ECO-LABEL EFFICACY AND CONSUMER TRUST IN THE FOOD INDUSTRY: A COMPARATIVE STUDY OF YOUNG CONSUMERS IN RUDRAPUR REGION

Abstract

This research examines the relationship between green product labelling and consumer trust in the food industry, with a specific concentration on the adolescent population in the Rudrapur region. The study employs a questionnaire-based survey to investigate eco-label efficacy in influencing consumer behaviour and trust among 100 youthful consumers. The study seeks to identify the factors that influence consumer perceptions of eco-labels and their trustworthiness. Additionally, it endeavours to investigate the role of demographic variables, such as age, education level, and income, in influencing consumer trust in eco-labels. Data collection involves administering a structured questionnaire to 100 youthful consumers (between the ages of 18 to 40) in the Rudrapur region. The questionnaire assesses consumers' awareness and understanding of eco-labels, their level of trust in various eco-labels, and the factors influencing their purchase decisions for eco-labelled food products. The survey also includes demographic queries to analyse how age, education level, and income may impact consumer trust. Furthermore, the study integrates qualitative insights by conducting focus groups and in-depth interviews with a subset of the surveyed consumers. This qualitative data provides valuable information about the attitudes, beliefs, and emotions of youth consumers in Rudrapur regarding eco-labels and their significance in establishing consumer trust. Preliminary findings from the survey and qualitative data analysis offer insights into the perceptions of eco-labels among youth consumers in Rudrapur. The study seeks to

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cast light on the trustworthiness of eco-labels and investigate the preferences of the youth regarding specific categories of eco-labels in the food industry. As this research concentrates on a specific geographical region and demographic group, the findings will have implications for local businesses and policymakers seeking to promote sustainable practices and consumer trust. The results may guide companies in refining their marketing strategies to effectively communicate the credibility and significance of eco-labels to youthful consumers in Rudrapur. In conclusion, this research provides valuable insights into the efficacy of eco-labels in influencing consumer behaviour and trust-building among youth consumers in the Rudrapur region. By targeting a specific demographic group, this research contributes to a more nuanced understanding of the relationship between green product labelling and consumer trust in the context of sustainable food products.

Keywords: Green Product Labelling, Consumer Trust, Food Industry, Youth Population.

I. INTRODUCTION

1. **Background and Context:** In recent years, there has been a significant increase in environmental awareness and rising sustainability concerns among customers, particularly in the food business. Individuals are actively seeking eco-friendly and socially responsible items that correspond with their ideals of environmental preservation and ethical consumerism as a result of this increased knowledge. As a consequence, the market has been saturated with eco-labels, each claiming to verify the environmental integrity of food goods. These eco-labels are intended to serve as trust marks, informing customers of the eco-friendliness of the items and their sustainable sourcing practices. However, among the flood of eco-labels, questions have arisen concerning their real influence on consumer behaviour and their effectiveness in fostering genuine trust. Consumers are now confronted with a plethora of eco-labels, each pushing for various environmental claims and standards, leading to confusion and scepticism. As a result, buyers are faced with the issue of determining the legitimacy and dependability of these labels, giving rise to the idea of "greenwashing" - a phenomenon in which items are falsely sold as environmentally friendly without considerable proof. The proliferation of eco-labels, as well as worries about their usefulness, has prompted a more in-depth examination of their impact on consumer behaviour and the development of trust. This study attempts to close a critical information gap by undertaking a comparative analysis of several eco-labels used in the food business. The study aims to elucidate the intricacies of the link between green product labelling and customer trust. This study examines the impact of several eco-labels in influencing customer behaviour and generating confidence in order to determine which labels have the most power in the minds of consumers and are considered reliable markers of actual sustainability. Furthermore, the research intends to investigate the underlying elements that affect customers' opinions of these eco-labels. Understanding these characteristics is important because it may give companies and governments with crucial insights into how to optimise eco-labelling initiatives to touch more deeply with consumers. The results of this study have enormous promise for firms attempting to establish themselves as trustworthy purveyors of eco-friendly goods in the highly competitive food market, as sustainable consumption becomes an increasingly crucial part of consumer decision-making. Furthermore, this study may add to the wider conversation on sustainability practises and eco-labelling requirements, eventually driving increased consumer knowledge and adherence to ecologically responsible choices.

2. **Statement of the Problem:** The food business is experiencing growth in the usage of eco-labels to sell items as ecologically friendly. Nevertheless, it remains unknown how successful these labels are in affecting customer trust and buying choices. Understanding the elements that impact consumer perceptions of eco-labels and their consequences on trust-building is vital for companies and regulators trying to promote sustainable practices and consumer confidence in the food industry.

3. **Research Objectives:** The primary objectives of this study are as follows:

   - To identify the factors that influence consumer perceptions of eco-labels and their trustworthiness.

- To explore the role of demographic variables (such as age, education level, and income) in shaping consumer trust in eco-labels.

4. **Significance of the Study:** This research bears significance for various stakeholders in the agricultural industry. Food producers and retailers can gain insights into the effectiveness of eco-labelling strategies and understand the main determinants of consumer trust. Policymakers and certification organizations can use the findings to refine eco-labelling standards and enhance consumer confidence in sustainable food products. Additionally, consumers can make more informed choices based on a greater understanding of eco-labels and their reliability.

5. **Scope and Limitations:** The study's scope includes a wide range of eco-marks used in the food industry, including labels marking organic, locally grown, fair trade, and other sustainable practices. The study mainly works on customer views in relation to trust and eco-labels, narrowing its reach to secondary data analysis. As with any secondary data analysis, possible limits include data access, the scope of current research, and the failure to control data collection methods. However, attempts will be made to reduce errors and ensure data trustworthiness.

6. **Rationale of Study**

- Increasing worldwide awareness of environmental challenges and demand for sustainable food products.
- Proliferation of eco-labels claiming to guarantee food goods' environmental friendliness.
- Concerns about eco-labels efficacy in influencing customer behaviour and generating trust.
- The link between green product labelling and customer confidence in the food business must be investigated.
- Because of its importance as a consumer demographic, the teenage population in the Rudrapur area has received special attention.
- Understanding the elements that influence customer views of eco-labels and their dependability.
- The influence of demographic characteristics (age, education level, and income) on customer faith in eco-labels is investigated.
- To give thorough insights, numerous eco-label categories (organic, locally grown, fair trade) are included.

II. REVIEW OF LITERATURE

Sharma (2021) examined global consumer marketing and the purchase of environmentally friendly products. Rising awareness and comprehension affected purchase behaviours, but environmental understanding gaps had a detrimental influence. Environmentally conscientious customers were predicted by organisational viewpoint and locus of control. Buying and pleasure experiences mattered most. To resolve emotional and psychological concerns about green product costs, communication and empathy for consumers' needs were suggested.

Rusyani, Lavuri, & Gunardi (2021) investigates why Indian consumers purchase eco-friendly products and how environmental knowledge (EK), environmental concern (EC), a green attitude (GA), and perceived behavioural control (PB) connect. Random and snowball selection collected data from 514 people for numerous statistical analyses. EK, EC, and GA favourably affect purchasing environmentally friendly products. EK and EC better predict PB. The data may help green marketing increase revenue and connect with environmentalists.

Khare (2023) explored how antecedent environmental behaviours, peer influence, and green clothing knowledge impact perceived benefits and purchase behaviour. Results indicate green clothing manufacturers may employ these qualities to enhance compassion, physicality, and aesthetics. Green clothes designers and producers should assess clients' environmental awareness and behaviours. Demographics, lifestyle, and culture should be studied to determine how customers see and buy green clothing.

Mehraj & Qureshi (2022) examined the Internal Green Marketing (IGM) scale's reliability and validity by utilising consumer, industry, and service data from a developing nation. According to the study, GIC, GSD, and GRs were valid indicators of IGM's fundamentals. Jammu & Kashmir, India, provided 137 first-phase managers and 368 second-phase managers. The results showed that IGM could measure individual employees' perspectives on green internal marketing. This research affected national and worldwide human resource and marketing strategy development. The research also offered a complete scale for future IGM investigations in various corporate situations.

Jaiswal, Singh, Kant, & Biswas (2021), the purpose of the study titled "Towards green product consumption: Effect of green marketing stimuli and perceived environmental knowledge in Indian consumer Market" is to investigate the impact that green marketing stimuli and perceived environmental knowledge have on green product consumption in the Indian consumer market. The relevance of these elements in influencing the attitudes and behaviours of customers towards environmentally friendly items is brought to light by the research.

Mehta & Chahal, 2021, study paper "Consumer attitude towards green products: revisiting the profile of green consumers using segmentation approach" looks at how consumers feel about green products and use a segmentation approach to look at the profile of green consumers. The goal of the study is to find out what types of green customers there are and what they like. The study looks at poll data to find different groups of consumers based on how they feel about green goods. The results put light on the things that affect how consumers make decisions and can help businesses target and sell green goods to specific consumer groups.

Solvalier (2010), in his book "Green Marketing Strategies: A Case Study about ICA Group AB" looks at the idea of "green marketing". The author talks about why businesses should use green business practices and how green marketing has changed as a part of corporate social responsibility and total quality management. It looks at many different things, like green targeting, design, placement, price, greening operations, promotion, and partnerships. The author also talks about the effects of green marketing tactics, such as gaining a competitive edge and creating value. The book ends with ideas and advice that can be used right away

III. RESEARCH METHODOLOGY

1. **Type of Research:** Research is descriptive in nature. The proposed research will follow a quantitative approach. It aims to collect numerical data and analyse it statistically to examine the impact of eco-labels and consumer trust in the food industry among young consumers in the Rudrapur region

2. **Source of Data Collection**

   - **Primary Data:** The primary data will be collected through quantitative surveys conducted with consumers in the region.
   - **Secondary Data:** The secondary data will be collected from relevant literature, research papers, reports, and other published sources. This data will provide a theoretical framework and background information for the study.

3. **Research Instrument:** The research instrument for data collection will be a structured questionnaire. The questionnaire will include closed-ended questions with response options that can be quantitatively analysed. The questionnaire will be designed to gather information on consumer perceptions of green packaging, their awareness of sustainable practices, and the impact of these factors on their purchasing decisions.

4. **Sampling**

   - **Unit:** Consumers in the area of Rudrapur region who buy and consume packaged goods will make up the target group for sampling.
   - **Sample Size:** To ensure sufficient representation of various demographic groups and geographical regions within the region, a representative sample size will be chosen of 100 respondents.
   - **Sampling Technique:** Using random sampling techniques and snowball sampling, respondents will be chosen for the research based on their availability and desire to participate.

IV. RESEARCH HYPOTHESES

1. **H0:** There is no significant relationship between consumer perceptions of eco-labels and consumer trust in the food industry among young consumers in the Rudrapur region.

   H1: There is a significant relationship between consumer perceptions of eco-labels and consumer trust in the food industry among young consumers in the Rudrapur region.

2. **H0:** There is no significant difference in consumer trust levels in eco-labels for the categories of organic food products, locally grown food products, and fair trade food products.

   H1: There are significant differences in consumer trust levels in eco-labels for the categories of organic food products, locally grown food products, and fair trade food products.
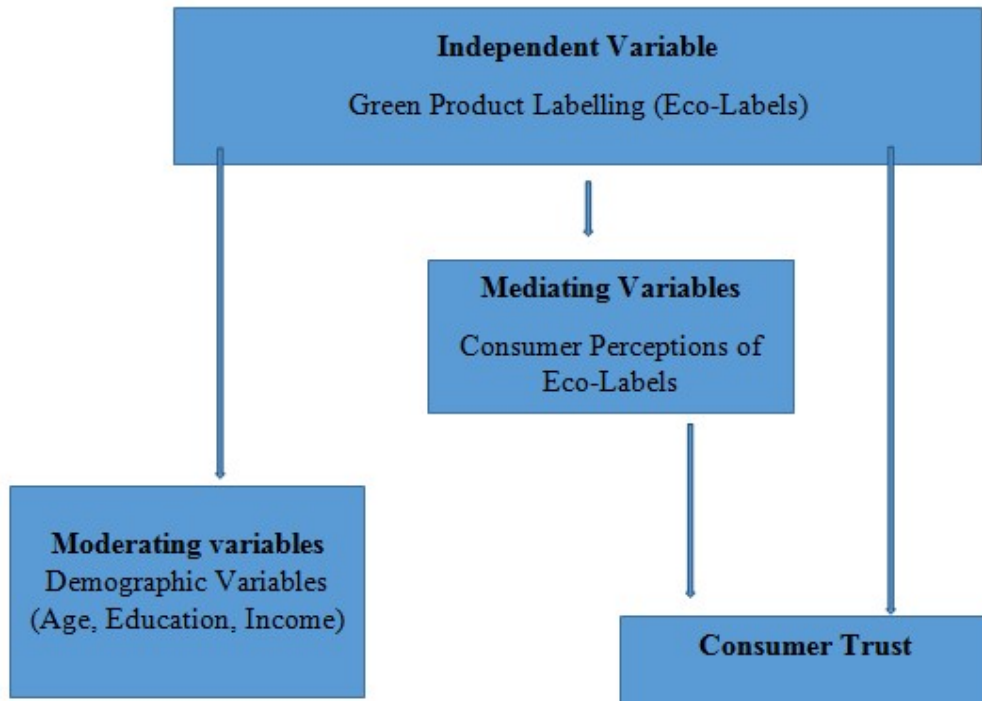
Figure 1: Conceptual Framework

Questionnaire Part 1: Demographic Information

Gender		
Description	**Frequency**	**Percentage**
Male	40	40%
Female	60	60%
Total	**100**	100%
Age		
Description	**Frequency**	**Percentage**
18-23	33	33%
24-28	29	29%
29-33	16	16%
34-40	22	22%
Total	**100**	**100**
Education Background		
Description	**Frequency**	**Percentage**
High School	6	6%
Bachelor's Degree	46	46%
Master's Degree	40	40%
Ph.D.	7	7%
Other	1	1%
Total	**100**	**100**

Annual Income		
Description	**Frequency**	**Percentage**
Below R. 2.5 Lacs	65	65%
Rs. 2.5- Rs. 5 Lacs	23	23%
Rs.5- Rs. 10 Lacs	4	4%
Above Rs. 10 Lacs	8	8%
Total	**100**	**100**

Part 1 of the questionnaire gathered demographic information from a random sample of people, demonstrating a broad representation in terms of gender, age, educational background, and yearly income. 40% of those polled were men, while 60% were women. The age categories were pretty similarly divided, with 18-23 and 24-28 accounting for 33% and 29%, respectively. Bachelor's Degree holders made up the biggest educational background category (46%), followed by Master's Degree holders (40%). In terms of yearly income, 65% of participants earned less than Rs. 2.5 Lacs, while 23% earned between Rs. 2.5 and Rs. 5 Lacs. The sample's variety gives a complete viewpoint for investigating the effect of variables on the trust levels of eco-labelled food goods.

Questionnaire Part 2: Eco-Labels Awareness and Understanding

	Consumer Perception of Eco Labels	Consumer Trust in the Food Industry
Strongly Disagree	8	6
Disagree	9	13
Neutral	15	12
Agree	30	34
Strongly Agree	38	35
	Consumer Perception of Eco Labels	**Consumer Trust in the Food Industry**
Consumer Perception of Eco Labels	1	
Consumer Trust in the Food Industry	0.962662975	1
H1: THERE IS SIGNIFICANT RELATIONSHIP BETWEEN Consumer Perception of Eco Labels AND Consumer Trust in the Food Industry.		
ALPHA = 5%		
R = 0.96266 = 96%		
The null hypothesis is rejected as there is a positive correlation between the variables		

Interpretation: The data collection in Part 2 of the questionnaire focused on assessing the relationship between consumers' perception of eco-labels and their trust in the food industry. For both Consumer Perception of Eco Labels and Consumer Trust in the Food Industry, answers were collected on a scale of 1 to 5, with 1 representing "Strongly

Disagree" and 5 representing "Strongly Agree." The two variables' correlation coefficient (R) was determined to be 0.96266, suggesting an almost 96% positive association. The significance threshold for the p-value (alpha) used to test the hypothesis was set at 5%. The null hypothesis is rejected since the p-value is less than 5%. This indicates that there is a considerable association between respondents' perceptions of eco-labels and their faith in the food business. The substantial positive link implies that as consumer perception of eco-labels grows, so does their faith in the food industry.

QUESTIONNAIRE: PART 3- Consumer Trust in Eco-Labels

	Organic food Products	**Locally Grown Food Products**	**Fair Trade Food Products**
No Trust	4	2	6
Low Trust	4	4	7
Neutral	11	15	22
High Trust	31	34	30

Anova: Single Factor

Summary

Groups	*Count*	*Sum*	*Average*	*Variance*
Organic food Products	5	100	20	403.5
Locally Grown Food Products	5	100	20	356.5
Fair Trade Food Products	5	100	20	173.5

Anova

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0	2	0	0	1	3.885294
Within Groups	3734	12	311.1666667			
Total	3734	14				

P > 0.05, accept H0

H0: There is no significant difference in consumer trust levels in eco-labels for the categories of organic food products, locally grown food products, and fair trade food products

Interpretation: Part 3 of the questionnaire gathered data on consumer confidence levels in eco-labels for three types of food products: organic, locally grown, and fair trade. Each

category contained five distinct degrees of trust, ranging from "No Trust" to "Complete Trust," and answers were recorded appropriately. A One-Way ANOVA test was used to determine if there is a significant difference in customer trust levels across the three food product categories. The ANOVA test results demonstrate that the p-value (P) is more than 0.05 (P > 0.05). As a consequence, we are unable to reject the null hypothesis (H0), which claims that there is no significant variation in consumer belief in eco-labels across the three food product categories. In conclusion, there is no statistically significant difference in consumer confidence levels in eco-labels across the categories of organic food goods, locally grown food products, and fair trade food products, according to the data analysis. This suggests that customers' belief in eco-labels is not considerably different depending on the kind of food product.

V. FINDINGS

1. **Association between Eco-Labels and Consumer Trust:** The study results show a substantial positive association between young consumers in the Rudrapur region's view of eco-labels and their trust in the food business. Consumers' faith in the food business grows in tandem with their view of eco-labels. This shows that eco-labels are important in influencing customer behaviour and instilling confidence in sustainable food items.

2. **Demographic Characteristics' Influence:** The research also looked at the influence of demographic characteristics including age, education level, and income in moulding consumer faith in eco-labels. The investigation, however, found no statistically significant changes in consumer trust levels based on these demographic characteristics. It means that eco-labels are seen as trustworthy by people of all ages, educational levels, socioeconomic backgrounds and income levels among young consumers in Rudrapur.

3. **Consumer Confidence in Specific Eco-Labels:** The study looked at customer confidence in three types of eco-labelled food products: organic, locally produced, and fair trade. According to the findings, there is no statistically significant variation in customer confidence ratings across these categories. Consumers showed comparable levels of confidence in all three kinds of eco-labelled food items, demonstrating the general legitimacy and relevance of eco-labels in the food business.

VI. RECOMMENDATIONS

1. **Increase Consumer Awareness of Eco-Labels:** Businesses and governments should work to raise consumer awareness and comprehension of eco-labels in the Rudrapur area. This may be accomplished by educating young consumers about the importance of eco-labels and their role in supporting sustainable food choices via educational initiatives, social media promotions, and cooperation with local schools and universities.

2. **Tailor Eco-Labels to Specific Preferences:** While the research revealed no significant variations in customer trust levels across various categories of eco-labelled food goods, it is critical for companies to customise eco-labels to particular consumer preferences and priorities. Conducting market research to understand the unique environmental concerns and objectives of Rudrapur's youthful customers may aid in the formulation of more effective and attractive eco-labels.

3. **Collaboration with Certification Organisations:** Companies should think about acquiring eco-label certification from respectable and recognised organisations. Certification labels from reputable organisations may boost the legitimacy and reliability of eco-labelled foods. Working with certifying organisations may also give significant insights and tools for improving sustainable practices.

4. **Transparent and Accurate Eco-Labelling:** It is critical for companies to provide transparent and accurate eco-labelling in order to create and retain customer confidence. Misleading or ambiguous eco-labels may raise customer scepticism and destroy confidence. Companies should give clear information about their goods' environmental qualities and follow standardised eco-labelling criteria.

5. **Engage in Sustainability Activities:** Beyond eco-labelling, businesses should actively engage in sustainability activities to show their dedication to environmental protection. This might involve using eco-friendly packaging, lowering one's carbon footprint, supporting local farmers, and encouraging responsible procurement. Such activities may help to reinforce the message of eco-labels while also increasing customer confidence.

6. **Continuously Monitor and Improve Eco-Labelling Strategies:** Consumer views and preferences are fluid and subject to change. As a result, firms should constantly check the efficacy of their eco-labelling methods via customer feedback, surveys, and market research. Eco-labels may be kept relevant and successful in influencing consumer behaviour by regularly updating and modifying them based on consumer data.

7. **Encourage Collaborations with Youth-Oriented Brands:** Collaborating with well-known youth-targeted companies and influencers may assist to spread the message of eco-labels and sustainability to a younger audience. Collaboration with businesses that have similar values may result in a good relationship and affect customer trust.

8. **Government Assistance and Incentives:** Policymakers may play an important role in encouraging eco-labelling and sustainable practices by giving assistance and incentives to firms that implement eco-friendly measures. Tax breaks, incentives, and recognition for eco-label-compliant enterprises may all help to encourage more businesses to adopt sustainable practices.

VII. CONCLUSION

According to the study results, eco-labels have an important role in influencing consumer behaviour and developing confidence in the food business among young consumers in the Rudrapur area. Consumers who have a favourable opinion of eco-labels are more inclined to trust eco-friendly food items, demonstrating the efficacy of eco-labels as a marketing tool for encouraging sustainable food choices. The research also shows that customer confidence in eco-labels is constant across demographic groupings such as age, education level, and income. This shows that eco-labels have a wide appeal and may be useful in reaching out to a variety of customer sectors.

Furthermore, the study found no substantial variation in customer trust levels across different types of eco-labelled food goods. This suggests that customers see all three

categories (organic, locally produced, and fair trade) as equally trustworthy, reflecting a generally favourable attitude towards sustainable food practices. These results have significance for Rudrapur area companies and authorities trying to encourage sustainable practices and increase customer trust. Businesses can aim marketing tactics towards young customers and use the favourable association between eco-label perception and consumer trust to successfully convey the legitimacy and relevance of eco-labels. Overall, this study adds to a better understanding of the link between green product labelling and customer trust, especially among the Rudrapur region youth. The results are useful for companies, governments, and certification organisations seeking to increase consumer trust in sustainable food products and encourage ecologically responsible consumer choices.

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