



Understanding Gen Z Consumer Purchase Intention for Sustainably Packaged Agri Products

Sweety Thakka¹, Khushbu Kadukar²

¹Vishwakarma University, Pune, India

²Vishwakarma University, Pune, India

sweety.thakkar@vupune.ac.in
khushbu.kadukar@vupune.ac.in

Abstract: Environmental sustainability is one of the main issues in today's consumer decision making. In particular, Gen-Z consumers are paying a lot of attention to environmental issues when choosing goods and services. This paper investigates the perception of generation Z customers, their intentions to buy and readiness to pay for sustainably packaged agri-products. A quantitative research methodology was used, and primary data from 168 Generation Z customers were obtained via a structured questionnaire. Analysis of the collected data was conducted through the use of descriptive statistics, correlation analysis, t-tests, and regression analysis. According to the findings of the research, Generation Z customers have relatively positive perceptions about the issue of sustainable packaging and show moderate readiness to purchase and give extra for sustainable packaging products. Results of the correlation analysis and regression analysis demonstrated that consumer perception significantly affects both purchase intentions and willingness to pay for sustainably packaged agri-products. Moreover, a very strong relationship between perception, purchase decision and readiness to pay was found.

Keywords: Sustainable Packaging, Generation Z, Consumer Perception, Purchase Intention, Willingness to Pay, Agri Products

1. Introduction

The idea of Sustainability as a topic of concern among consumers is growing rapidly due to worsening conditions caused by pollution and global warming; plastic waste, for example, is causing severe harm to the environment, global commerce, and agriculture. Sustainability means meeting the current needs while ensure that future generations can also meet their needs [1]. Furthermore, packaging in the Agri-product industry is causing irreparable environmental damage due to the volume and types of plastics and other non-biodegradable packaging materials used. Hence, using sustainable packaging materials that are recyclable, biodegradable, reusable, and compostable is gaining acceptance in business practices. Improving the environment by using sustainable packaging will additionally improve the company's brand image, trust from customers, and attractiveness of its products. Consumer behaviour is rapidly shifting toward supporting products that are environmentally responsible, especially in younger consumers. Generation Z is a part of this demographic group, generally defined as people born between 1995 and 2010; they are environmentally and socially conscious, as evidenced by their willingness to purchase products from companies that follow sustainable business practices [2][3]. Gen Z consumers support companies that provide them with an opportunity to align their purchases with their values [4] and, in turn, support their environmental causes by purchasing environmentally friendly

packaged products, demonstrating product transparency, and engaging in sustainable communication in the marketplace. The way something is packaged can either encourage or discourage us from buying it. For example, sustainable (eco-friendly) packaging conveys healthiness, safety, and environmental responsibility to consumers. This makes us feel more confident about the company or brand, which means we will buy more from them. "Agricultural products refer to products obtained from crop cultivation and animal husbandry, including fruits, vegetables, grains, dairy products, livestock products, and other primary or minimally processed goods used for food and related purposes" [5] For agricultural products (fruits, vegetables, grains, dairy, organic food), the importance of using sustainable packaging is even greater since these products are often associated with healthiness, freshness, and being natural. Research has found that social influence, environmental concern, attitude toward sustainable purchasing, and perceived value of the product are all key factors influencing people's likelihood of buying sustainable products [6][7]. Correspondingly, past research has demonstrated that for products with environmentally friendly packaging, consumers are willing to pay extra [8]. However, no matter how well people understand the benefits of sustainable packaging, they may still choose to buy other products because sustainable products are typically more expensive and harder to find at their local store. This report will assess Generation Z's views about using sustainable packaging in agricultural products, investigate what effect this type of packaging has on their buying choices, and look into how willing these consumers are to spend additional funds on sustainable agricultural products. These results will benefit marketers and producers of agricultural goods.

2. Literature Review

Over the past few years, green consumption and sustainable behaviour have garnered significant interest from researchers studying the psychological, social, and situational influences on consumer decision making. The Theory of Planned Behaviour give details showing that consumers' buying decisions are affected based on their attitude, subjective norm and perceived behavioural control [6]. This theory was applied to green purchasing behaviour, as research found that environmental concern, social influence, and availability play a key role in purchase intention. [8] Applied the Theory of Planned Behaviour to the purchasing of eco-friendly packaged products and found that the three antecedents (environmental concern, social influence, and ease of access) significantly influence purchase intention. It is also found in the literature the gap exists in attitude and behaviour i.e. consumers are positive towards environmentally friendly behaviour, but do not engage in such behaviours like [9] [7] found that barriers to engaging in environmentally friendly purchasing include high prices, limited availability and lack of trust. Similarly, [10] found that two significant barriers to engaging in the purchase of green products were skepticism of green claims and perceived lower performance of green products. Researchers have found that consumers who possess a strong sense of environmental awareness and prefer green products are more likely to purchase them. [11] Found that a positive attitude is created from environmental awareness and drives purchase intentions for "green" products. [12] emphasised the role of supposed consumer effectiveness and social influence when forming green buying intentions. The importance of green marketing and communication is also important to consumer behaviour. [13] reported that perceived value and trust enhance consumer purchase intentions for "green" products, while perceived risk adversely impacts purchase intentions for these products. [14] went on to

say that effective green marketing requires companies to incorporate sustainability into their overall business strategy and to not just "green wash" products through superficial marketing efforts. [15] supports this statement by stating that in order to develop long term customers, green-marketing companies must have transparency, authenticity, and be value-driven. The use of packaging is a vital component in shaping consumer perceptions of sustainability. [16][17] suggested that packaging serves both as a communication and promotional tool, which influences purchase behaviour via their design and the information they provide. In addition to this, both [18] [19] reported that visual cues, eco-labels, and proper functional design are major influences on consumer responses. According to [20], while consumers would like sustainable packaging, they do not want to give up convenience and/or cost. Eco-labels and sustainability information are also important motivators for consumers. As noted by [21] eco-labels can positively affect consumers' awareness of eco-friendly products, their trust in those products, and their intention to buy such products. [22] Providing information on sustainability can change the perception towards the product and hence can lead to purchase the product and even pay more for it,[4] found that Gen Z's opinion of sustainable practices is important; however, Gen Z will still consider the price and brand image of a product before making an online purchase. [23] provide additional insights on others factors that influence Gen Z's online buying behaviour, including the role of custom-made digital marketing, while [24] point out that aspects of sustainability and purpose have a major impact on Gen Z's purchasing preference, including in the case of employment. Further corroborating evidence of the above conclusions comes from study results referencing either the food and/or cosmetic industries. [25][26] Conclude that consumers are more likely to adopt a sustainable approach when it is motivated by their desire for better health, concern for the environment and having a high level of trust in the company providing them with the food. [27] found that there are other important aspects to the decision-making process related to green cosmetic purchases, as attitudes toward purchasing these products, level of brand trust in the cosmetics, as well as the influence of friends/coworkers, are all important variables that will impact on consumer behaviour.

2.1 Research Gaps

1. Most previous studies have focused on green products and sustainable packaging in general, but very few studies have specifically examined sustainable packaging in Agri products such as fruits, vegetables, grains, and dairy products.
2. There is limited research on Generation Z consumers regarding how sustainable packaging influences their perception, buying decisions, and willingness to pay.
3. Some past studies have studied environmental concern, trust, and social influence, but very few studies have explored relationship between consumer perception, purchase intention, and readiness to pay for sustainably packaged Agri products.
4. Many studies have highlighted positive attitudes toward sustainable products, but it is still unclear that whether Generation Z are willing to give extra for sustainably packaged Agri Products.

3. Objectives

- 1) To understand Generation Z consumer perception towards sustainable

packaging in agri products. 2) To analyze the influence of sustainable packaging on Gen Z consumer buying decisions for agri products. 3) To study Generation Z consumer willingness to pay for sustainably packaged agri products.

3.1 Hypothesis

- H1:** Generation Z consumers have a positive perception towards sustainable packaging in Agri-products.
- H2:** Sustainable packaging considerably influences Generation Z consumers’ purchase intention towards Agri-products.
- H3:** Sustainable packaging significantly influences Generation Z consumers’ readiness to pay a premium for Agri-products.

Research Methodology

A quantitative descriptive research methodology was utilised to collect primary data. Convenience sampling was used to collect data from one hundred sixty-eight respondents via an online survey that was distributed in the form of a controlled questionnaire. The questionnaire included demographic questions and statements to assess respondents’ perception and buying behaviour, as well as their willingness to purchase sustainably packaged agricultural products. A five-point Likert scale was used to record the responses, with (1) representing Strongly Disagree and (5) representing Strongly Agree. The respondents of this study were limited to Generation Z respondents aged 18 to 26 years. Participation in the study was voluntary, and formal permission was received after respondents were informed of the study’s academic intentions. The data that were collected were analyzed via descriptive statistics, Cronbach’s Alpha, correlation, t-test, and regression analyses to find out the relationships among the study variables. Due to the nature of convenience sampling, the results of this study were interpreted based on the limitations of the selected sample.

4. Data - Analysis and Interpretation

1 . Demographic Profile

Table 1: Demographic Profile

Demographic Variable	Category	Frequency	Percentage
Age (in years)	18–20	36	21.4%
	21–23	111	66.1%
	24–26	15	8.9%
	Above 26	6	3.6%
Gender	Male	91	54.2%
	Female	77	45.8%
Occupation	Student	136	81.0%
	Working	22	13.9%
	Professional		
Monthly Personal Income	Self-employed	10	5.9%
	Less than Rs. 10,000	109	64.9%

Frequency of Purchase of Agri Products	Rs. 10,001 – Rs. 25,000	28	16.7%
	Rs. 25,001 – Rs. 50,000	22	13.1%
	More than Rs. 50,000	9	5.4%
	Daily	61	36.3%
	Weekly	77	45.8%
	Monthly	19	11.3%
	Occasionally	11	6.5%

Table 1 presents that the greater part of respondents belonged to the 21–23 years age group, were male, students, had monthly income below Rs. 10,000, and purchased agri products on a weekly basis.

2. Scale Reliability Analysis

Table 2: Internal Consistency (Cronbach's Alpha)

Construct	Cronbach's Alpha	Interpretation
Perception	0.977	Highly Reliable
Buying Decision	0.967	Highly Reliable
Willingness to Pay	0.942	Highly Reliable

As presented in Table 2, all Cronbach's Alpha values are above 0.90, which mean the scales are consistent and reliable

3. Descriptive Statistics

Table 3. Descriptive Statistics

Construct	Mean	Standard Deviation	Interpretation
Consumer Perception	3.61	1.25	Moderate
Influence on Buying Decision	3.48	1.21	Moderate
Willingness to Pay	3.49	1.92	Moderate

Table 3 shows the descriptive statistics of the research variables. The average consumer perception of sustainable packaging scored 3.61 (SD = 1.25) points, implying that sample consumers within the target generation had a fairly positive attitude regarding sustainable packaging. Influence of sustainable packaging on the purchasing decision variable revealed a fair influence (M = 3.48, SD = 1.21), while the willingness to pay for sustainably packaged agri-products indicated a fairly positive attitude (M = 3.49, SD = 1.92). This indicates that respondents in this study, i.e., Generation Z consumers, have fairly positive attitudes toward sustainable packaging.

4. Correlation Analysis and Result

Table 4: Correlation Matrix

Variables			Correlation (r)	Interpretation		
Perception	–	Buying Decision	0.947	Very Strong Relationship	Positive	
Perception	–	Willingness to Pay	0.900	Very Strong Relationship	Positive	
Buying Decision	–	Willingness to Pay	0.902	Very Strong Relationship	Positive	

Table 4 reveals a **strong positive relationship** among all variables. Consumer perception is highly correlated with buying decisions ($r = 0.947$), it means that there is a favorable perception of sustainable packaging with higher chances of purchase. Correspondingly, perception & willingness are strongly associated ($r = 0.900$), and even buying decisions & willingness to pay are strongly linked ($r = 0.902$). This implies that **enhancing the perception of consumers can improve both purchase intention and willingness to pay**, thus making perception a crucial factor in sustainable consumption behaviour.

5. Gen Z consumer perception and sustainable packaging

Table 5: t-Test for Perception (Single Sample)

Variable	Mean	Test Value	t-value	p-value	Result
Perception	3.61	3	6.25	$p < 0.001$	Supported

A one-sample t-test was done to understand the perspective of Generation Z consumers of sustainable packaging. The results in the table no.5 indicate a mean perception score of 3.61. This score is above the neutral value of 3.00, and represents a positive perception of sustainable packaging among Generation Z consumers. A t-test of $(167) = 6.25$ and a significance level of $p < 0.001$ indicate the results are statistically significant. Since the p-value is less than the significance level of 0.05, the null hypothesis is rejected. The alternative hypothesis, H1, is therefore accepted, and it is concluded that Generation Z consumers have a significantly positive perception of sustainable packaging.

6. Regression Analysis

6.Effect of Perception on Buying Decision

Table 6: Regression Results

Statistic	Value
R ²	0.898
F-value (1,166)	1457.68
Coefficient (β)	0.981
Significance (p)	<0.001

From Table 6, it is observed that consumer perception has a strong and significant influence on the buying decisions of Generation Z. The result explains 89.8% of the variance in buying decisions, indicating high explanatory power. The coefficient ($\beta = 0.981$) indicates that a one-unit increase in perception leads to a 0.981 increase in buying intention; hence, perception is a key driver of buying intention. **H2: Accepted**

7. Perception effect on Willingness to Pay

Table 7: Regression Results

Parameter	Value
R ²	0.811
F-value	711.65
Coefficient (β)	0.950
Significance (p)	<0.001

The regression results are presented in Table No. 7, which indicates that perception significantly influences willingness to pay. The model explains 81.1% of the variation ($R^2 = 0.811$), which is substantial. The coefficient ($\beta = 0.950$) suggests that as perception improves, willingness to pay also increases significantly. This highlights that **positive perception can justify premium pricing for sustainable products.H3: Accepted**

8. Gender-Based Analysis: Perception Differences

Table 8: Gender-wise t-test (Perception)

Gender	Mean	p-value	Result
Male	3.31		
Female	4.05	0.000055	Significant

Male and female respondents' perceptions differ significantly ($p < 0.05$), as seen in Table 8. Female respondents have scored higher than male respondents. Suggesting that females are more concerned about the environment

9 Gender-Based Analysis: Willingness to Pay Differences

Table 9: Gender-wise t-test (Willingness to Pay)

Gender	Mean	p-value	Result
Male	3.26		
Female	3.85	0.000577	Significant

Table 9's findings show that there is a substantial gender difference in willingness to pay ($p < 0.05$). For agricultural products packaged sustainably, female respondents are more likely to pay a premium. This implies that marketing tactics for sustainable products may benefit from focusing on female buyers.

10 Open-Ended Responses – Analysis and Results: Preferred Packaging Types

Table 10: Preferred Sustainable Packaging

Packaging Type	Frequency	Interpretation
Paper Packaging	45	Most preferred due to eco-friendliness
Biodegradable Materials	38	Strong preference for sustainability
Jute/Cloth Bags	30	Preferred for reusability
Recyclable Packaging	20	Awareness of recycling benefits

Minimal Packaging 18 Preference for waste reduction

Table 10 shows that the majority of respondents favoured paper-based and biodegradable packaging, with cloth and jute bags ranking second. This indicates a strong preference for low-waste and environmentally friendly packaging options.

11. Open-Ended Responses – Analysis and Results: Consumer Suggestions

Table 11: Suggestions for Improvement

Suggestion	Frequency	Interpretation
Reduce Plastic Usage	40	Most critical concern
Use Biodegradable Materials	35	Strong recommendation
Recyclable Packaging	22	Practical sustainability
Reusable Packaging	15	Long-term solution

Reducing or eliminating the use of plastic was the most popular recommendation, followed by the use of recyclable and biodegradable materials (Table 11). Innovation and affordability were also highlighted by respondents. This emphasizes the need to balance sustainability with practicality and cost-effectiveness.

5. Results Discussion and Findings

The findings of the study showed that Generation Z customers have a moderately positive attitude towards sustainable packaging in Agri-products. The average values of perceptions, purchasing decision-making, and willingness to pay were higher than the neutral point, meaning that the participants are concerned about sustainability issues and positively disposed towards eco-friendly packaging. Nevertheless, the average ratings imply that sustainable packaging may not be enough to make customers buy the products without considering other variables like price, convenience, quality, and availability.

The perception-purchasing decision relationship, the perception-willingness to pay relationship, and the purchasing decision-willingness to pay relationship were found to be strongly positively correlated by the correlation analysis. Hence, it can be stated that respondents with more positive perceptions towards sustainable packaging show favourable intentions of not only purchasing products with sustainable packaging, but also are ready to pay extra. Therefore, lastly, it can be said that perception plays an important role in purchase behaviour among Generation Z consumers.

This hypothesis is additionally supported by regression analysis since both willingness to pay and purchasing decisions are affected by the consumer’s perception. The regression result shows that customer perception affects the buying decision of Agri products, and further, it leads them to pay more for such products

These results support [6], which suggests that attitude and perception impact behavioural intention. These results agree with the findings obtained by [28], who found that consumer purchase intention was significantly impacted by environmental concern as well as a positive attitude towards environmental packaging. The findings further confirm the

findings of [29] regarding the importance of perceived value and trust in making green purchase decisions by consumers.

One of the most significant results obtained through this research is the gender difference in terms of perception and readiness to pay. In contrast to men, women scored higher in terms of perception and demonstrated higher readiness to pay for sustainably packaged agricultural goods. Thus, women respondents are more favourable towards any initiatives on sustainable packaging and hence demonstrate higher ecological awareness. Thus, it will be beneficial for companies selling sustainable agricultural goods to develop specific strategies of communication for women.\

Moreover, the qualitative answers provide useful insights. Most participants prefer recyclable packaging, made from paper, biodegradable materials, and even reusable products such as fabric bags. In the opinion of participants, the company should use less plastic, provide recyclable and biodegradable alternatives, and offer affordable packaging options that are sustainable.

In general, the findings reveal that companies dealing with Agri-products will benefit greatly from implementing sustainable packaging. They will have an edge over other companies in attracting customers belonging to Generation Z if they invest in sustainable packaging, educate customers on its benefits, and keep prices low.

6. Limitations of the Study

1. Participants from the Generation Z category alone participated in the research.
2. The sample size is limited to 168.
3. The research focused exclusively on agricultural products, and variables like willingness to pay, perceptions, and purchase decisions were selected for the research.
4. Self-reporting questionnaires were employed in data collection, which may have resulted in response bias.

7. Future Scope of the Study

1. Respondents of different ages and locations may be used in future studies.
2. Other variables such as social pressure, awareness of eco-labelling, environmental concern, and brand reputation may be considered by researchers.
3. The preferences for sustainable packaging in different companies may be compared in future studies.
4. The role of eco-labelling and green marketing on consumer purchase intention may also be explored by researchers.

8. Managerial Implications

- 1)Firms dealing in agro-products should employ environmentally friendly packaging, which is recyclable, biodegradable, and based on paper.
- 2)Marketing professionals could conduct targeted campaigns towards women consumers since they showed greater positivity.
- 3)Firms should employ labels and other information along with online marketing campaigns in order to highlight the benefits of sustainability.

4) Firms manufacturing agro-products should invest in innovative packaging, such as reusable packages, packaging based on agricultural wastes, and compostable.

5) Consumer acceptance needs to be assured by striking a balance among sustainability, price, quality, and convenience.

9. Conclusion

The study suggests that Gen Z consumers' attitudes, buying behaviours, and the amount they are willing to pay for agricultural products are heavily affected by sustainable packaging. The research findings revealed that willingness to pay a premium and buy are highly impacted positively by favourable attitudes towards sustainable packaging. As compared to male respondents, female respondents displayed favourable attitudes and willingness to pay.

Moreover, it is found that consumers prefer reusable, recyclable, biodegradable, and paper packaging over plastic packaging. The importance of factors such as convenience, cost-effectiveness, and environmental sustainability of packaging materials has been emphasised by the participants. Overall, sustainable packaging has become more than just a green initiative but a strategic approach for businesses to win eco-friendly customers, strengthen brand reputation, and establish goodwill among consumers.

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