

A Comparative Analysis of Rural and Urban Consumer Buying Behaviour through E-Commerce Platforms with Special Reference to Satna District

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ABSTRACT

This study compares selected dimensions of online buying behaviour among rural and urban consumers in Satna district, Madhya Pradesh. The declared sample comprised 100 respondents, including 66 rural and 34 urban consumers, selected purposively. Before analysis, each aggregated table was checked against these subgroup totals. Only variables whose counts were internally consistent with the declared sampling frame were retained for inferential analysis. Purchase frequency had 74 valid responses, with 26 missing responses concentrated in the rural subgroup, while price comparison had 88 valid responses. Pearson chi-square tests were supplemented by the Fisher-Freeman-Halton exact test because of sparse cells, and Cramer's V with 95 percent confidence intervals was reported as an effect-size measure. Among complete cases, purchase frequency was not associated with residence, Pearson chi-square (3) = 3.63, $p = .305$; exact $p = .360$; Cramer's V = .221, 95 percent CI [0.000, 0.403]. Price-comparison behaviour differed by residence, Pearson chi-square (2) = 7.69, $p = .021$; exact $p = .012$; Cramer's V = .296, 95 percent CI [0.031, 0.490]. Urban respondents were more likely to report always comparing online and physical-store prices. The purchase-frequency result must be interpreted cautiously because of differential item nonresponse. The findings support clearer price information and consumer-comparison tools, while also demonstrating the importance of transparent data screening in small survey studies.

Keywords: E-commerce, consumer buying behaviour, rural consumers, urban consumers, price comparison, exact test, Satna district

INTRODUCTION

E-commerce has expanded access to products, information, and payment options beyond large cities. In India, growing smartphone use and internet access have increased the relevance of rural markets, although differences in connectivity, digital familiarity, logistics, and trust can still shape how consumers evaluate online purchases. Recent industry evidence reports continued growth in rural internet access and greater localisation of e-commerce services, including regional-language interfaces and cash-compatible fulfilment (India Brand Equity Foundation, 2025).

Consumer adoption of online shopping is not determined by access alone. Technology-acceptance research emphasises perceived usefulness and ease of use (Davis, 1989), while the reasoned-action and planned-behaviour traditions connect beliefs, social influence, perceived control, and intention with behaviour (Fishbein & Ajzen, 1975; Ajzen, 1991). In an e-commerce setting, these mechanisms interact with perceived risk, trust, product information, payment choice, and return processes.

District-level comparisons are valuable because national averages can conceal differences between nearby rural and urban consumers. Satna district provides an appropriate setting for examining whether residence is related to reported purchasing frequency and price-comparison behaviour. This revision deliberately limits inferential

claims to variables that pass consistency checks against the declared sample. This protects the analysis from drawing conclusions from aggregated counts that cannot be reconciled with the sampling frame.

LITERATURE REVIEW

Theoretical Foundations

The Theory of Reasoned Action proposes that behavioural intention develops from attitudes and subjective norms (Fishbein & Ajzen, 1975). The Theory of Planned Behaviour extends this reasoning by including perceived behavioural control (Ajzen, 1991). These perspectives are relevant to e-commerce because consumers may hold favourable attitudes toward convenience but still hesitate when they perceive limited control over payment security, delivery, returns, or dispute resolution.

The Technology Acceptance Model identifies perceived usefulness and perceived ease of use as central influences on technology adoption (Davis, 1989). For online shopping, usefulness may involve access, variety, price information, and convenience, whereas ease of use includes search, comparison, payment, tracking, and return processes. The present study uses these theories as interpretive foundations rather than testing them as latent-variable models because the available data consist of aggregated categorical counts rather than validated multi-item scales.

Evidence on Indian Online Shopping

Tandon (2021), using data from 424 online shoppers in North India, found that social media, reverse logistics, and pay-on-delivery contributed to customer satisfaction within an extended technology-adoption framework. This evidence shows why access to payment and post-purchase support can be especially important in emerging e-commerce markets.

Mishra et al. (2023) examined customer-satisfaction drivers and challenges in rural and urban Indian e-commerce from a stakeholder perspective. Their analysis emphasised that service parameters operate as an interconnected system rather than as isolated influences. More recently, Chouhan et al. (2025) compared rural and urban online-shopping attitudes in Indore district, Madhya Pradesh, and reported continuing relevance of cash-on-delivery, infrastructure, convenience, and website usability. This nearby district evidence strengthens the case for locally grounded comparisons while also demonstrating that findings should not be generalised automatically across districts.

Earlier comparative research also found that situational conditions and internet experience could shape online-shopping attitudes across rural and urban college environments (Xu & Paulins, 2005). Taken together, the literature indicates that residence may influence the evaluative process without necessarily producing a uniform difference in every purchasing outcome.

Research Gap

Contemporary Indian studies have examined broad adoption drivers and service quality, but transparent district-level comparisons using exact tests and explicit missing-data disclosure remain limited. This study addresses that gap for Satna district by testing two internally consistent residence-by-behaviour tables and by reporting both significance and effect-size precision.

Objectives

- To compare the online purchase-frequency distribution of rural and urban respondents.
- To compare rural and urban respondents' reported online-versus-physical-store price-comparison behaviour.
- To demonstrate a transparent data-screening and small-sample analysis protocol for aggregated survey counts.

Hypotheses

- H01 Residential status and online purchase frequency are independent.
- H02 Residential status and price-comparison behaviour are independent.

RESEARCH METHODOLOGY

Design and Sample

The study used a descriptive, comparative, cross-sectional survey design. The declared sample comprised 100 respondents with prior online-shopping experience, including 66 rural and 34 urban residents of Satna district. Purposive sampling was used because a complete probability sampling frame of online shoppers was not available. Consequently, estimates describe the surveyed participants and are not population-representative.

Data Screening and Missing Responses

The available dataset consisted of aggregated category counts. Each residence-specific total was checked against the declared subgroup sizes before analysis. A variable was eligible for inferential testing only when its rural count did not exceed 66, its urban count did not exceed 34, and its categories could be interpreted as mutually exclusive responses. Tables failing these checks were not used for hypothesis tests.

Table 1 Data screening decisions

Variable	Rural count	Urban count	Decision	Reason
Purchase frequency	40 valid	34 valid	Retained	Counts fit subgroup limits; 26 rural responses missing
Price comparison	59 valid	29 valid	Retained	Counts fit subgroup limits; 12 responses missing
Education selections	65	62	Excluded	Urban count exceeds declared urban sample
Product category	46	44	Excluded	Urban count exceeds declared urban sample
Income-related intention	59	40	Excluded	Urban count exceeds declared urban sample
Payment and research time	46	42	Excluded	Urban count exceeds declared urban sample

For purchase frequency, 40 of 66 rural respondents and all 34 urban respondents provided a valid category. The 26 missing responses were therefore concentrated entirely in the rural subgroup. Complete-case results for this variable may be affected by nonresponse bias and are interpreted as descriptive evidence rather than a definitive population comparison.

Statistical Analysis

We calculated frequencies and valid-response percentages for the retained variables. Pearson's chi-square test of independence was reported for comparability, but several expected counts were below five. The Fisher-Freeman-Halton exact test, the extension of Fisher's exact test to 2 by k tables, was therefore used as the principal robustness check. Cramer's V quantified association strength. Confidence intervals for Cramer's V were obtained by inverting the noncentral chi-square distribution. Tests were two-sided with $\alpha = .05$.

Ethical Considerations

Participation in the survey was voluntary, and informed consent was obtained from all respondents before data collection. No personally identifiable information was collected or retained. Formal ethics committee approval was not obtained for this minimal-risk, non-interventional survey.

RESULTS

Sample Profile

The declared sample contained 66 rural and 34 urban respondents. There were 63 men and 37 women. Because other demographic tables did not reconcile with the declared subgroup totals, no inferential demographic comparisons were performed.

Purchase Frequency

Table 2 Purchase frequency by residence among valid respondents

Frequency	Rural n	Rural percent	Urban n	Urban percent	Total n
Weekly	3	7.5	0	0.0	3
Monthly	21	52.5	23	67.6	44
Rarely	14	35.0	10	29.4	24
Daily	2	5.0	1	2.9	3
Valid total	40	100.0	34	100.0	74
Missing	26	39.4 of rural sample	0	0.0 of urban sample	26

Monthly purchasing was the most common valid response in both groups. Pearson's test did not show a statistically significant association between residence and purchase frequency, chi-square (3, $n = 74$) = 3.63, $p = .305$. The Fisher-Freeman-Halton exact result was also non-significant, $p = .360$. Cramer's V was .221, 95 percent CI [0.000, 0.403]. Because 39.4 percent of the rural subgroup did not provide a valid frequency response while the urban subgroup had complete responses, the apparent similarity may not hold for the missing rural cases.

Price Comparison

Table 3 Comparison of online and physical-store prices

Response	Rural n	Rural percent	Urban n	Urban percent	Total n
Always compare	36	61.0	24	82.8	60
Sometimes compare	6	10.2	4	13.8	10
Do not compare	17	28.8	1	3.4	18
Valid total	59	100.0	29	100.0	88
Missing	7	10.6 of rural sample	5	14.7 of urban sample	12

Urban valid respondents were more likely to report always comparing prices, while rural valid respondents were more likely not to compare. Pearson's test indicated an association, chi-square (2, $n = 88$) = 7.69, $p = .021$. The Fisher-Freeman-Halton exact test confirmed this result, $p = .012$. The effect was moderate, Cramer's V = .296, 95 percent CI [0.031, 0.490].

Hypothesis Summary

Table 4 Hypothesis-test results

Test	Valid n	Pearson chi- square	df	Pearso n p	Exact p	Cramer' s V	95 percent CI	Decision
H01 Purchase frequency	74	3.63	3	.305	.360	.221	[.000, .403]	Fail to reject
H02 Price comparison	88	7.69	2	.021	.012	.296	[.031, .490]	Reject

DISCUSSION

Among complete cases, rural and urban respondents showed broadly similar purchase-frequency distributions. This result is consistent with the possibility that online access is narrowing some surface-level behavioural differences. However, the result is not conclusive because the response rate was 60.6 percent for rural respondents and 100 percent for urban respondents. If the missing rural respondents had systematically different shopping frequencies, the observed distribution would be biased. The finding should therefore be reported as no detected association among valid respondents, not as proof that the two populations are identical.

Price-comparison behaviour showed clearer residential variation. The higher proportion of urban respondents who always compared prices may reflect differences in digital familiarity, access to multiple platforms, or confidence in evaluating online information. These mechanisms were not directly measured and should not be treated as established causal explanations. Nevertheless, the result is compatible with technology-acceptance perspectives in which ease of use and perceived control affect how fully consumers use digital features (Davis, 1989; Ajzen, 1991).

The findings also align with Indian evidence that online-shopping satisfaction depends on payment, social-media, logistics, and post-purchase processes (Tandon, 2021), as well as rural-urban research emphasising service and infrastructure differences (Mishra et al., 2023; Chouhan et al., 2025). The present study adds a district-level result while adopting a more conservative analytical boundary: variables with subgroup totals inconsistent with the declared sample were not used to support claims.

Practical Implications

- E-commerce platforms should make total prices, delivery charges, return costs, and seller comparisons visible in a simple and consistent format.
- Price-comparison guidance should be usable on low-bandwidth mobile interfaces and, where feasible, in relevant local languages.
- Consumer-awareness initiatives should explain how to compare sellers, final prices, return conditions, and review credibility before purchase.
- Future rural outreach should be evaluated with balanced response tracking so that nonresponse does not conceal the experience of less-engaged consumers.

Limitations and Future Research

The sample was small, purposively selected, and geographically limited to surveyed consumers in Satna district. The available dataset contained aggregated counts rather than respondent-level records, preventing multivariable adjustment and detailed missing-data modelling. Purchase-frequency nonresponse was substantial and concentrated in the rural subgroup. Several additional tables were excluded because their subgroup totals exceeded the declared sample counts, so this revision cannot support claims about payment method, education, product category, research time, or income-related intention.

Future work should use stratified random or carefully quota-controlled sampling, preserve anonymous respondent-level data, pretest the instrument, document informed consent and institutional ethical requirements, and record a response status for every item. A larger sample would permit adjusted analyses and narrower confidence intervals. Follow-up interviews could investigate why some respondents do not compare prices, but qualitative evidence should be collected rather than inferred from the present categorical data.

CONCLUSION

This study provides a cautious comparison of rural and urban e-commerce behaviour in Satna district using two variables that passed prespecified consistency checks. No association between residence and purchase frequency was detected among complete cases, but differential rural nonresponse limits that conclusion. Price-comparison behaviour differed significantly by residence, with a moderate association and greater reported comparison among urban respondents. The revised analysis demonstrates that transparent handling of sparse cells, missing responses, effect sizes, and inconsistent aggregate tables is essential for credible small-sample survey research.

REFERENCES

1. 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](https://doi.org/10.1016/0749-5978(91)90020-T)
2. Chouhan, P. S., Agnihotri, K., Verma, M., & Patil, V. (2025). Exploring rural and urban buyers' attitudes toward online shopping: Evidence from Indore District, Madhya Pradesh. *Journal of Marketing and Social Research*, 2(5), 299-304. <https://doi.org/10.61336/jmsr/25-05-34>
3. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340. <https://doi.org/10.2307/249008>
4. Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Addison-Wesley.
5. Freeman, G. H., & Halton, J. H. (1951). Note on an exact treatment of contingency, goodness of fit and other problems of significance. *Biometrika*, 38(1-2), 141-149. <https://doi.org/10.2307/2332323>
6. India Brand Equity Foundation. (2025). E-commerce revolution in India: Driving growth in rural areas and reshaping consumer behaviour. <https://www.ibef.org/research/case-study/e-commerce-revolution-in-india-driving-growth-in-rural-areas-and-reshaping-consumer-behaviour>
7. Mishra, A., Dutta, P., Reddy, S. P., & Praneet, T. (2023). The drivers and challenges for customer satisfaction in e-commerce industry for urban and rural India: A key stakeholders' perspectives. In A. Gunasekaran, J. K. Sharma, & S. Kar (Eds.), *Applications of operational research in business and industries* (pp. 429-452). Springer. https://doi.org/10.1007/978-981-19-8012-1_28
8. Tandon, U. (2021). Predictors of online shopping in India: An empirical investigation. *Journal of Marketing Analytics*, 9, 65-79. <https://doi.org/10.1057/s41270-020-00084-6>
9. Xu, Y., & Paulins, V. A. (2005). College students' attitudes toward shopping online for apparel products: Exploring a rural versus urban campus. *Journal of Fashion Marketing and Management*, 9(4), 420-433. <https://doi.org/10.1108/13612020510620795>