

Consumption Behaviour and its Impact on Consumer Empowerment in Punjab

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Abstract

This study investigates the dimensions of responsible consumer behavior and their impact on consumer empowerment. A sample of 600 consumers (300 rural and 300 urban) from Punjab, was selected using a multistage sampling technique across the Majha, Malwa and Doaba regions. Exploratory Factor Analysis revealed a robust three-factor structure including Consumer Vigilance, Consumer Assertiveness and Ethical and Sustainable Consumption which explained 60.82 percent of the total variance. Multiple linear regression analysis confirmed that these factors significantly predict consumer empowerment ($R^2 = 0.510$, $p < 0.001$), with Consumer Vigilance emerging as the strongest predictor ($\beta = 0.532$). Data collection involved urban and rural respondents selected through a mix of random and convenience sampling. The findings emphasize that being informed, assertive and ethically conscious are key drivers of consumer empowerment, offering insights for consumer education, policy-making and marketplace fairness initiatives.

Keywords: Consumer responsibilities, Consumer vigilance, Sustainable consumption, Consumer empowerment

JEL Classification: D12, D18, C38, C21

Introduction

Consumer awareness has become a global issue in recent years due to widespread instances of exploitation during goods purchases. The availability of counterfeit goods with the logos of well-known brands was startling and greatly perplexed consumers. This is particularly common in rural areas where brand knowledge is low. The educational level and lack of exposure to the products' promotional aspect are the reasons behind exploitation of consumers (Dharmarasu and Mathavan, 2019). Illiteracy, poverty and unemployment are some of the major reasons for lack of awareness of rights among consumers in India (Venkatesan and Leelavathi, 2020). Consumers who are more aware of their rights will be in a better position to evaluate a business and its offerings, draw connections between socially conscious business practices and the company's dedication to safeguarding the rights and interests of its customers, and be more inclined to reward businesses that they believe to be socially conscious and care about their rights (Bello et al., 2021). Numerous factors, including demographics, educational attainment, information availability, and the success of government programs, influence consumer awareness in India. Rights

and responsibilities go side by side. A consumer has several responsibilities namely: responsibility to make choices independently, to inform manufacturers and government about their needs and wants to be aware regarding the consumer protection rights and law, check the label of the products at the time of purchase, restrict unnecessary consumption and choose eco-friendly products. According to Arora et al. (2014), higher critical thinking, improved life skills, and increased self-confidence are all advantages of consumer awareness.

The importance of consumer empowerment in public policy, marketing tactics and consumer protection is becoming more widely acknowledged. Consumer empowerment, in its broadest sense, is the process by which people take charge of their consumption habits and purchase decisions. It entails giving customers the ability to obtain pertinent information, comprehend their rights and participate in the marketplace. Though it started in the social services and health sectors, the idea has subsequently developed into a major issue in business and marketing literature. Gibson (1991) defined empowerment as the social process of identifying, advancing, and strengthening people's capacities to fulfil their own needs, resolve their own issues, and gather the resources they need to take charge of their lives. Consumer empowerment has been

defined as a marketing and commercial strategy that aims to transform the consumer from a passive shopper into an active co-creator of value. This change was highlighted by Prahalad and Ramaswamy (2004) using the idea of “co-creation,” in which customers work with businesses to influence the goods and services they use. Giving customers options is simply one step in the empowering process; other steps include including them in decision-making and making sure their voices are heard.

There are several facets to consumer empowerment, including digital, structural, and psychological elements. A consumer’s internal sense of control, independence, and assurance in making wise selections are all aspects of psychological empowerment. On the other hand, structural empowerment describes the existence of outside organisations and systems like laws, platforms, or support systems that enable customers to take action based on their preferences. Another important aspect that has surfaced with the growth of digital platforms is digital empowerment. Customers who are empowered by digital technology can access information, evaluate and compare goods, communicate with service providers, and take part in evaluations and debates, all of which improve their capacity to make decisions. Digital technologies, especially social media, have drastically changed the power dynamics by enabling consumers to act as influencers, critics, and even content creators, greatly expanding their market presence and influence (Labrecque et al., 2015).

Access to reliable information, consumer education, technological innovation, and supportive legislative frameworks are only a few of the many antecedents of consumer empowerment. The most fundamental of these is having access to pertinent and clear information. According to Wathieu et al. (2002), consumers need to be informed in order to be empowered. Information asymmetry, in which companies have access to more information than customers, erodes consumer agency and frequently results in unfair corporate practices. The market as a whole and customers alike benefit from the many positive effects of consumer empowerment. Because they feel in charge and secure about their purchases, empowered customers are more likely to be satisfied. (Bélanger et al., 2002; Hoyer et al., 2010). Consumers who participate in the decision-making or product development process show greater brand loyalty in addition to expressing a better emotional connection to the product (Fuchs et al., 2010). Additionally, empowered customers are more inclined to join brand forums, offer comments, or interact with customer care in order to contribute to market discussions. But there are also a lot of obstacles in the way of consumer empowerment. The paradox of choice and information overload is one of the main problems. Although most people agree that having access to a wealth of information is advantageous, it may

also overwhelm customers and make decision-making more difficult. Too many options or contradicting information can cause customer immobility or discontent (Shankar et al., 2006). Keeping in view the significance of the study, the present investigation focussed on finding the extent of responsible behaviour and empowerment among rural and urban consumers of Punjab.

Data Sources and Methodology

A systematic procedure was designed for conducting the investigation, analysis and interpretation of the data. The population for the study consists of all the rural and urban consumers of goods and services in Punjab. The sample for the study comprised of 600 consumers of Punjab. Multistage sampling technique was adopted for sample selection. Punjab is divided into three socio-cultural regions viz Majha, Malwa and Doaba. A total of three districts were selected; one each from Majha, Malwa and Doaba region based on largest population size. For the selection of respondents from urban population, two cities were selected from each district based on simple random sampling and 50 respondents were selected from each city on the basis of convenience and willingness to reply. For the selection of respondents from rural population, two blocks were selected from each district on the basis of simple random sampling and two villages were selected from each block and 25 respondents were selected from each village on the basis of convenience and willingness to reply. Thus, a total of 600 respondents, 300 from urban and 300 from rural area were selected for the study. The primary data were collected with the help of structured and non-disguised questionnaire and this pertained to the year 2023-24.

Respondents were asked about consumer responsibilities that they perform while purchasing products from market and further its impact was studied on the empowerment of consumers. It also explored the factors that influence consumer empowerment where respondents were asked to rate the statements relating to responsibilities on 5-point scale of frequency where 1 stands for never and 5 stands for always. Statements relating to consumer due diligence, consumer complaint behaviour, ethical and sustainable consumption, consumer vigilance and caution, informed decision making were asked from respondents.

Analysis of the data was carried out in two steps. In the first step, preliminary data analysis was carried out. In the second step, main analysis was done. The data collected under the study was classified and tabulated as per the objectives of the study. The data was analyzed using SPSS software. Further the meaningful inferences were drawn as per the relevance of the study. Using SPSS, various tools and techniques like Exploratory factor analysis to identify the underlying dimensions of consumer responsibilities and regression to see the impact of consumer responsibilities undertaken on consumer empowerment was used. Following

statistical tools were used in the study.

Cronbach's alpha

The reliability of the scale can be checked by the commonly used method known as Cronbach's Alpha. Cronbach's alpha is the measure of internal consistency. This is the average of all possible halving coefficients obtained by dividing the scale items in different ways. In the current study, Cronbach's alpha was calculated to test the reliability of the scale.

The formula for Cronbach's alpha is as follow:

$$\alpha = \frac{N\bar{C}}{\bar{v} + (N-1)\bar{C}}$$

where,

N is equal to the number of items, \bar{c} is the average inter-item covariance among the items and \bar{v} equals the average variance.

Here, the obtained alpha value of 0.947 confirms that the items included in the questionnaire are consistently measuring the same underlying construct- performance of consumer responsibilities.

One Sample t- test

One sample t- test is a statistical procedure which is used to examine the mean difference between the sample and the population mean. In this test, random sample from the population is drawn and this sample is then compared to the population mean. The statistical inferences are drawn on the basis of p value, whether the sample mean deviates from the population mean or not. The formula for one sample t-test is as follow:

$$t = \frac{\bar{X} - \mu}{s/\sqrt{n}}$$

One sample t- test was applied to find the significant difference in mean score of responsibilities performed by consumers in the market.

Exploratory factor analysis

EFA is a statistical method used in multivariate statistics to explore the underlying relationship among a large set of variables. In factor analysis, variables showing high correlation are clubbed together into new latent variables known as factors. The extracted factors can be used as variables in the regression model without any problem of multi-collinearity. As this study aimed to understand the fulfillment of consumer responsibilities, factor analysis technique has been used in order to extract the constructs.

The study used orthogonal factor rotation method, where it is assumed that extracted factors are uncorrelated in addition to the advantage that factor scores generated out of orthogonal rotation procedure are unique. Here varimax rotation procedure was used which maximizes dispersion of loadings within factors and tries to load a smaller number of variables highly onto factor. The study

employed the latent root criterion or Eigen value criterion for determining the number of factors to be extracted, which states that only factors having Eigen value greater than 1.0 are considered significant.

Regression analysis

It is a statistical technique for estimating the relationships among variables. In linear regression, the model specification is that the dependent variable is a linear combination of the parameters. Regression analysis is a statistical technique for studying linear relationships. The measure of the strength of relationship between the independent and the dependent variables are designated with the adjusted R square. It begins by supposing a general form for the relationship, known as the regression model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Y is the dependent variable i.e. consumer empowerment and X1, X2 and X3 are the explanatory variables i.e. Consumer Vigilance, Consumer Assertiveness, Ethical and Sustainable consumption and ε is the residual term which represents the composite effect of all other types of differences not explicitly defined in the model. Here, multiple linear regression was used to see the impact of consumer responsibilities undertaken on consumer empowerment.

Results and Discussion

This study was undertaken to understand the consumer responsibilities undertaken by consumers of Punjab and see its impact on consumer empowerment. For fulfilling these purposes of the study, data was collected from consumers of rural and urban areas and inferences were drawn and discussed as follows:

Demographic profile of the consumers

The respondents were requested to provide information about the number of demographic variables, including gender, age, education qualification, annual family income, married status, occupation and size of the family. Table 1 presents the demographic profile of the respondents.

The demographic profile of the 600 respondents (300 rural and 300 urban) reveals a fairly balanced gender distribution, with females slightly outnumbering males (52.33% vs. 47.67%). Age-wise, the majority fall within the 25 to less than 35 years (26.8%) and 35 to less than 45 years (23.8%) brackets, with urban respondents generally younger. Most respondents are married (60.67%), though single individuals are more prevalent in urban areas. Educational attainment is significantly higher among urban respondents, with a larger proportion holding graduation and post-graduation degrees (84.7%) compared to rural counterparts. Occupationally, rural respondents are primarily engaged in farming (45.3%), while urban respondents are more likely to be in service (28.7%), professional roles (19.3%), or students (23.3%). Income levels are higher in

Table 1: Demographic profile of the respondents

| Demographic Variables | Rural (N=300) | | Urban (N=300) | | Total(N=600) | |
|----------------------------------|---------------|------------|---------------|------------|--------------|------------|
| | Frequency | Percentage | Frequency | Percentage | Frequency | Percentage |
| Gender | | | | | | |
| Male | 145 | 48.3 | 141 | 47.0 | 286 | 47.67 |
| Female | 155 | 51.7 | 159 | 53.0 | 314 | 52.33 |
| Age | | | | | | |
| Below 18 | 17 | 5.7 | 7 | 2.3 | 24 | 4.0 |
| 18 to 25 | 51 | 17.0 | 72 | 24.0 | 123 | 20.5 |
| 25 to 35 | 64 | 21.3 | 97 | 32.3 | 161 | 26.8 |
| 35 to 45 | 88 | 29.3 | 55 | 18.3 | 143 | 23.8 |
| 45 to 55 | 60 | 20.0 | 50 | 16.7 | 110 | 18.3 |
| 55 and above | 20 | 6.7 | 19 | 6.3 | 39 | 6.5 |
| Marital Status | | | | | | |
| Married | 188 | 62.66 | 176 | 58.6 | 364 | 60.67 |
| Single | 112 | 37.33 | 124 | 41.3 | 236 | 39.33 |
| Educational Qualification | | | | | | |
| Below matric | 26 | 8.7 | 5 | 1.7 | 31 | 5.2 |
| Matric | 58 | 19.3 | 9 | 3.0 | 67 | 11.1 |
| Higher secondary school | 87 | 29.0 | 31 | 10.3 | 118 | 19.6 |
| Graduation | 96 | 32.0 | 142 | 47.2 | 238 | 39.6 |
| Post graduation | 33 | 11.0 | 113 | 37.5 | 146 | 24.3 |
| Occupation | | | | | | |
| Service | 24 | 8.0 | 86 | 28.7 | 111 | 18.5 |
| Business | 50 | 16.7 | 40 | 13.3 | 90 | 15.0 |
| Professional | 13 | 4.3 | 58 | 19.3 | 71 | 11.8 |
| Student | 31 | 10.3 | 70 | 23.3 | 101 | 16.8 |
| House Wife | 35 | 11.7 | 30 | 10.0 | 65 | 10.8 |
| Retired | 11 | 3.7 | 14 | 4.7 | 24 | 4.0 |
| Farming | 136 | 45.3 | 2 | 0.7 | 138 | 23.0 |
| Monthly Income (in Rs) | | | | | | |
| Less than 50 thousand | 152 | 50.7 | 61 | 20.3 | 213 | 35.4 |
| 50 thousand to 1 Lac | 81 | 27.0 | 110 | 36.7 | 191 | 31.8 |
| 1 lac to 2 lacs | 49 | 16.3 | 91 | 30.3 | 140 | 23.3 |
| Above 2 lacs | 18 | 6.0 | 38 | 12.7 | 56 | 9.3 |
| Family Type | | | | | | |
| Nuclear | 113 | 37.6 | 137 | 45.7 | 250 | 41.66 |
| Joint | 187 | 62.3 | 163 | 54.3 | 350 | 58.33 |
| Family Size | | | | | | |
| Less than 4 | 93 | 31 | 67 | 22.3 | 160 | 26.6 |
| 4-6 | 154 | 51.3 | 163 | 54.3 | 317 | 52.83 |
| Above 6 | 53 | 17.7 | 70 | 23.3 | 123 | 20.5 |

urban areas, whereas over half of rural respondents earn less than Rs.50,000 monthly. Joint family structures dominate (58.33%), and the majority of families have 4 to 6 members (52.83%).

Consumer responsibilities undertaken by respondents

This section presents the results of a factor analysis conducted to identify the underlying dimensions of responsibilities undertaken by consumers. The analysis helps to group related behaviors and practices, offering a clearer understanding of how consumers fulfill their roles in the marketplace. The extracted factors reveal patterns in responsible consumer behavior and contribute to a more

structured interpretation of consumer responsibility.

An attempt was made to assess the extent to which consumers perform their responsibilities by comparing their mean responses against the test value ($\mu = 3$), which represents a neutral or moderate level of responsible consumer behavior. A one-sample t-test was applied to determine whether the mean scores for each item significantly differed from the midpoint value. The results, as shown in Table 2, indicate that all 21 statements related to consumer responsibilities had mean scores significantly higher than 3, with p-values less than 0.01, suggesting a statistically significant difference at the 1 percent level.

Table 2: Variables related to the consumer responsibilities undertaken by respondents

(N=600) ($\mu=3$)

| Items label | Statements | Mean Score | Standard Deviation | t-value | p-value |
|-----------------|--------------------------------------------------------------------------------------------------|------------|--------------------|---------|---------|
| X ₁ | I obtain information about variety of products available with the retailer. | 3.62 | 1.06 | 14.22 | 0.001 |
| X ₂ | I prefer sustainable, recyclable, and reusable products | 3.84 | 0.98 | 20.80 | 0.001 |
| X ₃ | I restrict unnecessary consumption | 3.52 | 1.19 | 10.68 | 0.001 |
| X ₄ | I prefer to purchase products with minimal packaging | 3.32 | 1.14 | 6.90 | 0.001 |
| X ₅ | I prefer to be a member of consumer group to protect rights and interests of consumers | 3.40 | 1.29 | 7.59 | 0.001 |
| X ₆ | I collect bill at the time of purchase | 3.46 | 1.15 | 9.71 | 0.001 |
| X ₇ | I prefer organic products over inorganic products | 3.31 | 1.16 | 6.54 | 0.001 |
| X ₈ | I purchase ethical products which do not harm animals, or promote child labour | 3.36 | 1.20 | 7.36 | 0.001 |
| X ₉ | I read the nutritional labels on the food products | 3.47 | 1.26 | 9.04 | 0.001 |
| X ₁₀ | I check Manufacturing date and expiry date. | 3.45 | 1.20 | 9.04 | 0.001 |
| X ₁₁ | I seek proper guarantee and warranty cards | 3.68 | 1.11 | 14.88 | 0.001 |
| X ₁₂ | I am in favour of filing a complaint in case of genuine grievances in consumer forums. | 3.29 | 1.24 | 5.62 | 0.001 |
| X ₁₃ | I follow the instructions given on the packaging before using the product. | 3.43 | 1.19 | 8.78 | 0.001 |
| X ₁₄ | I enquire about product price and quality before making the purchase. | 3.48 | 1.24 | 9.51 | 0.001 |
| X ₁₅ | I make complaint in case of defective product or deficiency in service. | 3.52 | 1.21 | 10.46 | 0.001 |
| X ₁₆ | I enquire about after sale service at the time of purchase | 3.63 | 1.22 | 12.61 | 0.001 |
| X ₁₇ | I read through and understand the terms and conditions before signing any purchasing agreement. | 3.64 | 1.34 | 11.62 | 0.001 |
| X ₁₈ | I discuss with my family and friends before purchasing | 3.52 | 1.14 | 11.09 | 0.001 |
| X ₁₉ | I ask for repair and replacement in case of any product defect | 3.40 | 1.23 | 7.81 | 0.001 |
| X ₂₀ | I preserve necessary documents like purchase bill, warranty and guarantee cards etc. as evidence | 3.27 | 1.22 | 5.41 | 0.001 |
| X ₂₁ | I am cautious against false and misleading advertisement | 3.41 | 1.28 | 7.79 | 0.001 |

The highest mean scores were observed for items such as “I prefer sustainable, recyclable, and reusable products” (Mean= 3.84, SD = 0.98; $t = 20.88$), “I seek proper guarantee and warranty cards” (Mean= 3.68, SD = 1.11; $t = 14.88$), and “I cross check the quantity and ingredients of products mentioned on the label” (Mean= 3.68, SD = 1.07; $t = 15.53$), indicating that consumers are increasingly conscious of environmental impact and product quality. Similarly, items such as “I enquire about after sale service at the time of purchase” (Mean= 3.63, $t = 12.61$), “I read through and understand the terms and conditions before signing any purchasing agreement” (Mean= 3.64, $t = 11.62$), and “I obtain information about variety of products available with the retailer” (Mean= 3.62, $t = 14.22$) also received strong agreement, reflecting a high level of awareness and caution among consumers during the purchase process.

Even items with relatively lower mean scores, such as “I preserve necessary documents like purchase bill, warranty and guarantee cards etc. as evidence” (Mean= 3.27, SD = 1.22; $t = 5.41$) and “I am in favour of filing a complaint in case of genuine grievances in consumer forums” (Mean= 3.29, SD = 1.24; $t = 5.62$), still showed significant positive deviation from the test value. This suggests that while consumers may be somewhat less active in these areas, they still demonstrate a generally responsible attitude.

Overall, the findings indicate that consumers, on average, perform their responsibilities at a level significantly above the neutral point. These results reflect an encouraging trend toward greater consumer consciousness and responsible behavior in various aspects of purchasing, including ethical concerns, product information verification, complaint handling, and sustainability.

Table 3: Reliability statistics for understanding consumer responsibilities undertaken by respondents

| Reliability Statistics | |
|------------------------|-------------|
| Cronbach's Alpha | No of Items |
| 0.947 | 21 |

To assess the internal consistency and reliability of the scale used to measure performance of consumer responsibilities, Cronbach's alpha was computed. As shown in Table 3, the overall reliability coefficient for the 21-item scale is 0.947, which indicates an excellent level of internal consistency. In general, a Cronbach's alpha value above 0.70 is considered acceptable, while values above 0.90 reflect a highly reliable instrument. Therefore, the obtained alpha value of 0.947 confirms that the items included in the questionnaire are consistently measuring the same underlying construct- performance of consumer responsibilities. This high reliability strengthens the credibility of subsequent analyses and findings drawn from this instrument, ensuring that the scale is both dependable and suitable for further

statistical evaluation, such as factor analysis, correlation, or regression.

Table 4: Factor analysis diagnostics understanding consumer responsibilities undertaken by respondents

| | | |
|--------------------------------------------------|--------------------|----------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | 0.963 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 7834.440 |
| | Degree of freedom | 210 |
| | p-value | 0.001 |

Table 4 presents the results of two key diagnostic tests: the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity.

The KMO value obtained is 0.963, which is considered excellent (values above 0.90 indicate superb adequacy). This suggests that the sample size and the pattern of correlations are highly suitable for factor analysis. A high KMO value means that the variables share a common factor structure, thus justifying the use of factor analysis for data reduction and dimensionality assessment. Additionally, Bartlett's Test of Sphericity is highly significant, with a chi-square value of 7834.440 at 210 degrees of freedom, and a p-value of 0.001. This indicates that the correlation matrix is not an identity matrix, confirming that there are statistically significant relationships among variables.

Together, these diagnostics confirm that the data meet the essential assumptions for factor analysis, and proceeding with exploratory factor analysis is both appropriate and statistically justified for uncovering the latent structure of consumer responsibility behaviors.

Exploratory factor analysis was conducted to identify the underlying dimensions of consumer responsibilities. The results, presented in Table 5, reveal a clear factor structure consisting of three distinct components that together explain a significant proportion of the total variance in consumer responsibility behavior.

The first factor, labeled “Consumer Vigilance”, explains the highest amount of variance (36.95%) with an eigenvalue of 7.760. This factor comprises items reflecting careful and informed consumer behavior, including obtaining product information, reading terms and conditions, checking expiry and manufacturing dates, verifying nutritional information, ensuring warranty and quality assurance, and being alert to misleading advertisements. High factor loadings on these items (ranging from 0.512 to 0.722) suggest that these behaviors collectively represent a proactive and vigilant approach to purchasing, centered around information-seeking and verification before and after buying a product.

The second factor, named “Consumer Assertiveness”, accounts for an additional 15.68 per cent of the variance, with

Table 5: Factors summary for consumer responsibilities undertaken by respondents

| Items for consumer responsibilities | Label | Factor loading | Factor | Variance explained by the factor | Eigen value | | | |
|--------------------------------------------------------------------------------------------------|-----------------|----------------|------------------------|----------------------------------|-------------|-------------------------------------|------|-------|
| I obtain information about variety of products available with the retailer. | X ₁ | 0.722 | Consumer Vigilance | 36.95 | 7.760 | | | |
| I read through and understand the terms and conditions before signing any purchasing agreement. | X ₁₇ | 0.720 | | | | | | |
| I enquire about product price and quality before making the purchase. | X ₁₄ | 0.663 | | | | | | |
| I check Manufacturing date and expiry date. | X ₁₀ | 0.658 | | | | | | |
| I seek proper guarantee and warranty cards | X ₁₁ | 0.619 | | | | | | |
| I read the nutritional labels on the food products | X ₉ | 0.608 | | | | | | |
| I enquire about after sale service at the time of purchase | X ₁₆ | 0.598 | | | | | | |
| I enquire about product price and quality before making the purchase. | X ₁₄ | 0.567 | | | | | | |
| I collect bill at the time of purchase | X ₆ | 0.553 | | | | | | |
| I follow the instructions given on the packaging before using the product. | X ₁₃ | 0.530 | | | | | | |
| I am cautious against false and misleading advertisement | X ₂₁ | 0.512 | Consumer Assertiveness | 15.68 | 3.292 | | | |
| I ask for repair and replacement in case of any product defect | X ₁₉ | 0.706 | | | | | | |
| I make complaint in case of defective product or deficiency in service. | X ₁₅ | 0.668 | | | | | | |
| I am in favour of filing a complaint in case of genuine grievances in consumer forums. | X ₁₂ | 0.659 | | | | | | |
| I prefer to be a member of consumer group to protect rights and interests of consumers | X ₅ | 0.637 | | | | | | |
| I preserve necessary documents like purchase bill, warranty and guarantee cards etc. as evidence | X ₂₀ | 0.620 | | | | | | |
| I prefer organic products over inorganic products | X ₇ | 0.747 | | | | Ethical and Sustainable consumption | 8.19 | 1.720 |
| I restrict unnecessary consumption | X ₃ | 0.575 | | | | | | |
| I purchase ethical products which do not harm animals, or promote child labour | X ₈ | 0.566 | | | | | | |
| I prefer sustainable, recyclable, and reusable products | X ₂ | 0.552 | | | | | | |
| I prefer to purchase products with minimal packaging | X ₄ | 0.551 | | | | | | |

an eigenvalue of 3.292. This factor captures actions taken by consumers to assert their rights in the marketplace, including making complaints, seeking repairs or replacements, preserving purchase documents, and joining consumer groups. Factor loadings range from 0.620 to 0.706, indicating that this dimension is characterized by consumers' willingness

to act in defense of their interests and demand accountability when necessary.

The third factor, labeled "Ethical and Sustainable Consumption", explains 8.19% of the variance and has an eigenvalue of 1.720. It includes items that reflect concern

for environmental sustainability and ethical responsibility, such as a preference for organic, recyclable, and minimally packaged products, as well as the avoidance of unnecessary consumption and support for cruelty-free and fair labor products. The factor loadings, ranging from 0.551 to 0.747, suggest that these items form a coherent group reflecting a consumer orientation toward responsible and conscientious consumption practices.

Together, these three factors explain a substantial proportion of the variance (60.82%) in consumer responsibility behaviors, underscoring the multidimensional nature of responsible consumerism. The factor solution also demonstrates conceptual clarity, with each cluster of items aligning well with established constructs in consumer behavior literature. This validated structure can serve as a reliable framework for further analysis, policy development, and consumer awareness interventions.

Table 6: Reliability analysis of extracted factors of consumer responsibilities undertaken by respondents

| | Name of the factor | Cronbach's alpha | No. of items |
|------|-------------------------------------|------------------|--------------|
| I. | Consumer Vigilance | 0.909 | 11 |
| II. | Consumer Assertiveness | 0.840 | 5 |
| III. | Ethical and Sustainable consumption | 0.720 | 5 |

Following the factor extraction process, reliability analysis was conducted on each of the three identified factors to assess the internal consistency of the grouped items. Cronbach's alpha was used as the measure of reliability. The factor labeled "Consumer Vigilance", consisting of 11 items, demonstrated excellent reliability, with a Cronbach's alpha of 0.909. This indicates that the items grouped under this factor are highly consistent in measuring consumer vigilance, which includes behaviors such as information-seeking, label checking, and verifying quality and guarantees. The second factor, "Consumer Assertiveness", which comprises 5 items, reported a Cronbach's alpha of 0.840, indicating good internal consistency (Table 6). The third factor, "Ethical and Sustainable Consumption", also consists of 5 items and yielded a Cronbach's alpha of 0.720, which is acceptable. Overall, the reliability coefficients for all three factors exceed the threshold for acceptable reliability, confirming that the extracted dimensions are not only conceptually valid but also statistically robust. This supports the use of these factors in further statistical analyses, such as regression to understand consumer responsibility behaviors in greater depth.

To assess the extent to which consumers perform their responsibilities across various domains, one-sample t-tests were conducted comparing the mean responses to a test value of 3, which represents a neutral or moderate level of responsible behavior (Table 7).

The first dimension, Consumer Vigilance, had an overall mean score of 3.52 (SD = 1.21), which is significantly higher than the test value ($t = 10.50, p < 0.01$). This suggests that consumers demonstrate a vigilant approach in their purchase decisions, especially in checking product details such as expiry dates, manufacturing information, warranty, and labels. Among the highest scoring items in this category were "I seek proper guarantee and warranty cards" (Mean = 3.68) and "I obtain proper information about the variety of products available with the retailer" (Mean = 3.62), indicating a strong tendency toward informed and precautionary behavior before making purchases.

In the second category, Consumer Assertiveness, the overall mean score was 3.37 (SD = 1.24), which is also significantly above the neutral point ($t = 7.38, p < 0.01$), although slightly lower than the Consumer Vigilance factor. This reflects that consumers are moderately assertive in demanding their rights and addressing grievances. Notable behaviors include making complaints in the case of defective products (Mean = 3.52) and requesting repairs or replacements (Mean = 3.40). However, relatively lower scores for preserving documents (Mean = 3.27) and joining consumer groups (Mean = 3.40) suggest that some assertive behaviors are not as widely practiced.

The third factor, Ethical and Sustainable Consumption, recorded an overall mean of 3.47 (SD = 1.140), again significantly above the neutral value ($t = 10.47, p < 0.01$). This indicates an encouraging inclination toward environmentally and socially responsible consumption. The item "I prefer sustainable, recyclable, and reusable products" scored the highest across all categories (Mean = 3.84), reflecting strong consumer support for eco-friendly practices. Other items, such as restricting unnecessary consumption (Mean = 3.52) and avoiding products that promote animal harm or child labor (Mean = 3.36), further reinforce the emerging trend of conscious consumerism.

In summary, consumers exhibit a stronger tendency toward vigilance, followed by ethical and sustainable consumption, and moderate assertiveness in fulfilling their responsibilities. The statistically significant mean scores across all three dimensions ($p < 0.01$) highlight a positive overall attitude among consumers toward responsible consumption, though there is room for improvement, particularly in assertive rights-protection behaviors.

Impact of consumer responsibility performance on consumer empowerment

To examine the predictive relationship between consumer responsibility performance and consumer empowerment, a multiple linear regression analysis was conducted using three key factors—Consumer Vigilance, Consumer Assertiveness, and Ethical and Sustainable Consumption—as independent variables. The dependent variable in this model was consumer

Table 7: Overall mean score of consumer responsibilities undertaken by respondents(N=600) ($\mu=3$)

| Statement | Mean | S.D. | t-value | p-value |
|--------------------------------------------------------------------------------------------------|------|------|---------|---------|
| Consumer Vigilance | | | | |
| I obtain information about variety of products available with the retailer. | 3.62 | 1.06 | 14.22 | 0.001 |
| I read through and understand the terms and conditions before signing any purchasing agreement. | 3.64 | 1.34 | 11.62 | 0.001 |
| I enquire about product price and quality before making the purchase. | 3.48 | 1.24 | 9.51 | 0.001 |
| I check Manufacturing date and expiry date. | 3.45 | 1.20 | 9.04 | 0.001 |
| I seek proper guarantee and warranty cards | 3.68 | 1.11 | 14.88 | 0.001 |
| I read the nutritional labels on the food products | 3.47 | 1.26 | 9.04 | 0.001 |
| I enquire about after sale service at the time of purchase | 3.63 | 1.22 | 12.61 | 0.001 |
| I enquire about product price and quality before making the purchase. | 3.48 | 1.24 | 9.51 | 0.001 |
| I collect bill at the time of purchase | 3.46 | 1.15 | 9.71 | 0.001 |
| I follow the instructions given on the packaging before using the product. | 3.43 | 1.19 | 8.78 | 0.001 |
| I am cautious against false and misleading advertisement | 3.41 | 1.28 | 7.79 | 0.001 |
| Overall mean score | 3.52 | 1.21 | 10.50 | 0.001 |
| Consumer Assertiveness | | | | |
| I ask for repair and replacement in case of any product defect | 3.40 | 1.23 | 7.81 | 0.001 |
| I make complaint in case of defective product or deficiency in service. | 3.52 | 1.21 | 10.46 | 0.001 |
| I am in favour of filing a complaint in case of genuine grievances in consumer forums. | 3.29 | 1.24 | 5.62 | 0.001 |
| I prefer to be a member of consumer group to protect rights and interests of consumers | 3.40 | 1.29 | 7.59 | 0.001 |
| I preserve necessary documents like purchase bill, warranty and guarantee cards etc. as evidence | 3.27 | 1.22 | 5.41 | 0.001 |
| Overall mean score | 3.37 | 1.24 | 7.38 | 0.001 |
| Ethical and Sustainable consumption | | | | |
| I prefer organic products over inorganic products | 3.31 | 1.16 | 6.54 | 0.001 |
| I restrict unnecessary consumption | 3.52 | 1.19 | 10.68 | 0.001 |
| I purchase ethical products which do not harm animals, or promote child labour | 3.36 | 1.20 | 7.36 | 0.001 |
| I prefer sustainable, recyclable, and reusable products | 3.84 | 0.98 | 20.88 | 0.001 |
| I prefer to purchase products with minimal packaging | 3.32 | 1.14 | 6.90 | 0.001 |
| Overall mean score | 3.47 | 1.14 | 10.47 | 0.001 |

empowerment.

As shown in Table 8, the model yielded a multiple correlation coefficient (R) of 0.714, indicating a strong positive relationship between the predictor variables and consumer empowerment. The R Square value of 0.510 signifies that approximately 51 percent of the variance in consumer empowerment can be explained by the combined influence of the three factors of consumer responsibility performance. The Adjusted R Square, which accounts for the number of predictors and sample size, is 0.508, indicating

a very minimal loss of explanatory power and affirming the robustness of the model. The standard error of the estimate (0.858) reflects the average distance that the observed values fall from the regression line. A lower standard error indicates a better model fit, and in this context, the value is reasonably low, further supporting the strength of the model.

The model demonstrates that consumer responsibility behaviors are significant predictors of consumer empowerment, highlighting the importance of fostering responsible consumption habits as a strategy to strengthen

Table 8: Model summary of factors consumer responsibility performance on consumer empowerment

(N = 600)

| Model | R | R Square | Adjusted R Square | Std. Error |
|-------|-------|----------|-------------------|------------|
| 1 | 0.714 | 0.510 | 0.508 | 0.858 |

a. Predictors: (Constant), Predictors: (Constant), Consumer Vigilance, Consumer Assertiveness, Ethical and Sustainable consumption

consumer rights, confidence, and active participation in the marketplace.

To further validate the impact of consumer responsibility behaviors on consumer empowerment, an ANOVA (Analysis of Variance) test was conducted as part of the multiple linear regression analysis. Table 9 presents the results of the model's goodness-of-fit.

The regression sum of squares is 456.614 with 3 degrees of freedom, and the residual sum of squares is 438.261 with 595 degrees of freedom, resulting in a total sum of squares of 894.875. The mean square for regression is 152.205, and the mean square for residual is 0.737. The resulting F-statistic is 206.639, with a significance level (p-value) of 0.001, which is well below the 0.05 threshold. This indicates that the regression model is statistically significant at the 5% level, and the predictors—Consumer Vigilance, Consumer Assertiveness, and Ethical and Sustainable Consumption—collectively contribute meaningfully to the variance in

consumer empowerment. The high F-value and significant p-value confirm that there is a statistically significant linear relationship between consumer responsibility performance and consumer empowerment. These findings reinforce the earlier model summary, which showed that the independent variables explain 51 percent of the variance in consumer empowerment.

Table 10 presents the regression coefficients resulting from the multiple linear regression analysis conducted to assess the influence of consumer responsibility dimensions on consumer empowerment. The regression model is statistically significant, as all predictor variables have p-values less than 0.05, confirming their meaningful contribution to consumer empowerment.

The unstandardized coefficient (B) for Consumer Vigilance is 0.651, with a standard error of 0.035 and a t-value of 18.547 ($p < 0.001$). The standardized beta coefficient ($\beta = 0.532$) further confirms that Consumer Vigilance is

Table 9: Relationship between consumer responsibility performance and consumer empowerment

(N = 600)

| Model | Sum of Squares | Degree of freedom | Sum of Mean Square | F stat | p-value |
|------------|----------------|-------------------|--------------------|---------|---------|
| Regression | 456.614 | 3 | 152.205 | 206.639 | .000 |
| Residual | 438.261 | 595 | 0.737 | | |
| Total | 894.875 | 598 | | | |

Dependent Variable: Consumer empowerment

Predictors: (Constant), Consumer Vigilance, Consumer Assertiveness, Ethical and Sustainable consumption

Table 10: Coefficients of consumer responsibility performance on consumer empowerment

(N = 600)

| Model | Unstandardized Coefficients | | Standardized Coefficients | t stat | p-value |
|-------------------------------------|-----------------------------|------------|---------------------------|--------|---------|
| | B | Std. Error | Beta | | |
| (Constant) | 3.431 | 0.035 | | 97.834 | 0.001 |
| Consumer Vigilance | 0.651 | 0.035 | 0.532 | 18.547 | 0.001 |
| Consumer Assertiveness | 0.497 | 0.035 | 0.405 | 14.110 | 0.001 |
| Ethical and Sustainable consumption | 0.302 | 0.035 | 0.247 | 8.594 | 0.001 |

Dependent Variable: Consumer empowerment

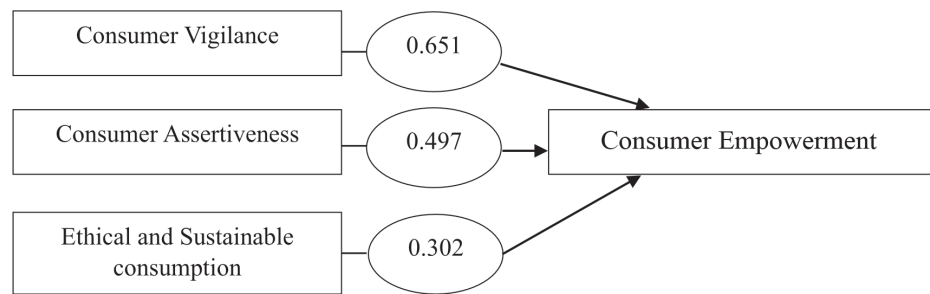


Figure 1: Impact of consumer responsibility performance on consumer empowerment

the strongest predictor among the three, contributing the most to variations in consumer empowerment. Consumer Assertiveness has a B value of 0.497, a t-value of 14.110, and a standardized beta of 0.405, which is also statistically significant ($p < 0.001$). This suggests that assertive actions—such as making complaints, preserving documents, and participating in consumer advocacy—significantly enhance a consumer's sense of empowerment.

Ethical and Sustainable Consumption has a Beta value of 0.302, a t-value of 8.594, and a standardized beta of 0.247, also significant at the 5 percent level. Although its contribution is comparatively lower than the other two factors, it still plays a meaningful role in predicting consumer empowerment, especially in the context of responsible and value-driven consumption. The constant (intercept) value is 3.431, which represents the expected level of consumer empowerment when all predictors are at zero.

Conclusions and Policy Implications

The results highlight that responsible consumption involves careful scrutiny, active rights defense, and ethical awareness offers a clear framework for policy and educational efforts. Overall, the EFA results affirm that responsible consumer behavior is not a single construct but a complex interplay of vigilance, assertiveness, and ethical considerations. Recognizing and promoting these distinct dimensions can enhance the effectiveness of interventions aimed at fostering more informed, empowered, and sustainable consumers. The results indicate that all three factors namely Consumer Vigilance, Consumer Assertiveness, and Ethical and Sustainable Consumption significantly and positively influence consumer empowerment. Among them, Consumer Vigilance exerts the most substantial impact, followed by Consumer Assertiveness, and then Ethical and Sustainable Consumption. These findings emphasize that empowered consumers are those who are well-informed, proactive, and ethically conscious, highlighting the importance of promoting responsible consumer behaviors through education and policy initiatives. Consumer education is central to empowerment. National awareness campaigns should inform citizens of their rights and complaint procedures, especially in rural and low-literacy regions. Integrating consumer rights education

into school curricula will foster early awareness, while digital literacy programs must equip all age groups with skills to navigate the online marketplace safely. With the rapid rise of e-commerce, fair digital marketplace regulations are crucial. Online platforms must provide clear product information, verified sellers, transparent policies, and assume liability for sellers when necessary. These measures ensure accountability and protect users from fraud or substandard services. Sustainability and ethical considerations are also essential in empowering consumers. With the help of the study's findings, policymakers can improve and update current consumer protection laws to make them more inclusive, region-specific, and sensitive to the various requirements of both urban and rural communities. A knowledgeable and contented consumer base supports the state's overall socioeconomic development and is essential to the robust operation of a competitive market economy. Additionally, responsible company practices, ethical purchase habits, and a decrease in market exploitation are all results of consumer empowerment. Sustained progress in the protection of consumer rights and the development of a more just and equitable marketplace throughout Punjab will require constant observation, community input, and flexible tactics.

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