

Awareness And Preference for Digital Eco – Labels in Online Shopping Among the Gen Z

Kajal Kumari¹, Arpita Das²

¹Ravenshaw University, Cuttack.

²Ramadevi Women's University, Bhubaneswar.

ABSTRACT

Purpose: The study aims at assessing the “awareness and preference for digital eco - labels in online shopping among the Gen Z” in the Cuttack district of Odisha. It also seems to identify the relationship between awareness and preference of the Gen Zs to pay extra on the preference of products.

Methodology: An empirical study was conducted using primary data via structured questionnaire. For the purpose of the research responses from 208 respondents has been collected from Gen Z consumers which further were measured on 5 – point Likert Scale. Statistical tools like mean and correlation has been used to examine the relationship among the variables.

Findings: The findings indicates that Generation Z (Gen Z) are highly aware of digital eco – labels and this has a positive impact on the preference for the selection of the eco – labeled products. This also influence their willingness to pay extra, reinforce their preference towards eco-labeled products.

Social implementations: Digital eco - labels can encourage eco-friendly or environmentally responsible shopping among the young consumers. Businesses and policy makers can take a leverage from this and can encourage young consumers to buy sustainable products and support environmental goals.

Keywords: Digital eco- labels, Generation Z, Online Shopping, Awareness.

1. INTRODUCTION

This paper explores the emerging intersection of environmental consciousness, digital consumer behavior, and generational preferences, focusing specifically on Generation Z's engagement with eco-labels in e-commerce. As digital natives, Gen Z exhibits distinct patterns in their online shopping habits and environmental concerns, making their perceptions of digital eco-labels a critical area of investigation.

This generation, highly aware of environmental issues, is motivated to make eco-friendly purchasing decisions, yet their propensity for technological solutions like online eco-labeling remains an under-researched area (Kabaja et al., 2023) (Duarte et al., 2024). This study aims to bridge this gap by examining how digital eco-labels influence their online purchasing decisions and their overall awareness and preference for such certifications (Tass, 2025). While Gen Z generally holds positive attitudes toward sustainability, a notable gap often exists between their stated intentions and actual sustainable consumption behaviors (Rossi & Rivetti, 2020). This discrepancy underscores the importance of investigating how digital eco-labels, which offer accessible and transparent information, can effectively translate environmental awareness into concrete purchasing actions for this demographic (Navas et al., 2021). Specifically, the study will analyze the influence of digital eco-labels and user-generated content on Gen Z's green purchase intentions, considering the significant role of social media influencers in

shaping their consumption patterns (Panopoulos et al., 2022). This is particularly relevant given that Gen Z frequently uses digital platforms and demonstrates a high affinity for influencer content, which often intersects with environmental concerns (Panopoulos et al., 2022).

Thus, this research paper aims to study the shopping habits of the Generation Z (Gen Z) and their awareness about the environmental friendly products over the internet. It will be helpful for the purpose of knowing the spending habits of the today's modern era people and also helpful for the policy makers who are studying the market.

2. STATEMENT OF PROBLEM

Many studies has been done in this topic about that preference habits of the Generation Z (Gen Z). They have addressed different issues related to their choice, behaviour and preference but very few papers cover the issue that this paper addresses. The current paper addresses the awareness and preference of digital eco - labels which are seen among them through the online shopping behaviour which is only based on Cuttack district of Odisha.

3. RELEVANCE OF THE STUDY

Nowadays world is moving towards the protection of environment and have been more concerned about the sustainability. People are moving towards the environment friendly products. Today's generation is called the era of young people (Generation Z) are the future of tomorrow so it is relavance to check their awareness and willingness to pay towards the environment friendly (eco labeled) products.

4. LIMITATIONS OF THE STUDY

1. This study covers only Generation Z (Gen Z) people and avoiding other aged people through its study.
2. This study covers only few people which are from the Cuttack district of Odisha.
3. Convenience Sampling has been used which may create biasedness in the selection of data

4. REVIEW OF LITERATURE

(Califano et al, 2025) examined Italian consumers' preferences for eco-labels on fresh tomatoes using a discrete choice experiment. Results showed that consumers were willing to pay a premium for organic, IPM, and "Zero Residue" certifications, with organic having the highest WTP. A positive interaction between IPM and "Zero Residue" suggested that combining these labels enhances perceived environmental and food safety benefits, aligning with health- and eco-conscious consumer preferences.

(Pednekar, 2024) conducted a study on "The influence of Eco-friendly Product Labels on Online Shopping Behaviour" showed that such labels help consumers identify sustainable products and shape their perceptions, attitudes, and purchase intentions. With rising environmental awareness, buyers prefer products that reflect eco-conscious values. Demographic factors and environmental concern also affect this relationship, highlighted the importance of eco-labels in promoting sustainable consumption and green marketing.

(Belch et al., 2024) explored factors influencing Generation Z's purchasing decisions regarding pro-ecological electrical machinery products in Poland, Slovakia, the Czech Republic, and Hungary. Using survey methods, Delphi technique, factor analysis, econometric modeling, and the Kruskal–Wallis test, the study identified price, previous experience, product durability, and individual needs as the most influential factors. Packaging, ecolabels, and time on the market were the least important. The model

revealed that greater knowledge, experience, and positive brand image strengthened the role of pro-ecological factors in purchase decisions, emphasizing the importance of branding in shaping sustainable consumer behavior.

(kabaja et al, 2023) organised a study on “Does environmental labelling still matter? Generation Z’s purchasing decisions” that examined how environmental labeling affects Generation Z’s purchasing behavior. It found out that Gen Z is highly aware of environmental issues and motivated to make eco-friendly choices. However, a lack of trust in environmental labels can hinder sustainable consumption. Overall, the study confirmed that environmental labeling still influences Gen Z’s buying decisions and remains vital for promoting green consumer behavior.

(Ewe and Tjiptono, 2023) investigated the impact of brand familiarity, green consciousness (GC), and chronic regulatory focus on Gen Z consumers’ attitudes, purchase intentions, and willingness to pay for eco-friendly vs. non-eco-friendly products in Malaysia. Using a between-subject experimental design with 151 participants, the study found that familiarity with eco-friendly brands led to significantly higher attitudes, intentions, and willingness to pay compared to non-eco-friendly brands. Consumers with higher GC showed greater willingness to pay for familiar eco-friendly brands, while those with higher chronic promotion focus were more favorable toward unfamiliar eco-friendly brands. The study emphasized the importance of enhancing brand familiarity and highlighting eco-friendly attributes in marketing strategies.

(Wojciechowska-Solis and Barska, 2021) examined Polish consumers’ preferences for organic products in the context of sustainable consumption. Using a survey of 1,067 respondents and statistical tools like discriminant and regression analysis, the study found a significant relationship between environmental awareness and the willingness to purchase organic products. Key motives included health benefits, nutrient content, absence of additives, and taste. Eggs, fruits and vegetables, honey, dairy, and cereals were the most preferred organic products. The proposed model highlighted factors such as care for the environment, animal welfare, low processing, and short shelf life as key determinants of consumer behavior.

(Song et al, 2020) conducted a study on “Green marketing to gen Z consumers in China: Examining the mediating factors of an eco-label-informed purchase” explored how eco-labels influence green purchasing behavior among Gen Z consumers in China. It found out that eco-labels enhance perceived consumer effectiveness, product attributes, and environmental awareness, which together encourage sustainable buying behavior. The research highlighted that these factors mediate the relationship between eco-labeling and purchase decisions, offering valuable insights for promoting green marketing and responsible consumption among young consumers.

(Anh et al., 2020) examined Vietnamese Generation Z consumers’ willingness to pay (WTP) and trade-offs when purchasing eco-friendly apparel using the Discrete Choice Experiment method. Results showed that consumers were willing to pay 21.22% more for organic label products and 37.72% more for eco-friendly label items. Higher CSR awareness and income levels increased WTP for sustainable apparel. Consumers preferred products made in Vietnam and were least willing to buy apparel made in China. Eco-friendly attributes were valued more than organic ones. The findings highlighted the importance of CSR practices, strategic branding, and clear communication to promote sustainable apparel consumption.

(Liu et al., 2017) examined Chinese consumers’ preferences for eco-labeled rice through choice experiments with 435 participants across four provinces. Results showed that health benefits and environmental concerns were the main motivations for paying premiums for eco-labeled rice, while knowledge of production standards had little impact. The study also identified consumer segments to aid policymakers in targeting eco-label strategies.

(Ujii, 2014) in his study “Consumer preferences and willingness to pay for eco-labeled rice: A choice experiment approach to evaluation of Toki-friendly rice consumption” analyzed consumer preferences for eco-labeled “Toki-friendly” rice in Tokyo and Osaka using a hypothetical choice experiment and contingent valuation method (CVM). The study applied a latent class model to examine consumer heterogeneity and identified groups concerned with agrochemical use and paddy biodiversity. Findings showed that environmental and food safety concerns alone were not enough to attract consumers—taste also played a key role. Consumers aware of environmental issues were more willing to pay for Toki-friendly rice than general consumers.

5 RESEARCH GAP

A number of studies have been done on eco labels and environmental friendly products on Gen Z they have covered a wide range of areas such as some concerning about the behaviour of Gen Z, others about preference but a few studies have covered the awareness and willingness to pay towards the eco-labeled products which is a major concern. Moreover, few studies have been done in Odisha especially covering the Cuttack district of Odisha which this study covers. Therefore, this research will be beneficial to the researchers as well as the policy makers for further discussion and policy formulation.

6 RESEARCH OBJECTIVES

1. To study the awareness level of digital eco-labels among the Gen Z.
2. To examine the relationship between awareness and preference for products with digital eco-labels.
3. To explore the effect of willingness to pay extra for eco-labeled products.

7. RESEARCH HYPOTHESIS

H0: There is no significant impact of awareness of digital eco - labels on the Online Shopping among Gen Z.

H1: There is significant impact of awareness of digital eco-labels on the Online Shopping among Gen Z.

H0: There is no significant impact of preference of digital eco - labels on the Online Shopping among of Gen Z.

H1: There is significant impact of preference of digital eco - labels on the Online Shopping of among Gen Z.

8. RESEARCH METHODOLOGY

8.1 Research Design

This study follows a descriptive research design to understand the awareness and preference of Generation Z consumers towards digital eco-labels in online shopping platforms. It describes the existing level of knowledge, attitudes and behavioural intentions related to eco-labeled products among Gen Z respondents.

8.2 Sampling Design

The study adopts a convenience sampling method as the respondents were selected based on their accessibility and willingness to respond. The target population includes Generation Z individuals (aged 13 to 28 years) who actively shop online.

8.3 Sample Size and Data Source

A total of 208 valid responses were collected through a structured online questionnaire using google form. The study is based on primary data, collected from students and young professionals of Odisha.

8.4 Research Instrument

A five-point Likert scale was used in the questionnaire and to ensure the reliability of the questionnaire, a reliability test was conducted using Cronbach’s Alpha. The calculated Cronbach’s Alpha value for the scale was 0.92, which indicates a high level of internal consistency among the items (awareness level, preference of purchasing eco-label products and willingness to pay extra).

8.5 Statistical Tools Used

- Mean (to measure the awareness level and willingness to pay extra)
- Pearson’s Correlation (to find out the relationship between awareness and preference)

9 . ANALYSIS AND INTERPRETATION

Objective 1: To study the awareness level of digital eco-labels among Gen Z

| Statement | Mean | Interpretation |
|---|------|----------------|
| I check product information that mentions material, production methods and packaging. | 3.92 | High Awareness |
| I notice small tags, symbols or batches on eco friendliness, energy efficiency. | 3.89 | High Awareness |
| I prefer products that mention “eco-friendly”, “ethically made” or “sustainability”. | 4.03 | High Awareness |

Interpretation:

The analysis of awareness-related statements indicates that Generation Z respondents demonstrate a high level of awareness regarding digital eco-labels in online shopping. The mean values for all the three statements range between 3.89 to 4.03, which reflects a generally positive attitude and conscious consideration of eco-related information while making online purchase decisions. The overall Mean score comes to 3.95 indicates that most respondents are aware and attentive towards eco-labels and sustainability on online shopping platforms.

Objective 2: To examine the relationship between awareness and preference for products with digital eco-labels

| Variables | Correlation | Interpretation |
|--------------------------|-------------|-----------------------------|
| Awareness vs. Preference | 0.728 | Strong positive correlation |

Interpretation:

The correlation analysis between awareness and preference for digital eco-labeled products among Generation Z reveals a strong positive relationship with a correlation coefficient of $r=0.728$. This indicates that as the level of awareness regarding digital eco-labels increases, the preference for purchasing such eco-labeled products also rises correspondingly.

Hypothesis Testing (H1):

Since the correlation is positive, it is concluded that awareness significantly influences online shopping behaviour among Gen Z. Therefore, H1 is accepted.

Objective 3: To explore the effect of willingness to pay extra for eco-labeled products.

| Statement | Mean Score | Interpretation |
|--|------------|------------------|
| I sometimes check product details to ensure it is made in a sustainable way even if it costs a bit more. | 3.69 | High Willingness |
| I'm willing to pay slightly more for a product that is described as environmental friendly. | 3.67 | High Willingness |

Interpretation:

The analysis of willingness to pay extra for eco-labeled products among Generation Z reveals a high level of willingness. The mean values of 3.69 and 3.67 indicate that most respondents show a positive attitude toward supporting sustainable and environmentally friendly products, even if they come at a slightly higher cost. The overall mean score of 3.68 reflects that Gen Z consumers are fairly conscious of sustainability and are willing to pay a premium for eco-products.

Hypothesis Testing (H2):

As overall mean reflects a positive and high willingness to pay, it suggests that preference for eco-labeled products has a favourable impact on online shopping decisions. Therefore, H2 is accepted.

10. FINDINGS

1. The study found out that Generation Z has a high level of awareness (overall mean=3.95) regarding sustainable and eco-friendly products available online.
2. The correlation ($r=0.728$) proved that awareness level strongly influences preference for eco-labeled products.
3. A majority of respondents (average=3.68) expressed positive willingness to pay extra for eco-labeled products, indicating ethical and responsible consumption behaviour.
4. Despite of having good awareness level, some respondents remain neutral, suggesting that more awareness campaigns and digital education are needed.

11. CONCLUSION

The study revealed that Gen Z consumers show a high level of awareness about eco-labeled products. They actively notice symbols and prefer items marked as eco-friendly or sustainable. A strong positive correlation ($r=0.728$) between awareness and preference indicates that greater awareness increases preference for eco-labeled products. Majority of Gen Z are also willing to pay extra for eco-labeled products. Overall, the study concludes that Generation Z is environmentally conscious and positive toward sustainability.

12. SUGGESTIONS

1. Enhance eco-label visibility in online platforms. E-commerce sites should display digital eco-labels more prominently on product pages.

2. Awareness drives and social media campaigns should be conducted to educate young consumers about the meaning and authenticity of digital eco-labels. Collaboration with influencers and content creators can help reach Gen Z effectively.
3. Brands should link eco-labels to verifiable certification (like QR codes showing source or certification details) to build trust among buyers.
4. Online retailers can offer small discounts, loyalty points or cashback offers on eco-labeled products to encourage sustainable shopping behaviour among Gen Z consumers.
5. Since the willingness to pay extra is high, brands should focus on making eco-friendly products more affordable without compromising quality.

REFERENCE

1. Califano, G., Di Vita, G., Raimondo, M., Spina, D., D'Amico, M., & Caracciolo, F. (2025). Premium pricing for zero residue certification: The role of environmental concern and health consciousness in consumer preferences for eco-labels on fresh tomatoes. *Journal of Cleaner Production*, 518, 145928.
2. Pednekar, A. (2024). The Influence of Eco-friendly Product Labels on Online Shopping Behaviour. *Recent Trends in Commerce, Management, Accountancy and Business Economics*, 1.
3. Bełch, P., Hajduk-Stelmachowicz, M., Chudy-Laskowska, K., Vozňáková, I., & Gavurová, B. (2024). Factors determining the choice of pro-ecological products among generation Z. *Sustainability*, 16(4), 1560.
4. Kabaja, B., Wojnarowska, M., Ćwiklicki, M., Buffagni, S. C., & Varese, E. (2023). Does environmental labelling still matter? Generation Z's purchasing decisions. *Sustainability*, 15(18), 13751.
5. Ewe, S. Y., & Tjiptono, F. (2023). Green behavior among Gen Z consumers in an emerging market: eco-friendly versus non-eco-friendly products. *Young Consumers*, 24(2), 234-252.
6. Wojciechowska-Solis, J., & Barska, A. (2021). Exploring the preferences of consumers' organic products in aspects of sustainable consumption: The case of the Polish consumer. *Agriculture*, 11(2), 138.
7. Song, Y., Qin, Z., & Qin, Z. (2020). Green marketing to gen Z consumers in China: Examining the mediating factors of an eco-label-informed purchase. *Sage Open*, 10(4), 2158244020963573.
8. Anh, P. T. C., Huong, L. M., & Oanh, V. T. K. (2020). Generation Z willingness to pay for sustainable apparel: the influence of labelling for origin and eco-friendly material. *Journal of International Economics and Management*, 20(3), 42-59.
9. Liu, Q., Yan, Z., & Zhou, J. (2017). Consumer choices and motives for eco-labeled products in China: An empirical analysis based on the choice experiment. *Sustainability*, 9(3), 331.
10. Ujiie, K. (2014). Consumer preferences and willingness to pay for eco-labeled rice: A choice experiment approach to evaluation of Toki-friendly rice consumption. In *Social-ecological restoration in paddy-dominated landscapes* (pp. 263-279). Tokyo: Springer Japan.