and has the potential to influence attitudes toward sustainability. To encourage sustainable consumption and production, the Indian government has implemented a number of policies and initiatives. It is imperative to conduct research on the efficacy of these regulations and how they affect consumer behavior.

IV. RESEARCH OBJECTIVES

1. To examine customer opinions and awareness of sustainable products.
2. To assess consumer desire to purchase sustainable products.

V. RESEARCH METHODOLOGY

In this study, we needed to capture the customer’s perspectives about their opinions and awareness of sustainable products. Also to review their desire to influence their purchase decision-making for sustainable products shared by participants containing valuable insights about their individual experiences. This study aims to examine the participants’ opinions and their views and to identify their desires. The data has been collected by using a well-designed questionnaire from 218 participants living in Delhi NCR. Since the population was very heterogeneous and challenging to approach, purposive/judgmental sampling was used. The questionnaire has been designed with the help of Heutz, M. H. (2010) and Kumar *et al.* (2012) by their research work. This study is based on primary data and secondary data as well. The study is a descriptive cum exploratory research design. For analyzing the data descriptive statistics by using MS- Excel version is used.

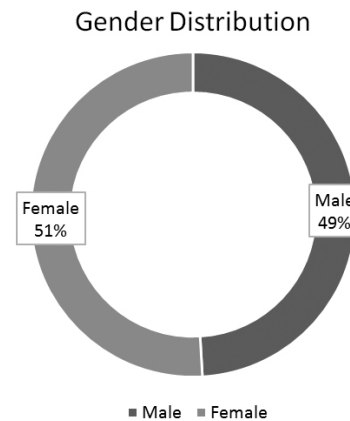


Figure 1. Gender distribution.

Table 1-- SOCIO-ECONOMIC FACTORS OF PARTICIPANTS

218 Participants			218 Participants		
Variables	Number	Percent	Variables	Number	Percent
<i>Gender</i>			<i>Education Qualification</i>		
Male	107	49.08	Secondary	15	6.88
Female	111	50.92	Graduate	33	15.14
Others	0	0	Master's Level	170	77.98
Total	218	100	Total	218	100
<i>Age (Years)</i>			<i>Income Level (per month)</i>		
18-23	30	13.76	Less than or equal to 25000 (INR)	47	21.56
24-29	158	72.48	25000-50000 (INR)	62	28.44
30-35	21	9.63	50000-75000 (INR)	79	36.24
Above 35	9	4.13	Above 75000 (INR)	30	13.76
Total	218	100	Total	218	100

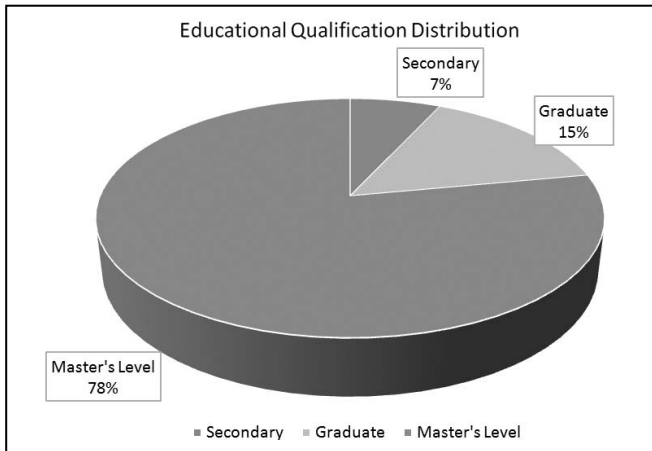


Figure 2. Educational qualification distribution.

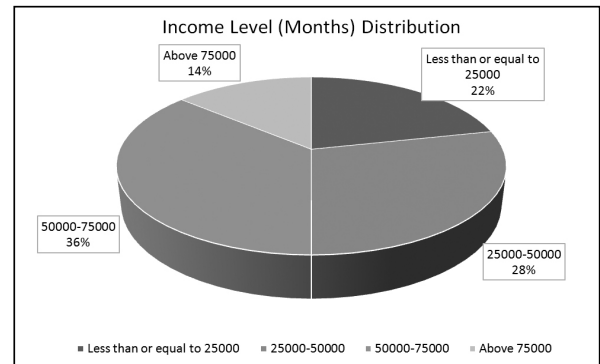


Figure 4. Income level (per month) distribution.

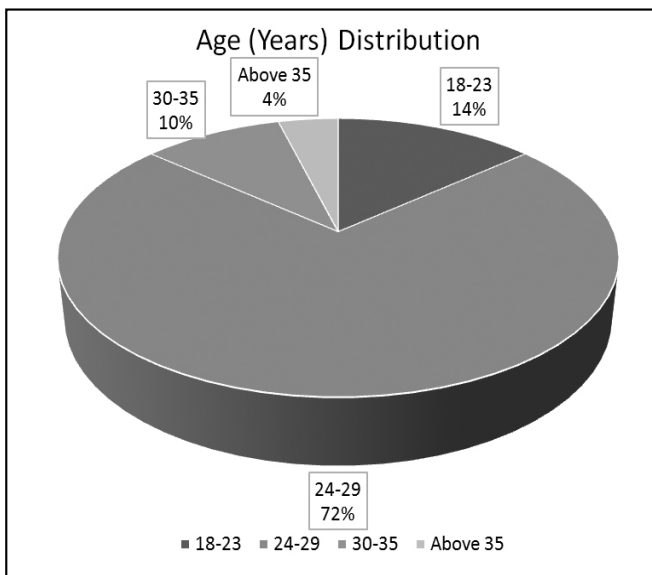


Figure 3. Age (years) distribution.

Table 1 presents a socio-economic profile of participants. In the table, the age has been grouped into four categories 18-23 years, 24-29 years, and 30-35 years and above 35 years. Income here means monthly family income. As per the table, among the present sample majority of participants (36.24 percent) where an income is more than 50,000 and less than or equal to 75,000. Male (49 percent) and female (51 percent) were represented.

VI. RESULTS & DISCUSSION

- Customer opinions and awareness of sustainable products

TABLE 2 --MEANING OF SUSTAINABLE PRODUCTS IN CUSTOMERS' MINDS

What to your mind on hearing the term Sustainable Products?		Participants	Percent
A	Environmental friendly products	135	61.93
B	Products made with recycled plastic or wood	26	11.93
C	Electronics made with recycled materials and energy-efficient components	37	16.97

D	Green building materials	14	6.42
E	Green in color	6	2.75
Total		218	100

Analysis of Table 2:

Assessing customer awareness of sustainable products and what they understand by sustainable products is crucial for gaining a deeper understanding of consumer perceptions of sustainable products. Table 2 indicates that 61.93% of participants say environmentally friendly products. 11.93% of products are made with recycled plastics or wood. 16.97% of electronics are made with recycled materials and energy-efficient components. 6.42% green building materials. However, 2.75% of participants were not at all clear on the meaning of sustainable products as to them sustainable products are products that are green in color.

TABLE 3 -- CONSIDERATION REGARDING SUSTAINABLE PRODUCTS WHILE GOING FOR SHOPPING

	Gender		
	Total	Male	Female
Yes	65%	44%	52%
No	35%	56%	48%
Total	100%	100%	100%
Pearson Chi-Square	8.129	1	0.021

Table 3 shows that 52% (female) and 44% (male) of participants consider sustainable products when shopping, and 48% (female) and 56% (male) of participants have never considered the same. Thus, it reveals that although the level of awareness is quite high, its conversion into purchase intention is low. When discriminating between male and female participants, 70% and 14% took sustainable products into account when making purchasing decisions, meaning that male respondents were more considerate of sustainable products and environmental issues than females. In addition, the Pearson chi-square test value of 8.129 shows a significant association between males and females with their purchasing decisions.

TABLE 4 -- RELATION BETWEEN PERCEPTION REGARDING SUSTAINABLE PRODUCTS ACROSS SOCIO-ECONOMIC FACTORS

Statements	Overall Mean	Gender		Age		Income		Qualification	
Do sustainable products help to protect the environment	4.11	.779	.398	1.667	.248	4.102	.013	.543	.774
Sustainable products are of good quality when compared to other products.	3.15	.700	.410	1.549	.227	1.112	.362	.723	.526
Sustainable products are no different from other products.	2.77	.001	.990	1.141	.326	2.195	.115	1.770	.186
Sustainable products are expensive doesn't add any advantage	2.68	2.831	.103	.211	.802	1.375	.254	.787	.441
The promotion of sustainable products is just a publicity or a boon	2.86	.079	.777	5.122	.006	3.211	.021	1.773	.586

On a Likert scale ranging from strongly disagree to strongly agree, respondents were asked to rate their opinions regarding sustainable products. The results are shown in Table 4. Additionally, ANOVA was used to determine the significance level (5% level of significance) of the difference between perception and demographic variables. The table demonstrates that the majority of respondents did believe that buying environmentally friendly products helped them protect the environment. They also supported the idea that environmentally friendly products are of higher quality than other ones.

The respondents are split on the idea that firms' promotion of green products is merely a publicity gimmick, though. Additionally, the respondent has the false belief that green products are overpriced and are identical to non-green products.

Additionally, the F test across various demographic variables revealed a significant relationship between respondent perception and age and income only, indicating that there was no difference in perception of green products across various demographic variables, except for income and age regarding price and environmental protection, respectively.

TABLE 5 -- OPINIONS OF PRICE FOR SUSTAINABLE PRODUCTS

	Participants	Percent
Higher	97	44.50
Average	84	38.53
Lower	25	11.47
Not Aware	12	5.50
Total	218	100

Table 5 reveals that 44.50% of participants perceived that the price of sustainable products is higher in comparison to other products. 38.53% of participants perceived that the price is average and nearly 5.50% are unaware of the price. Surprisingly 11.47% of participants believed the low price of sustainable products in comparison to its benefits. This again indicates the unawareness regarding sustainable products.

TABLE 6 -- PURCHASE OF SUSTAINABLE PRODUCTS

	Participants	Percent
Always	110	50.46
Often	68	31.19
Seldom	26	11.93
Never	14	6.42
Total	218	100

Table 6 indicates that 50.46% of participants are always ready to purchase sustainable products if the prices are the same. Only 6.42% of participants said that they would never purchase sustainable products whether prices are the same or different.

TABLE 7 -- READINESS TO PAY HIGHER PRICES FOR SUSTAINABLE PRODUCTS

If the price is increased by	Participants	Percent
6-10%	57	26.15
1-5%	59	27.06
10-15%	55	25.23
15-20	47	21.56
Total	218	100

Table 7 reveals that if the price of sustainable products is increased by 1-5% then 27.06% of participants are ready to purchase. There is a need to pressure consumers, manufacturers, and suppliers to minimize the negative effects on the environment through green products.

VII. DISCUSSION & CONCLUSION

Based on the results presented above, even though the majority of respondents say they are aware of sustainable products, their knowledge looks flimsy and overstated. Deeper research demonstrates that the majority of respondents—who claimed to be aware of sustainable items—had no idea what exactly sustainable products are. Additionally, the respondents were unaware that purchasing eco-friendly goods also helps to safeguard the environment. The study also demonstrates that the majority of people are very concerned about the environment and have a strong desire to take action, but they are unsure of how to make a difference.

Therefore, it is impossible to hold marketers and the government accountable on an individual basis. Instead, environmental protection organizations and the media must raise awareness about green products as a way to protect the environment. Marketers should take the initiative while keeping in mind that consumers care about the environment and want to contribute in some small way. Marketers will ultimately help to increase their goodwill and build a strong brand image in the eyes of

consumers by satiating this urge and desire of consumers towards the environment through effective promotional strategies to educate them about sustainable products, their usage, and the resulting impact on environmental protection.

Sustainable product purchase intentions among Indians across income categories are crucial for businesses and policymakers aiming to promote sustainability in the country. Sustainable products are those that have a reduced environmental and social impact throughout their lifecycle compared to conventional alternatives. Sustainable product purchase intentions may vary across different income categories in India:

Some of the key points are-
Low-Income Category:

- **Price Sensitivity:** Low-income individuals are often more price-sensitive, making them less likely to prioritize sustainable products if they are more expensive than conventional alternatives.
- **Basic Needs:** People in this category may prioritize meeting their basic needs over sustainability concerns. Food, housing, and healthcare may take precedence over eco-friendly products.
- **Limited Awareness:** There might be limited awareness about sustainable products and their benefits in this income group, leading to lower intentions to purchase them.
- **Government Initiatives:** If government subsidies or incentives are available for sustainable products, low-income individuals may be more inclined to consider them.
- **Local and Traditional Products:** Low-income individuals may continue to use locally sourced or traditional products, which may or may not be sustainable, depending on their production methods.

Middle-Income Category:

- **Balancing Act:** Middle-income individuals are likely to strike a balance between price and sustainability. They may be more willing to pay a slightly higher price for eco-friendly products but may still consider affordability.
- **Awareness:** There is a higher chance of awareness about sustainable products in this group, especially if they are urban dwellers or have exposure to sustainability campaigns and information.
- **Brand Loyalty:** Some middle-income consumers may be loyal to specific brands that promote sustainability, making them more likely to purchase such products.
- **Influence of Peer Groups:** Peer influence can play a significant role in this income group’s purchase decisions. If sustainable products become trendy or socially desirable, middle-income individuals may be more inclined to buy them.
- **Access to Information:** Better access to the internet and

media can lead to more informed choices, increasing the likelihood of opting for sustainable products.

High-Income Category:

- Environmental Consciousness: High-income individuals often have a stronger commitment to environmental and social causes, making them more inclined to choose sustainable products.
- Higher Education: Many high-income individuals have access to higher education, which can foster a greater understanding of sustainability issues and motivate them to make sustainable choices.
- Influence of Corporate Sustainability: High-income consumers may be influenced by corporate sustainability initiatives and may prefer products from companies with strong environmental and social responsibility records.
- Luxury Sustainability: In this category, there is a growing trend toward luxury sustainable products, such as electric cars and eco-friendly fashion, indicating a willingness to pay a premium for sustainability.
- Investment in Green Technologies: High-income individuals may invest in sustainable technologies for their homes, such as solar panels and energy-efficient appliances, as a long-term commitment to sustainability.

Businesses and officials should take into account tactics like pricing incentives, awareness campaigns, and collaborations with local communities to increase the intention to buy sustainable products across all income categories. Promote sustainable consumption in India by focusing marketing and educational initiatives on the distinctive traits.

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