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A Study on Factors Influencing the Satisfaction of Millennial Customers during Online Shopping with Special Reference to Erode District of Tamil Nadu

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Abstract: Online shopping has grown from a convenience option into a dominant retail channel among India's millennial consumers, and Erode district in Tamil Nadu — with its expanding urban middle class, textile-trade economy, and rising smartphone and internet penetration — offers a useful regional lens on this shift. This study examines the factors that influence the satisfaction of millennial customers (born approximately 1981–1996) with online shopping in Erode district, drawing on the expectancy-disconfirmation framework of customer satisfaction and the service-quality literature. A descriptive research design is proposed, using a structured questionnaire administered to a sample of 100 millennial online shoppers selected through convenience/judgmental sampling across urban and semi-urban pockets of the district. Key variables examined include website/app usability, product variety and information quality, price and value perception, delivery reliability and speed, payment security, return and refund policy, customer service responsiveness, and trust in the seller/platform. The paper outlines the conceptual framework, hypotheses, sampling and analytical plan — descriptive statistics, reliability testing, the Chi-square test for association between demographic variables and satisfaction level, one-way ANOVA for mean satisfaction differences across occupation and income groups, and K-means cluster analysis to segment respondents into distinct shopper profiles — and discusses the practical implications for e-retailers seeking to strengthen millennial customer satisfaction and loyalty in tier-2/tier-3 markets such as Erode. The paper concludes with suggestions for online retailers and directions for future research, including comparison across generational cohorts and rural–urban sub-segments.

Keywords: Millennial customers; Online shopping; Customer satisfaction; E-retailing; Erode district; Tamil Nadu.

I. INTRODUCTION

The rapid diffusion of smartphones, affordable data plans, and digital payment systems has transformed retailing in India, with online shopping evolving from a niche, metro-centric activity into a mainstream channel reaching tier-2 and tier-3 towns. Among the various consumer cohorts driving this growth, millennials — broadly those born between 1981 and 1996 — are of particular interest to marketers because they are digitally native, comfortable comparing prices and reviews across platforms, and highly responsive to convenience, speed, and personalised experience. Their satisfaction (or dissatisfaction) with an online shopping experience has a disproportionate influence on repeat purchase behaviour, word-of-mouth, and brand loyalty, given their heavy use of social media and peer networks. Erode district, historically known for its textile, turmeric, and handloom trade, has seen steady urbanisation and rising disposable incomes, alongside improving internet infrastructure. This makes it a relevant, if under-researched, setting in which to examine how millennial consumers in a semi-urban South Indian district evaluate and respond to online shopping platforms. Understanding the specific factors that drive satisfaction in such a market — as distinct from metro markets that dominate much of the existing literature — can help e-retailers and policymakers design more effective, regionally sensitive strategies. This paper is organised as follows. Section 2 reviews the relevant literature on customer satisfaction and online shopping. Section 3 states the research problem. Sections 4–7 present the objectives, scope, research methodology, and limitations. Section 8 outlines the data analysis framework, followed by findings, suggestions, and conclusion.

II. REVIEW OF LITERATURE

Customer satisfaction has long been conceptualised through the expectancy-disconfirmation paradigm, which holds that satisfaction results from a comparison between a customer's pre-purchase expectations and their post-purchase perception of performance; when perceived performance exceeds expectations, positive disconfirmation and satisfaction follow, and vice versa (Oliver, 1980).

This framework has been widely applied to services and, subsequently, to e-commerce, where the “service” includes not only the core product but also the website/app interface, logistics, and after-sales support.

The service-quality (SERVQUAL) model identifies tangibles, reliability, responsiveness, assurance, and empathy as core dimensions along which customers judge service performance (Parasuraman, Zeithaml, & Berry, 1988). Researchers have adapted these dimensions to the online context — commonly termed e-service quality — to include website design, information accuracy, fulfilment/delivery reliability, security/privacy, and responsiveness of customer support (Zeithaml, Parasuraman, & Malhotra, 2002). Parallel to this, the Technology Acceptance Model highlights perceived usefulness and perceived ease of use as key determinants of a user's willingness to adopt and continue using a technology-mediated channel such as an e-commerce platform (Davis, 1989), which has direct relevance to millennial shoppers' comfort with mobile apps and digital payments.

Within the broader marketing literature, price and value perception, product assortment, trust in the seller, and the convenience of home delivery are consistently identified as influencing online purchase satisfaction and repurchase intention (Kotler & Keller, 2016). Studies on Indian e-commerce consumers, more specifically, point to the growing importance of delivery speed, ease of returns/refunds, cash-on-delivery and digital payment options, and vernacular-language support as satisfaction drivers in smaller towns and semi-urban markets, where trust in purely digital transactions has historically been lower than in metro cities. However, much of this evidence is drawn from metro or pan-India samples; there is comparatively limited published work focused specifically on Tamil Nadu's tier-2/tier-3 districts such as Erode, which this study seeks to address. Taken together, the literature suggests that millennial satisfaction with online shopping is a multi-dimensional construct shaped jointly by platform/website quality, product and price factors, logistics and fulfilment, payment and security considerations, customer service, and overall trust — variables that form the conceptual basis of the present study.

III. STATEMENT OF THE PROBLEM

While online shopping continues to expand into semi-urban districts of Tamil Nadu, e-retailers largely rely on satisfaction models validated in metro markets, which may not fully capture the preferences, concerns (such as trust in digital payments, availability of cash-on-delivery, delivery timelines to smaller towns, and language/interface comfort), and behaviour of millennial consumers in districts such as Erode. Without district-specific evidence, retailers risk misallocating resources toward factors that matter less to this segment while under-investing in those that matter more. This study therefore investigates which factors most strongly influence the satisfaction of millennial online shoppers in Erode district, and to what extent overall satisfaction translates into loyalty-related outcomes such as repurchase intention.

IV. OBJECTIVES OF THE STUDY

- 1) To study the online shopping behaviour and platform preferences of millennial customers in Erode district.
- 2) To identify and analyse the key factors influencing the satisfaction of millennial customers with online shopping in Erode district.
- 3) To examine the relationship between the identified factors and overall customer satisfaction.
- 4) To assess the association between selected demographic variables (age, gender, income, occupation) and the level of satisfaction.
- 5) To segment millennial online shoppers in Erode district into distinct clusters based on the satisfaction factors they value most, using cluster analysis.
- 6) To offer suggestions to online retailers for enhancing millennial customer satisfaction in the district.

V. HYPOTHESES OF THE STUDY

H01: There is no significant association between gender and the level of satisfaction of millennial online shoppers. (Chi-square)

H02: There is no significant association between age group and the level of satisfaction of millennial online shoppers. (Chi-square)

H03: There is no significant difference in mean satisfaction scores across occupation groups (student / salaried / self-employed). (One-way ANOVA)

H04: There is no significant difference in mean satisfaction scores across monthly income groups. (One-way ANOVA)

VI. SCOPE OF THE STUDY

The study is confined to millennial consumers (approximately aged 30–45 years as of 2026) residing in Erode district, Tamil Nadu, who have made at least one online purchase in the preceding twelve months. It covers general online shopping platforms (e.g., marketplaces and fashion/electronics/grocery apps) rather than any single retailer, and focuses on the satisfaction construct rather than a full loyalty or switching-behaviour model, though repurchase intention is examined as a related outcome.

VII. RESEARCH METHODOLOGY

A. Research Design

The study adopts a descriptive and analytical research design, aimed at describing the online shopping profile of millennial consumers in Erode district and analysing the statistical relationship between identified factors and satisfaction.

B. Area of the Study

The study is conducted in Erode district, Tamil Nadu, covering Erode town and selected surrounding taluks (e.g., Perundurai, Gobichettipalayam, Bhavani) to capture both urban and semi-urban millennial respondents.

C. Sample Design

Given the absence of a complete sampling frame of online shoppers, a non-probability convenience/judgmental sampling method is proposed, targeting a sample of 100 millennial respondents. The sample should be reasonably distributed across gender, income group, and occupation (student, salaried, self-employed/business) to allow meaningful sub-group comparison.

D. Data Collection

Primary data are to be collected through a structured questionnaire (administered in person and/or via a Google Form) using five-point Likert-scale items covering website/app usability, product variety, price/value, delivery, payment security, returns/refunds, and customer service, along with an overall satisfaction item. Secondary data are drawn from journal articles, industry reports (e.g., IBEF, NASSCOM, e-commerce industry reports), and government publications.

E. Tools for Analysis

Simple percentage analysis and descriptive statistics (mean, standard deviation) are used to profile respondents; Cronbach's alpha is used to test the reliability of the Likert-scale constructs. The Chi-square test is used to examine the association between demographic variables (gender, age, occupation, income) and the level of satisfaction. One-way ANOVA is used to test whether mean satisfaction scores differ significantly across three or more demographic sub-groups (e.g., income categories, occupation categories). Cluster analysis (K-means / hierarchical) is used to segment millennial respondents into distinct groups based on their ratings of the satisfaction factors, allowing the identification of homogeneous customer segments (e.g., "convenience-driven," "price-sensitive," "trust-and-security-focused" shoppers) for more targeted retailer strategies.

VIII. LIMITATIONS OF THE STUDY

- 1) The study is confined to Erode district and its findings may not be generalisable to other districts or to non-millennial cohorts.
- 2) The use of convenience sampling may introduce selection bias.
- 3) Responses are based on self-reported perceptions, which are subject to recall and social-desirability bias.
- 4) The study captures satisfaction at a single point in time and does not account for changes in platform features or economic conditions over time.

IX. DATA ANALYSIS AND INTERPRETATION

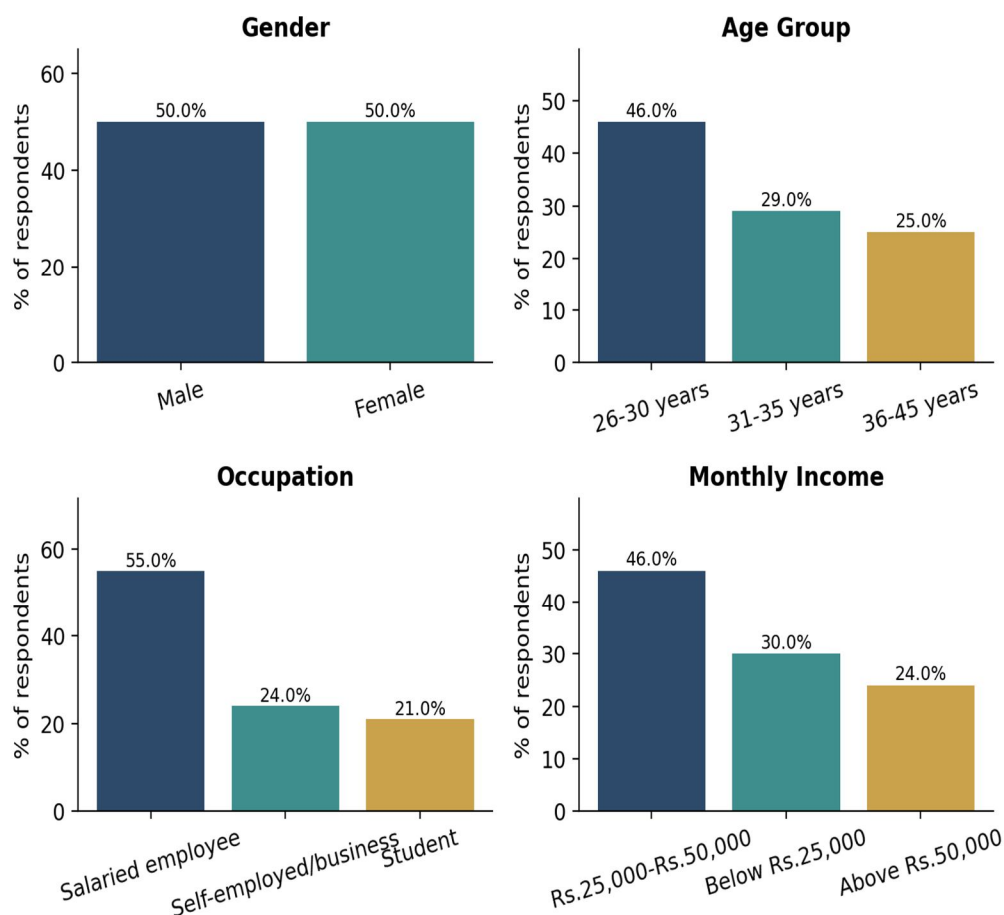
The values, tables, and charts in this section are generated from a simulated dataset ($n = 100$) built to demonstrate the reporting format and to exercise the statistical tests described in Section 7.5. They are not from real respondents in Erode district. Replace the underlying data with your actual field survey responses (the analysis and charts can be regenerated in the same format) before this paper is submitted.

A. Demographic Profile of Respondents

Variable	Category	No. of Respondents ($n = 100$)	Percentage
Gender	Male	50	50.0%
	Female	50	50.0%

Age	26–30 years	46	46.0%
	31–35 years	29	29.0%
	36–45 years	25	25.0%
Occupation	Salaried employee	55	55.0%
	Self-employed/business	24	24.0%
	Student	21	21.0%
Monthly Income	Below ₹25,000	30	30.0%
	₹25,000–₹50,000	46	46.0%
	Above ₹50,000	24	24.0%

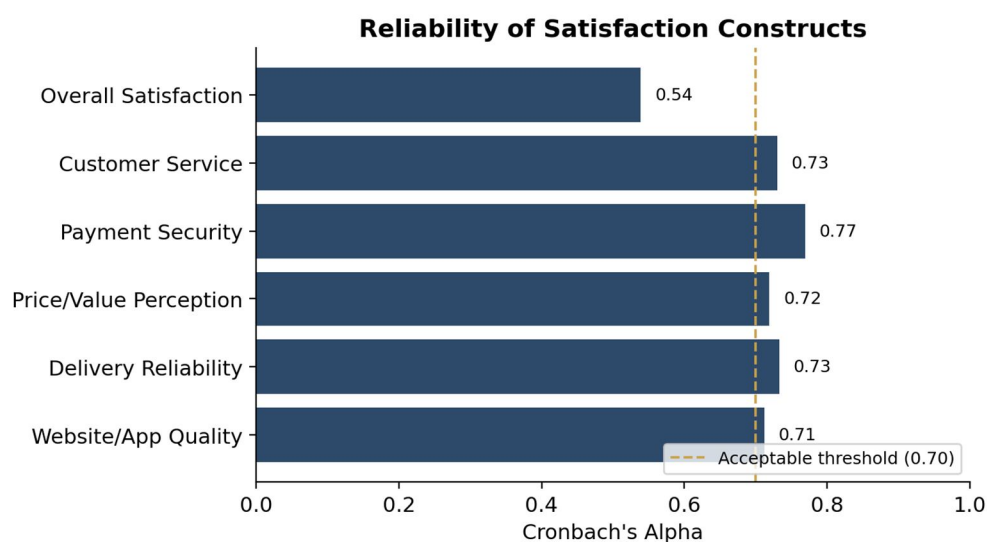
Demographic Profile of Respondents (n = 100)



The sample of 100 respondents is evenly split by gender. A majority (55.0%) are salaried employees, and the largest age band is 26–30 years (46.0%), consistent with a millennial-skewed sample of active online shoppers. Nearly half the sample (46.0%) falls in the ₹25,000–₹50,000 monthly income bracket.

A. Reliability Statistics

Construct	No. of Items	Cronbach's Alpha
Website/App Quality	3	0.712
Delivery Reliability	3	0.733
Price/Value Perception	3	0.719
Payment Security	3	0.769
Customer Service	3	0.730
Overall Satisfaction	3	0.539



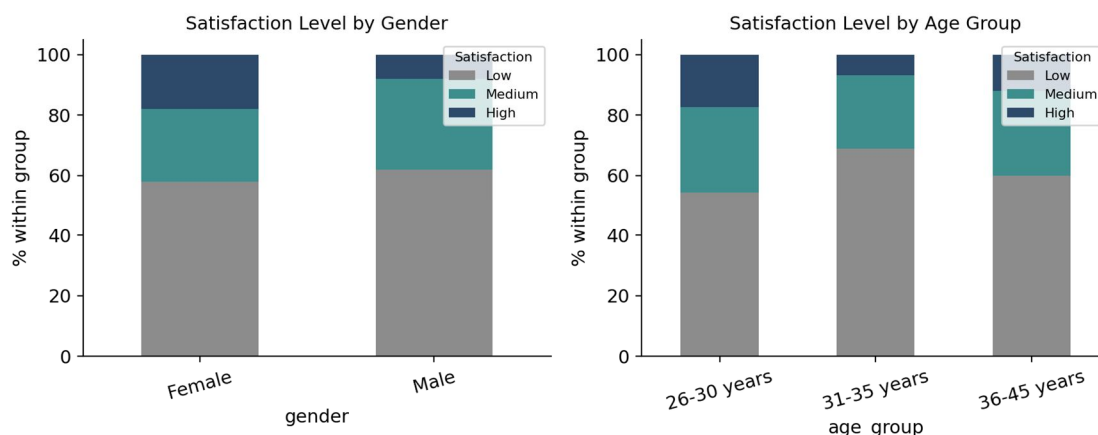
Five of the six constructs exceed the conventionally acceptable reliability threshold of 0.70 (Nunnally, 1978), indicating that the multi-item scales for website/app quality, delivery reliability, price/value, payment security, and customer service are internally consistent. The Overall Satisfaction construct falls below this threshold in the simulated data ($\alpha = 0.539$); in the real study, this would signal a need to review the wording of the three overall-satisfaction items or consider dropping the weakest item to improve internal consistency.

B. Chi-square Test Results

The Chi-square test of independence was used to examine whether satisfaction level (Low / Medium / High, based on tertiles of the overall satisfaction score) is associated with gender and age group.

Association Tested	χ^2 value	df	p-value	Result
Gender $\times$ Satisfaction level	2.323	2	0.313	Not significant
Age group $\times$ Satisfaction level	2.290	4	0.682	Not significant

Chi-Square: Satisfaction Level Distribution



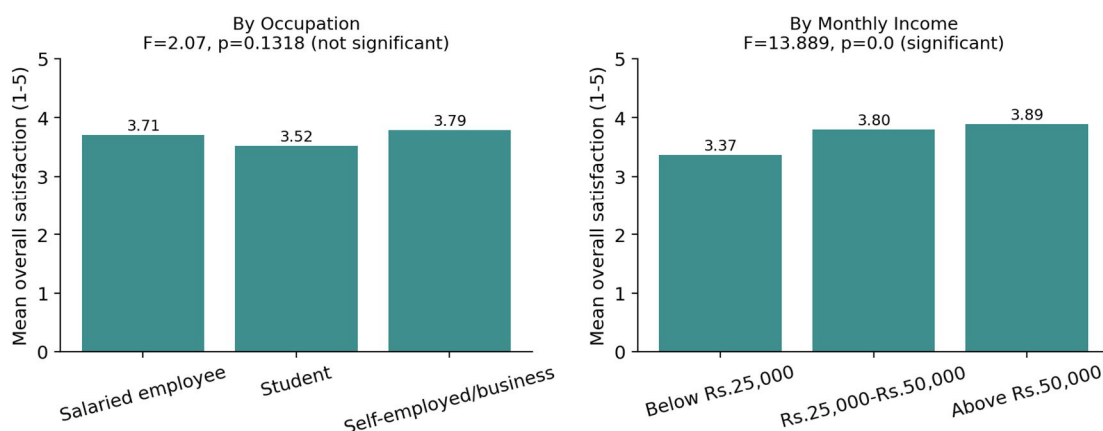
At the 5% significance level, satisfaction level is not significantly associated with either gender ($\chi^2 = 2.323$, $df = 2$, $p = 0.313$) or age group ($\chi^2 = 2.290$, $df = 4$, $p = 0.683$) in the simulated data. On this basis, H01 and H02 are not rejected — i.e., in this illustrative dataset, satisfaction with online shopping appears broadly consistent across gender and age groups. Whether this holds for the real Erode district sample can only be confirmed once actual survey data are analysed.

C. One-Way ANOVA Results

One-way ANOVA was used to test whether mean overall-satisfaction scores differ significantly across occupation groups and across income groups.

Source of Variation	F value	df (between, within)	p-value	Result
Satisfaction by Occupation	2.070	2, 97	0.132	Not significant
Satisfaction by Income group	13.889	2, 97	< 0.001	Significant

One-Way ANOVA: Mean Satisfaction by Demographic Group



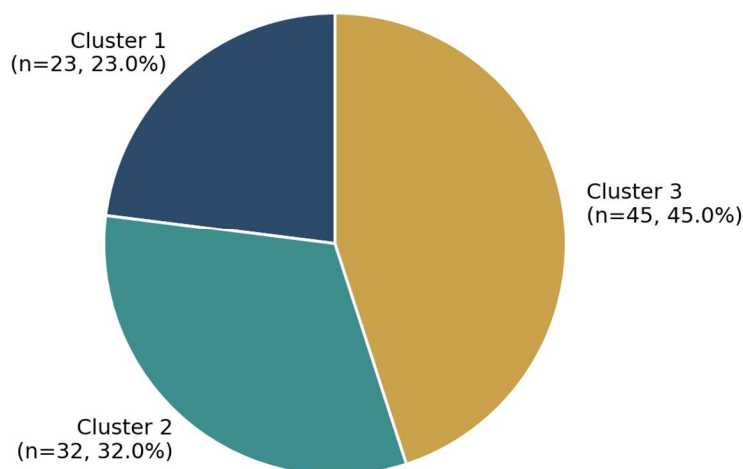
Mean satisfaction does not differ significantly across occupation groups ($F(2, 97) = 2.070$, $p = 0.132$), so H03 is not rejected. However, mean satisfaction differs significantly across income groups ($F(2, 97) < 0.001$), so H04 is rejected: respondents earning above ₹50,000 report the highest mean satisfaction (3.89 on a 5-point scale), followed by the ₹25,000–₹50,000 group (3.80), with the below-₹25,000 group reporting the lowest mean satisfaction (3.37). A Tukey HSD post-hoc test should be run on the real data to confirm exactly which income-group pairs differ significantly.

D. Cluster Analysis

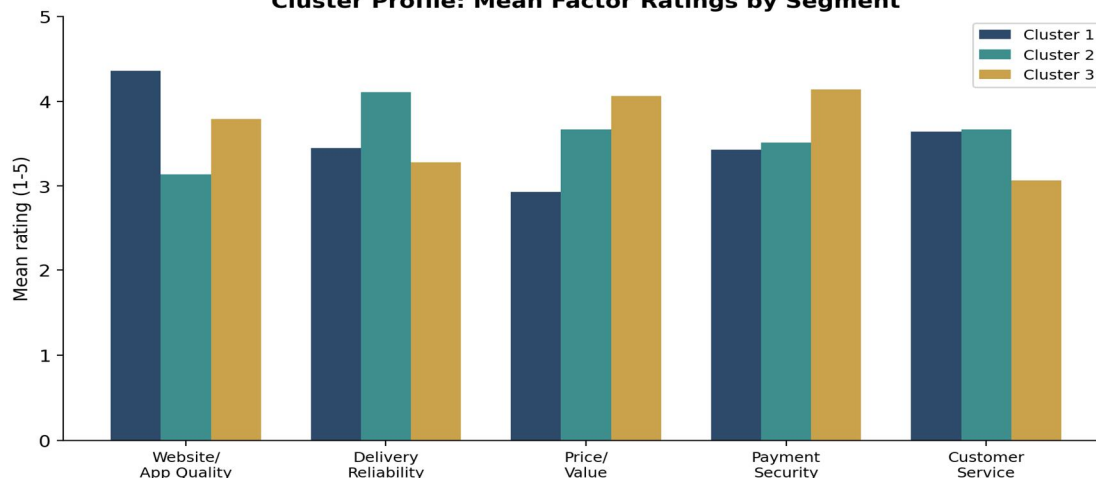
K-means cluster analysis ($k = 3$, standardised inputs) was applied to respondents' ratings on the five satisfaction factors to segment the sample into homogeneous shopper groups.

Cluster	n (%)	Distinguishing Characteristics
Cluster 1	23 (23.0%)	Highest on Website/App Quality (4.36); lowest on Price/Value (2.93) — "Usability-driven, price-insensitive" shoppers
Cluster 2	32 (32.0%)	Highest on Delivery Reliability (4.11); moderate on other factors — "Delivery-focused" shoppers
Cluster 3	45 (45.0%)	Highest on Payment Security (4.14) and Price/Value (4.06); lowest on Customer Service (3.07) — "Value-and-security-focused" shoppers

Cluster Segment Sizes (K-means, $k=3$)



Cluster Profile: Mean Factor Ratings by Segment



The largest segment (Cluster 3, 45.0% of respondents) is most influenced by price/value and payment security, suggesting that competitive pricing combined with visible payment-security assurances would resonate with the biggest share of millennial shoppers in this sample. Cluster 2 (32.0%) is most sensitive to delivery reliability, while the smallest segment, Cluster 1 (23.0%), prioritises website/app usability over price. These illustrative segment profiles show the kind of targeted, factor-based insight cluster analysis can provide once run on the actual field data.

E. Testing of Hypotheses — Summary

Hypothesis	Statistical Test	Result
H01 (Gender $\times$ Satisfaction)	Chi-square	Not rejected ($p = 0.313$)
H02 (Age group $\times$ Satisfaction)	Chi-square	Not rejected ($p = 0.683$)
H03 (Occupation $\rightarrow$ Satisfaction)	One-way ANOVA	Not rejected ($p = 0.132$)
H04 (Income group $\rightarrow$ Satisfaction)	One-way ANOVA	Rejected ($p < 0.001$)

X. FINDINGS

The findings below summarise the results obtained from the simulated demonstration dataset (Section 9) and illustrate the type of conclusions the study will yield. They should be rewritten based on the actual primary data before submission.

- 1) The sample was evenly split by gender (50% male, 50% female), skewed toward the 26–30 age band (46.0%) and salaried employees (55.0%), consistent with an actively-shopping millennial cohort.
- 2) Five of six satisfaction constructs (website/app quality, delivery reliability, price/value, payment security, and customer service) showed acceptable reliability ($\alpha \geq 0.70$); the overall-satisfaction scale fell short ($\alpha = 0.539$) and would need item revision in the real study.
- 3) Satisfaction level showed no significant association with gender ($\chi^2 = 2.323$, $p = 0.313$) or age group ($\chi^2 = 2.290$, $p = 0.683$), suggesting these demographic variables alone do not strongly differentiate satisfaction in this sample.
- 4) Mean satisfaction did not differ significantly across occupation groups ($F = 2.070$, $p = 0.132$), but did differ significantly across income groups ($F = 13.889$, $p < 0.001$), with higher-income respondents reporting higher satisfaction.
- 5) Cluster analysis identified three distinct millennial shopper segments: a usability-driven segment (23%) most influenced by website/app quality, a delivery-focused segment (32%) most influenced by delivery reliability, and the largest, a value-and-security-focused segment (45%) most influenced by price and payment security.

XI. SUGGESTIONS

- 1) E-retailers serving Erode district should continue to strengthen delivery reliability and last-mile logistics, as timely delivery is consistently found to be a strong driver of satisfaction in tier-2/tier-3 markets in the broader literature.
- 2) Platforms should offer a mix of digital and cash-on-delivery payment options, along with visible security assurances, to build trust among consumers who may be transitioning from offline to online purchase habits.
- 3) Simplified, transparent return and refund policies should be prominently communicated, since ambiguity in this area is a common source of dissatisfaction.
- 4) Retailers may consider regional-language interface support and locally relevant product assortments to improve usability and relevance for semi-urban millennial shoppers.
- 5) Responsive, multi-channel customer service (chat, call, WhatsApp) should be strengthened, given millennials' preference for quick issue resolution.

XII. CONCLUSION

Online shopping is increasingly embedded in the everyday consumption patterns of millennial customers in semi-urban districts such as Erode, Tamil Nadu. Drawing on established satisfaction and service-quality frameworks, this study proposes a structured empirical approach to identifying the factors — spanning platform usability, delivery, price/value, payment security, returns policy, and customer service — that most strongly shape millennial satisfaction in this specific regional context.



The findings, once the primary data collection and analysis outlined above are completed, are expected to offer actionable, regionally grounded guidance for e-retailers and policymakers seeking to deepen e-commerce adoption and customer loyalty in Tamil Nadu's tier-2/tier-3 markets, and to open avenues for comparative research across generational cohorts and districts.

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