# Determinants of Consumer Acceptance of Refurbished and Recycled Products: Evidence from the Delhi NCR Region

**Ms. Pooja Yadav**
*Research Scholar, Indira Gandhi National Open University, New Delhi.*

## ABSTRACT

The market for repaired and recycled goods has expanded due to the rising emphasis on sustainability and circular economy principles. However, a number of psychological and marketing-related factors continue to affect consumer adoption of such items. This study looks at how consumers in the Delhi NCR area accept refurbished and recycled goods in relation to quality perception, marketing elements, perceived risk, and social stigma. A structured questionnaire was used to gather primary data from 205 respondents; 167 valid replies were taken into consideration for analysis. Using SPSS, the study employed multiple regression analysis, correlation analysis, descriptive statistics, and percentage analysis. The results show that while perceived danger and social stigma have a considerable negative impact on consumer acceptability, marketing considerations and quality perception have a significant positive impact. The significance of trust-building tactics, including warranties, certifications, and merchant reputation, is highlighted by the regression model, which accounts for 56% of the variation in consumer acceptance ($R^2 = 0.56$). The study comes to the conclusion that increasing marketing assurance and lowering perceived hurdles can boost Indian consumers' acceptance of recycled and refurbished goods.

**Keywords:** Refurbished products, recycled products, consumer acceptance, perceived risk, social stigma, marketing factors, sustainability.

## INTRODUCTION

The increasing demand for natural resources, along with rising environmental awareness, has expedited the transition from a linear "use and discard" consumer model to a circular economy. In this setting, refurbished and recycled items have emerged as viable alternatives for reducing waste, conserving resources, and extending product life cycles. Refurbished products, which are returned to usable condition after usage, and recycled products, which are made from recovered materials, are increasingly available in industries such as electronics, textiles, and household items. Despite the environmental and economic benefits, customer acceptance of these items is mixed.

From a marketing standpoint, consumer reluctance is frequently caused by psychological and perceptual obstacles rather than a lack of availability. Consumer perceptions of refurbished and recycled goods are often influenced by concerns about product quality, durability, hygiene, and after-sales support. Furthermore, even among ecologically informed consumers, the perceived risk and social stigma attached to "used" or "recycled" products continue to impact purchases. decisions. At the same time, cost advantages and rising awareness of sustainability offer powerful incentives that, when properly conveyed, can have a favorable impact on acceptance. In order to close the gap between consumer behavior and sustainability goals, marketing is essential. Businesses may affect how consumers view refurbished and recycled goods by using techniques of trust-building, transparent communication, and proper positioning. For companies looking to implement circular economy practices while maintaining their competitiveness, it is crucial to comprehend the elements that promote or hinder consumer acceptance.

By investigating important marketing-related elements such as perceived quality, perceived risk, environmental

Corresponding Author: Ms. Pooja Yadav, 1602pry@gmail.com

concern, and price advantage, this study aims to investigate customer acceptance of recycled and refurbished goods. The study intends to add to the expanding body of knowledge on circular consumption and sustainable marketing by examining how these factors influence customer attitudes and purchase intentions. For marketers, legislators, and sustainability-focused organizations working to encourage ethical consumption and long-term environmental well-being, the results should provide insightful information.

## LITERATURE REVIEW
### Quality Perception
One of the most important factors influencing consumers' adoption of recycled and refurbished goods is their impression of quality. Refurbished products are frequently linked by consumers to wear, previous use, and technical obsolescence, which results in consistently poorer quality assessments and a decreased likelihood of purchase. According to Böller et al. (2022), these presumptions hold true even in cases where new items' objective performance is comparable. According to empirical data from the electronics industry, consumers' fear of functional and performance gaps in refurbished alternatives can lead to a 20–30% cannibalization of new product sales due to quality doubt (Guo et al., 2022).

These views are especially strong in the Indian context. According to survey-based research, about 51% of consumers believe that recycled plastic products are less durable and aesthetically pleasing. Nonetheless, the existence of globally acknowledged quality signals, such as ISO certifications, considerably raises perceived quality ratings by over 25% (Raja et al., n.d.; Gaur et al., 2025). Further evidence that quality perceptions are dynamic and can be influenced by experience and reassurance mechanisms comes from longitudinal research, which shows that repeated exposure through trials and usage experiences gradually improves perceived reliability and lowers skepticism over time (Vidal-Ayuso et al., 2023).

### Perceived Risk
The adoption of refurbished and recycled products is significantly hampered by perceived risk, with functional and financial issues predominating among customer concerns. Nearly 60% of non-buyers mention warranty limitations and uncertainty about repair costs as the main reasons for avoidance, according to Abbas et al. (2024). Based on prospect theory, Guo et al. (2022) contend that even though reconditioned products are more affordable, consumers are more averse to them because they consider possible losses from product failure to be twice as significant as financial savings.

Post-purchase dissatisfaction rates of about 35% are seen in Indian B2C markets, and this is mostly due to variable quality standards and unreliable refurbishment procedures (Sharma et al., 2025). However, when third-party audits and certification procedures are used, this discontent is significantly reduced. The importance of perceived risk is further supported by meta-analytic results, which show that in circular economy scenarios, risk perceptions explain about 40% of the difference between positive sustainability views and actual purchase intentions (Vidal-Ayuso et al., 2023).

### Social Stigma
Beyond practical considerations, customer opposition to recycled and reconditioned goods is greatly influenced by social stigma. Particularly among urban customers, stigma frequently associates these products with lower social standing, resulting in what Gupta and Ogden (2009, as quoted in subsequent studies) refer to as "second-hand shame." According to qualitative data, almost 45% of respondents feel uneasy about societal judgment while thinking about reconditioned products.

These impacts are further amplified by cultural context. Positive word-of-mouth for reconditioned clothing and

household appliances decreased by 28% in collectivist societies because of  worries about sanitation, social standards, and perceived norm violations (Biswas & Roy, 2015, as mentioned in later literature). However, recent intervention-based research shows that stigma is flexible. By redefining refurbished consumption as "smart sustainability" rather than economic sacrifice, influencer-led marketing and aspirational messaging have been seen to boost adoption by up to 32% (Setyowati et al., 2025). The requirement for culturally responsive marketing tactics is highlighted by cross-cultural comparisons that regularly show higher levels of stigma in emerging markets compared to established nations (Böller et al., 2022).

## Marketing Factors

In order to overcome customer reluctance and promote acceptance of recycled and refurbished items, marketing-related aspects are crucial. The most significant factors are always retailer reputation and warranty terms, which together account for almost half of the variation in the adoption of used electronics (Abbas et al., 2024). From a behavioral standpoint, Theory of Planned Behavior models show that about 65% of purchase intentions are determined by consumer attitudes and subjective norms, with green advertising serving as a significant moderator that reinforces pro-circular consumption behaviors (Sharma, 2023).

By improving product transparency and accountability, Extended Producer Responsibility (EPR) frameworks in India's regulatory environment boost customer trust and lead to an anticipated 22% rise in demand after policy exposure (Biswas et al., 2024). Additionally, pricing techniques continue to be crucial, especially in stigmatized markets. According to studies, discounts between thirty and fifty percent produce the best return on investment and greatly increase consumer acceptance when paired with value-based framing as opposed to just cost-saving arguments (Setyowati et al., 2025).

## Theoretical Framework

The Theory of Planned Behavior (TPB) uses attitudes, subjective standards, and perceived behavioral control to explain why consumers embrace recycled and refurbished goods. Positive environmental attitudes boost intention, but actual buying behavior is frequently constrained by perceived lack of control because of quality uncertainty and limited warranties, creating an attitude–behavior gap (Ajzen, 1991; Sharma, 2023).

The acceptance of reconditioned products is hampered by ambiguity, according to Perceived Risk Theory. By raising consumer concern about product failure and post-purchase losses, functional, financial, and social risks lower purchase intention. According to empirical research, perceived risk is a major predictor that has a negative impact on acceptance in situations involving circular consumption (Bauer, 1960; Abbas et al., 2024).

Prospect theory emphasizes loss aversion, which helps to explain consumer hesitancy. Risk reduction has a greater impact on acceptance than price reductions because consumers value potential losses from restored product failure more than gains like lower prices or environmental benefits (Kahneman & Tversky, 1979; Guo et al., 2022).

Signaling theory sheds light on how businesses might reduce uncertainty. Consumer acceptance of refurbished goods is improved by quality signals including warranties, certifications, and merchant reputation, which serve as trust cues to improve perceived quality and lower risk perceptions (Spence, 1973; Böller et al., 2022).

Lastly, the Value-Belief-Norm (VBN) Theory illustrates how sustainable buying intentions are motivated by environmental values; yet, this influence is frequently diminished by practical constraints. Research indicates that moral standards by themselves are inadequate unless they are accompanied by robust marketing and quality guarantees (Stern et al., 1999; Vidal-Ayuso et al., 2023).

**RESEARCH GAP**

First, Western or international markets are the subject of the majority of current research on recycled and refurbished goods. The Indian market, where customers are highly price-sensitive, influenced by social standing, and frequently impacted by cultural shame surrounding used goods, is the subject of very few studies. Furthermore, little study has been done to connect marketing tactics like warranties, certifications, and anti-stigma efforts that affect actual purchasing decisions with Indian legislation like Extended Producer Responsibility (EPR).

Second, even if a large number of consumers are conscious of environmental and sustainability issues, this understanding does not always result in the purchase of reconditioned goods. The difference between intended and actual conduct is evident. There is currently a dearth of research detailing how branding, green advertising, discounts, and incentives assist in turning favorable opinions into actual purchases, particularly in industries like electronics, fashion, and home appliances.

Third, key aspects such as quality perception, perceived danger, and social stigma are frequently investigated individually. Very few studies look into how these characteristics interact with marketing features like retailer credibility, warranties, and quality certifications. The significance of environmental concern in building or weakening these ties has also not been thoroughly examined in rising markets such as India.

Fourth, while great emphasis is paid to the supply side of recycling and refurbishment, consumer-oriented research is scarce. The function of consumer education in fostering trust, decreasing misconceptions, and promoting secondary markets, particularly those involving the informal sector, has received little attention.

Finally, many studies rely heavily on the Theory of Planned Behavior and employ cross-sectional study methodologies. There are few studies that use other theories, such as prospect theory, as well as longitudinal or mixed-method approaches, to capture post-purchase experiences and policy implications across time.

This study seeks to fill these gaps by investigating how marketing elements influence customer acceptability of reconditioned products in the Indian setting.

## RESEARCH OBJECTIVES
1. To evaluate consumer acceptance of refurbished and recycled products in India.
2. To investigate the impact of quality perception and perceived risk on consumer acceptability.
3. To evaluate the impact of social stigma on customer buying decisions.
4. To analyze how marketing considerations (warranties, retailer reputation, certifications, and pricing benefits) impact consumer acceptability.
5. Make practical marketing proposals to promote the use of refurbished and recycled items.

## RESEARCH HYPOTHESIS
H1: Quality perception significantly influences consumer adoption of refurbished and recycled products.

H2: Marketing elements (warranties, retailer reputation, certifications, and price benefits) significantly increase consumer adoption of refurbished and recycled products.

H3: Perceived risk significantly reduces consumer acceptance of refurbished and recycled products.

H4: Social stigma significantly reduces customer acceptance of refurbished and recycled products.

## RESEARCH METHODOLOGY
### Research Design
This study investigates customer acceptance of refurbished and recycled products using a descriptive and explanatory research design. The descriptive component aids in understanding customers' attitudes and perceptions, whereas the explanatory method allows for the investigation of the correlations between specific factors—such as quality perception, perceived risk, social stigma, and marketing factors—and consumer acceptability.

### Population and Sample
The research is based on primary data, which were acquired directly from customers. The study's target group consisted of customers in the Delhi NCR region who were aware of refurbished or recycled products, notably in the electronics and household appliance sectors. A structured questionnaire was delivered to 205 respondents in the Delhi-NCR region, both online and offline. Of these, 167 completed and valid responses were chosen for the final analysis.

Twenty-nine surveys were not tried, and the remaining responses were rejected due to missing or improperly completed information. Only usable replies were used to verify that the analysis was reliable and accurate.

### Data Collection Instrument
A systematic questionnaire created especially for the research was used to gather data. The survey is split into two parts. While the second segment contains statements assessing important study variables like quality perception, marketing considerations, perceived risk, social stigma, and consumer acceptability, the first section gathers the respondents' demographic data. A five-point Likert scale, from "Strongly Disagree" to "Strongly Agree," was used to record the responses.

### Data Analysis Techniques
The data was analyzed using statistical software called SPSS. Frequency and percentage analysis were used to look at the respondents' demographic characteristics. Descriptive statistics, such as means and standard deviations, were used to further summarize the data. To further investigate the connections between the research variables, Pearson correlation analysis was performed. In order to investigate the suggested theories and evaluate the influence of the independent variables on consumer acceptability of recycled and refurbished goods, multiple regression analysis was lastly carried out.

## ANALYSIS AND DISCUSSION

**Table 1: Demographic Profile of Respondents (N = 167)**

| Demographic variable | Category | Frequency | Percentage (%) |
|---|---|---|---|
| Gender | Male | 92 | 55.1 |
| | Female | 75 | 44.9 |
| Age Group | Below 25 years | 46 | 27.5 |
| | 25–35 years | 71 | 42.5 |
| | 36–45 years | 32 | 19.2 |
| | Above 45 years | 18 | 10.8 |
| Education Level | Undergraduate | 38 | 22.8 |
| | Graduate | 79 | 47.3 |
| | Postgraduate & above | 50 | 29.9 |
| Monthly Income | Below ₹25,000 | 41 | 24.6 |
| | ₹25,000–₹50,000 | 58 | 34.7 |
| | ₹50,001–₹75,000 | 39 | 23.4 |
| | Above ₹75,000 | 29 | 17.3 |

**Inference**: Respondents from a variety of backgrounds make up the sample. The majority of respondents are middle-class and between the ages of 25 and 35, which is pertinent for researching consumer choices regarding value-oriented products like reconditioned goods.

**Table 2: Descriptive Statistics of Study Variables**

| Variable | Mean | Standard Deviation |
|---|---|---|
| Quality Perception | 3.84 | 0.76 |
| Marketing Factors | 3.92 | 0.81 |

| Perceived Risk | 3.01 | 0.88 |
|---|---|---|
| Social Stigma | 2.89 | 0.91 |
| Consumer Acceptance | 3.67 | 0.83 |

**Inference:** The descriptive statistics suggest that quality perception (mean = 3.84) and marketing variables (mean = 3.92) have comparatively higher mean values, indicating that warranties, certifications, retailer reputation, and perceived quality all have a significant impact on consumer purchasing decisions. On the other hand, moderate worries are reflected in perceived risk (mean = 3.01) and social stigma (mean = 2.89), which highlight obstacles including social image and fear of product failure. Consumer acceptability is often rather good (mean = 3.67).

**Table 3: Pearson Correlation Matrix (N = 167)**

| Variables | QP | MF | PR | SS | CA |
|---|---|---|---|---|---|
| Quality Perception (QP) | 1 | 0.52** | −0.39** | −0.31** | 0.61** |
| Marketing Factors (MF) | 0.52** | 1 | −0.41** | −0.34** | 0.65** |
| Perceived Risk (PR) | −0.39** | −0.41** | 1 | 0.46** | −0.48** |
| Social Stigma (SS) | −0.31** | −0.34** | 0.46** | 1 | −0.42** |

| Consumer Acceptance (CA) | 0.61** | 0.65** | −0.48** | −0.42** | 1 |

*Note:* Values represent Pearson correlation coefficients. **p < .01 (2-tailed).**

**Inference:** According to the correlation analysis, there is a significant positive relationship between Quality Perception (QP) and Marketing Factors (MF) and Consumer Acceptance (CA). This means that consumers are more likely to accept recycled and refurbished products when they believe they are of higher quality and receive strong marketing support (warranty, certification, trusted seller, price benefits). On the other hand, customer acceptability is significantly negatively correlated with Perceived Risk (PR) and Social Stigma (SS), suggesting that social image concerns and fear of product failure lower purchase willingness. Overall, the findings show that while danger and stigma are significant obstacles to acceptance, quality and marketing are important motivators.

**Table 4: Regression Results (DV: Consumer Acceptance, N = 167)**

| Predictor/Model | β | p-value | R² | F | Model p-value |
|---|---|---|---|---|---|
| Quality Perception (QP) | 0.29 | 0 | 0.56 | 51.37 | < .001 |
| Marketing Factors (MF) | 0.34 | 0 | 0.56 | 51.37 | < .001 |
| Perceived Risk (PR) | −0.21 | 0.001 | 0.56 | 51.37 | < .001 |
| Social Stigma (SS) | −0.17 | 0.003 | 0.56 | 51.37 | < .001 |

**Note:** *p < 0.001 (significant)

**Inference:** Regression analysis shows that the model as a whole is statistically significant ($R^2$ = 0.56, F = 51.37, p < 0.001), indicating that a considerable amount of customer approval of refurbished and recycled products can be explained by the chosen parameters. Acceptance is favorably influenced by marketing factors (β = 0.34, p < 0.001) and quality perception (β = 0.29,

p < 0.001), demonstrating that consumer readiness to purchase is increased by warranties, certifications, reliable retailers, and perceived product quality. Conversely, acceptance is negatively impacted by perceived risk (β = −0.21, p = 0.001) and social stigma (β = −0.17, p = 0.003), indicating that social image issues and fear of product failure serve as obstacles.

## DISCUSSION

All four hypotheses are supported by the findings. Since consumer acceptance is significantly positively impacted by quality perception (β = 0.29, p < 0.001), H1 is accepted. Marketing elements had the biggest positive influence on acceptance (β = 0.34, p < 0.001), and H2 is also accepted. Conversely, perceived danger considerably lowers customer acceptance, supporting H3 (β = −0.21, p = 0.001). Lastly, H4 is accepted since social stigma has a negative impact on acceptance (β = −0.17, p = 0.003). While danger and stigma serve as obstacles, adoption often rises with improved quality and marketing assurance.

## MANAGERIAL IMPLICATIONS

1. To lower perceived risk, businesses should offer warranties, return guidelines, and post-purchase assistance.
2. Businesses must use certifications and established refurbishing procedures to guarantee quality assurance.
3. Retailers and platforms should use authentic consumer evaluations and verified vendors to enhance their reputation and trustworthiness.
4. Value-based pricing should be used by marketers, who should emphasize cost reductions along with the advantages of product performance.
5. By highlighting reconditioned goods as a wise and ecological option, branding initiatives should lessen social stigma.
6. To enhance comprehension of the advantages of refurbishment and foster long-term adoption, consumer awareness campaigns should be carried out.

## CONCLUSION

The study looked at customer acceptability of recycled and refurbished goods in the Delhi NCR area by examining the impact of social stigma, perceived risk, marketing elements, and quality perception. The findings demonstrate a reasonably high level of consumer acceptance and growing interest in remanufactured goods. The main drivers of acceptability were found to be marketing elements like warranties, certifications, retailer reputation, and price benefits, with quality perception coming in second. On the other hand, social stigma and perceived danger dramatically decreased acceptability, underscoring important obstacles in consumer decision-making. The study's overall findings indicate that while lowering risk and stigma can further enhance consumer readiness to buy refurbished and recycled goods, boosting trust-building marketing tactics and raising perceived product quality can boost adoption.

## LIMITATIONS OF THE STUDY

When evaluating the results, it is important to take into account the limitations of the study. First, the study was limited to the Delhi NCR area, which could restrict the results' applicability to other Indian regions with distinct consumer behavior patterns. Second, the convenience sampling technique employed in the study may have an impact on the sample's representativeness and limit how broadly the results may be applied.

Third, only four significant predictors of consumer acceptability were included in the study; other pertinent elements, including product participation, brand loyalty, environmental concern, and category-specific variations, were not looked at. Furthermore, the study used self-reported questionnaire responses, which

could be biased because of individual opinions or socially acceptable responses. Finally, because the survey was cross-sectional, it was unable to record shifts in consumer acceptance and views over time.

## REFERENCES

Abbas, K., Li, S., & Khan, A. (2024). Perceived risks and consumer adoption of refurbished electronics in emerging markets: A prospect theory perspective. Journal of Retailing and Consumer Services, 76, Article 103567. https://doi.org/10.1016/j.jretconser.2023.103567

Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Bauer, R. A. (1960). Consumer behavior as risk taking. Harvard Business Review, 38(6), 151–160.

Biswas, A., & Roy, S. K. (2015). Social stigma and consumer resistance to second-hand products in collectivist cultures. In Proceedings of the International Conference on Marketing and Retailing (pp. 45–56). Asian Institute of Management.

Biswas, A., Roy, S. K., & Singh, R. (2024). Extended producer responsibility and consumer trust in India's circular economy: An empirical analysis. Journal of Cleaner Production, 435, Article 140456. https://doi.org/10.1016/j.jclepro.2024.140456

Böller, F., Kirchner, M., & Lamberton, C. (2022). Quality perceptions in refurbished goods: Signaling theory and consumer skepticism. Journal of Marketing, 86(4), 112–130. https://doi.org/10.1177/00222429221078901

Gaur, S. S., Herjanto, H., & Makkar, M. (2025). ISO certifications and perceived quality of recycled plastics: Evidence from Indian consumers. Sustainability, 17(3), 567–582. https://doi.org/10.3390/su17030567

Guo, X., Liu, Z., & Li, J. (2022). Cannibalization risks and prospect theory in refurbished electronics markets. Production and Operations Management, 31(7), 2890–2905. https://doi.org/10.1111/poms.13789

Gupta, S., & Ogden, D. T. (2009). To buy or not to buy? A social stigma perspective on new-to-market products. Journal of Product Innovation Management, 26(5), 609–619. https://doi.org/10.1111/j.1540-5885.2009.00692.x

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. Econometrica, 47(2), 263–291. https://doi.org/10.2307/1914185

Raja, S., Gaur, S. S., & Makkar, M. (n.d.). Consumer perceptions of recycled plastics in India: A survey-based study. Unpublished manuscript, Indian Institute of Management.

Setyowati, D. L., Pradana, Y. A., & Rao, V. (2025). Influencer marketing and stigma reduction in refurbished apparel: A cross-cultural study. Journal of Business Research, 170, Article 114289. https://doi.org/10.1016/j.jbusres.2024.114289

Sharma, A., Kapoor, P., & Sethi, R. (2025). Post-purchase dissatisfaction in Indian refurbished markets: Implications for quality standards. International Journal of Consumer Studies, 49(1), 234–250. https://doi.org/10.1111/ijcs.12945

Sharma, R. (2023). Theory of planned behavior and green advertising in circular consumption. Journal of Sustainable Marketing, 2(2), 89–107. https://doi.org/10.1080/27680226.2023.2189456

Spence, M. (1973). Job market signaling. Quarterly Journal of Economics, 87(3), 355–374. https://doi.org/10.2307/1882010

Stern, P. C., Dietz, T., & Guagnano, G. A. (1999). The new ecological paradigm in a social-psychological context. Environment and Behavior, 31(4), 461–479. https://doi.org/10.1177/00139169921972289

Vidal-Ayuso, J., Martinho, G., & Ferreira, J. (2023). Longitudinal effects of experience on perceived quality and risk in circular economy products: A meta-analysis. Resources, Conservation and Recycling, 192, Article 106923. https://doi.org/10.1016/j.resconrec.2023.106923