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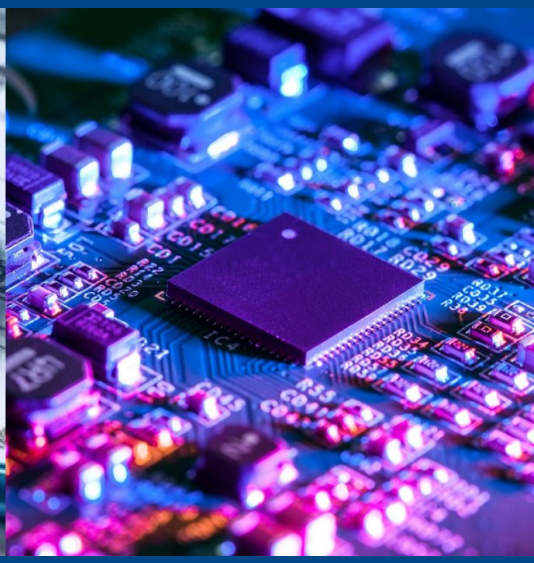

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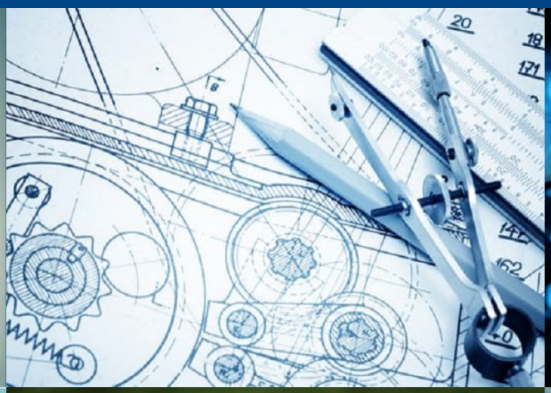

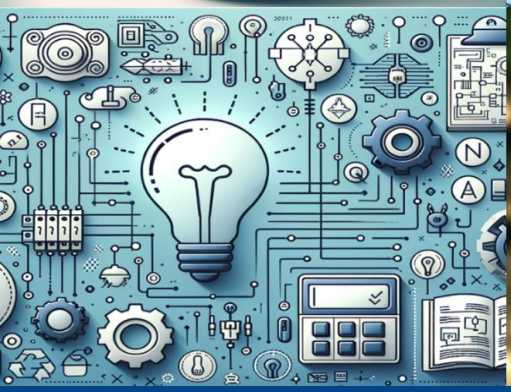

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Influence of Transparent Pricing and Expected Delivery Dates on Customer Trust

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ABSTRACT: India's booming e-commerce sector has intensified competition around delivery — arguably the most visible touchpoint between platforms and consumers. This paper examines how the last-mile delivery experience (LMD) shapes customer satisfaction (CS) and repeat purchase intention (RPI) among urban online shoppers in India. Using primary data from 210 verified e-commerce users across major metropolitan cities, the study employs multiple regression analysis and mediation testing on validated Likert-scale instruments. Reliability was strong across all three constructs (Cronbach's $\alpha > 0.87$). Results show that LMD is a significant predictor of both CS ($\beta = 0.503$, $R^2 = 0.538$, $p < 0.001$) and RPI ($\beta = 0.368$, $R^2 = 0.442$, $p < 0.001$). Customer satisfaction also partially mediates the LMD–RPI relationship ($\beta = 0.291$, $p < 0.001$), suggesting that delivery quality drives loyalty through both evaluative and behavioural channels. Demographic analysis via one-way ANOVA reveals meaningful variation by age, income, and shopping frequency, though gender differences were non-significant. For practitioners, the findings make a strong case for systematic investment in delivery reliability, delay communication, and service recovery.

KEYWORDS: Last-Mile Delivery, Customer Satisfaction, Repeat Purchase Intention, E-Commerce, Consumer Behaviour, India

I. INTRODUCTION

Think about how often a delivery experience — arriving late, a battered package, no update from the platform — has coloured how you feel about an online store. Not the product, not the price, not the interface, but that last stretch of the journey. In logistics, the 'last mile' is the final leg of a shipment's route from a distribution point to the customer's door. It covers a fraction of the total distance yet ends up shaping much of the consumer's overall impression of the buying experience.

India's e-commerce market has scaled remarkably fast, crossing USD 70 billion in gross merchandise value by 2023 and widely expected to reach USD 350 billion by the end of the decade (IAMAI, 2023). But the infrastructure supporting this growth has not always kept pace — particularly at the delivery end. A Statista survey from 2022 found that over a third of Indian online shoppers had received at least one delayed order in the previous year, and nearly 28% had dealt with damaged packaging. These are not one-off events; cumulatively, they erode trust and push consumers toward competitors.

What makes this especially interesting from a research standpoint is how little the academic literature has engaged with the downstream end of the purchase journey in the Indian context. Most e-commerce satisfaction studies concentrate on the pre-purchase and checkout experience — browsing ease, transparent pricing, payment security. Very few have tried to quantify how much delivery quality, specifically, drives satisfaction and long-term buying behaviour. And fewer still have done so with Indian data.

This study addresses that gap. Drawing on 210 valid survey responses from active e-commerce users in metropolitan India, it investigates how last-mile delivery quality relates to customer satisfaction and repeat purchase intention, and whether satisfaction mediates that latter relationship. The theoretical scaffolding comes from three frameworks: Oliver's (1980) Expectation-Confirmation Theory, Parasuraman et al.'s (1988) SERVQUAL model, and Blau's (1964) Social Exchange Theory — each providing a different lens through which the delivery-loyalty relationship can be understood.

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II. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Expectation-Confirmation Theory, as originally framed by Oliver (1980) and later adapted for digital contexts by Bhattacherjee (2001), holds that post-purchase satisfaction is fundamentally a function of whether perceived performance matches or exceeds pre-purchase expectations. Applied to delivery, this is intuitive: a promised Tuesday delivery that arrives on Tuesday tends to satisfy; the same order arriving Thursday does not. The model has remained a workhorse in e-commerce satisfaction research precisely because it maps neatly onto the discrete, trackable nature of delivery events.

The SERVQUAL model (Parasuraman et al., 1988) offers a more granular view of service quality as the aggregate gap between expected and experienced service across five dimensions — reliability, assurance, tangibles, empathy, and responsiveness. Each has a clear delivery-side parallel: reliability corresponds to on-time performance, assurance to damage-free packaging, empathy to how courteously delivery agents interact with customers, and responsiveness to whether platforms proactively communicate when delays occur. The model is particularly useful for identifying where, not just whether, service falls short.

Complementing these is Blau's (1964) Social Exchange Theory, which views commercial relationships as sustained through reciprocal value exchange. A platform that consistently delivers on its promises signals good faith; consumers respond with loyalty, recommending behaviour, and ongoing patronage. Delivery failures work in the opposite direction — they represent a breach in the exchange relationship that, if repeated, gradually erodes the consumer's willingness to stay.

Empirically, Thirumalai and Sinha (2005) analysed over 1,700 B2C e-commerce transactions and found on-time delivery to be the single strongest driver of customer satisfaction — more influential than product quality, pricing, or website usability. Holloway and Beatty (2003) reported that delivery problems dominated consumer complaint data in online retail, and that proactive communication about delays significantly reduced the resulting dissatisfaction. Gefen, Karahanna, and Straub (2003) established that platform trust — partly built through consistent delivery — independently predicts purchase intention. Chiu et al. (2012) showed that repeat buying in e-commerce is largely habit-driven, formed through accumulated positive service interactions. And Sharma and Lijuan (2015), in one of the few India-specific studies, included delivery reliability as a top predictor of online purchase intention.

Taken together, this literature converges on the same conclusion: delivery quality matters, and it matters a lot. What it does not yet offer is a systematic test of how multiple dimensions of last-mile delivery relate to both satisfaction and repurchase intent in the Indian metropolitan context, or whether satisfaction formally mediates that second relationship. These are the questions this study is designed to answer.

2.1 Identified Research Gaps

Several gaps in the existing literature motivated this study. Most prior work operationalises delivery quality as a binary variable — on-time or not — ignoring the richer texture of the delivery experience (tracking accuracy, personnel behaviour, packaging condition, delay communication). India-specific empirical research on this topic remains thin despite the country's unique logistical challenges: inconsistent address infrastructure, heavy third-party logistics dependency, and geography-driven variability in service standards. Furthermore, while the satisfaction–loyalty chain is well theorised, its specific form in the Indian e-commerce setting — including the mediating role of satisfaction and the moderating role of demographics — has not been formally tested in a single study.

2.2 Research Hypotheses

H_1: Last-mile delivery experience has a significant positive effect on customer satisfaction.
H_2: Last-mile delivery experience has a significant positive effect on repeat purchase intention.
H_3: Customer satisfaction partially mediates the relationship between last-mile delivery experience and repeat purchase intention.
H_4: Demographic characteristics (age, gender, income, shopping frequency) moderate the LMD–CS and LMD–RPI relationships.

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III. RESEARCH METHODOLOGY

3.1 Study Design and Sample

The study uses a quantitative, descriptive-correlational design — appropriate given the goal of measuring the direction and strength of relationships between clearly defined constructs. The approach is deductive: hypotheses were derived from theory and then tested against empirical data, following a broadly positivist research philosophy.

Geographic coverage was limited to metropolitan and Tier-1 cities — Bengaluru, Mumbai, Delhi NCR, Hyderabad, and Chennai — where e-commerce penetration is highest and where the major platforms under study operate at meaningful scale. Tier-2 and Tier-3 markets were excluded to avoid confounding variability in infrastructure and usage patterns. Respondents were adults aged 18 and above who had made at least one online purchase in the six months before the survey — a recency filter to ensure responses reflected active experience. Sampling was non-probability and purposive. Data collection ran via Google Forms between December 2025 and February 2026. Of 248 responses received, 210 were retained after removing incomplete and inattentive entries (valid response rate: 84.7%).

3.2 Measurement Scales

All three constructs — LMD, CS, and RPI — were each captured through five items on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Items were drawn from established scales in operations management and consumer behaviour research and adapted for the Indian context following a pilot study with 30 MBA students; minor wording changes were made based on pilot feedback. Pre-main-study alpha values ranged from 0.845 to 0.878.

The LMD scale covered: on-time delivery accuracy, tracking reliability, delivery agent professionalism, packaging condition, and proactive delay notification. The CS scale addressed overall service satisfaction, expectation fulfillment, perceived value-for-money, complaint resolution, and general platform rating. RPI items tapped into intention to repurchase, platform preference over alternatives, resistance to switching, willingness to recommend, and long-term loyalty disposition.

3.3 Analysis Approach

IBM SPSS Statistics Version 26 was used throughout. The analytical sequence moved from descriptive profiling and reliability testing (Cronbach's alpha), through Pearson correlation analysis, to ordinary least squares regression for hypothesis testing. OLS diagnostics included the Kolmogorov-Smirnov test for normality, Breusch-Pagan for homoscedasticity, VIF for multicollinearity, and Cook's Distance for outliers. Mediation was assessed using the Baron and Kenny (1986) four-step procedure. Demographic group differences in CS and RPI were tested using one-way ANOVA, with post-hoc Tukey HSD where significant. The significance threshold was $p < 0.05$, with additional notation for $p < 0.01$ and $p < 0.001$.

IV. RESULTS

4.1 Sample Profile

Of the 210 respondents, 53.3% identified as male and 44.8% as female (1.9% other or preferred not to say). The 26–35 age bracket was largest at 42.4%, followed by 18–25 year olds (32.4%), 36–45 (18.1%), and those above 46 (7.1%). Monthly household income was most concentrated in the ₹25,001–₹50,000 band (33.8%). Shopping frequency was predominantly monthly (46.7%) or weekly (31.9%). Amazon India and Flipkart together accounted for roughly three-quarters of primary platform usage.

4.2 Scale Reliability and Descriptive Findings

Internal reliability was strong across all three constructs, as shown in Table 1. Cronbach's alpha ranged from 0.871 to 0.884, comfortably above both exploratory (0.70) and confirmatory (0.80) benchmarks, with mean inter-item correlations within the 0.15–0.65 band recommended by Clark and Watson (1995).

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Table 1: Scale Reliability and Descriptive Summary (n = 210)

Construct	Items	Mean Range	Cronbach's α	Reliability Level
Last-Mile Delivery Exp. (LMD)	5	3.52 – 3.83	0.884	Good
Customer Satisfaction (CS)	5	3.55 – 3.74	0.871	Good
Repeat Purchase Intention (RPI)	5	3.53 – 3.70	0.877	Good

Table 1: Scale Reliability and Descriptive Summary (n = 210)

Item-level means told an interesting story. Packaging condition (LMD4, M = 3.83, SD = 0.76) scored highest across all fifteen items, indicating that consumers generally feel goods arrive intact. Proactive delay communication (LMD5, M = 3.52, SD = 1.04) scored lowest — and its comparatively high standard deviation suggests considerable inconsistency across platforms. Among satisfaction items, complaint resolution (CS4, M = 3.55) was the weakest performer, pointing to a recovery gap that deserves attention.

4.3 Correlation Analysis

Pearson correlations among construct composite scores were all positive and significant at the 1% level: LMD–CS (r = 0.619), LMD–RPI (r = 0.538), and CS–RPI (r = 0.571). The somewhat stronger association between LMD and CS compared to LMD and RPI was the first hint of a potential mediation structure.

4.4 Regression Results

Two regression models were estimated with LMD as the independent variable. Model 1 regressed CS on LMD; Model 2 regressed RPI on LMD. Results are presented in Table 2.

Table 2: Regression Analysis Results (n = 210)

Model	Dependent Variable	β (LMD)	t	R^2	F	Sig.
1	Customer Satisfaction	0.503	9.96	0.538	247.82	< 0.001
2	Repeat Purchase Intention	0.368	6.52	0.442	169.12	< 0.001

Model 1 was statistically significant overall ($F(1,208) = 247.82$, $p < 0.001$) and explained 53.8% of variance in customer satisfaction — well above the 20–40% range typical for single-predictor models in consumer behaviour research. A one standard deviation increase in perceived delivery quality corresponded to a 0.503 SD increase in satisfaction. Model 2 was similarly strong ($F(1,208) = 169.12$, $p < 0.001$, $R^2 = 0.442$), with a β of 0.368 for LMD's effect on RPI. Both H_1 and H_2 are supported.

4.5 Mediation Analysis

Table 3 summarises the Baron and Kenny (1986) four-step test for partial mediation through customer satisfaction.

Step	Path Tested	β	p-value	Outcome
1	LMD → RPI (without CS)	0.368	< 0.001	Condition met
2	LMD → CS	0.503	< 0.001	Condition met
3	CS → RPI (controlling for LMD)	0.291	< 0.001	Condition met
4	LMD → RPI (controlling for CS)	0.244	< 0.001	Partial mediation confirmed

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Table 3: Mediation Analysis — Baron and Kenny (1986) Framework

All four conditions were met. The LMD–RPI path dropped from β = 0.368 to β = 0.244 once CS was included as a covariate — a meaningful reduction, though the path remained significant. This confirms partial mediation: customer satisfaction accounts for some, but not all, of how delivery quality translates into repurchase loyalty, supporting H_3.

4.6 Demographic Subgroup Analysis

Gender was not a significant differentiator for CS (F = 2.21, p = 0.112) or RPI (F = 2.64, p = 0.073) — a finding worth noting given assumptions sometimes made about gender-based service sensitivity. Age, however, mattered: both CS (F = 4.19, p = 0.006) and RPI (F = 3.87, p = 0.010) varied significantly across age groups, with post-hoc Tukey tests showing the 26–35 cohort reporting higher scores than the 36–45 bracket. Income-based differences were similarly significant (CS: F = 5.13, p = 0.002; RPI: F = 4.64, p = 0.004), with higher-income respondents generally more satisfied. Shopping frequency produced the sharpest effects (CS: F = 6.48, p < 0.001; RPI: F = 5.91, p < 0.001) — weekly shoppers scored noticeably higher than occasional ones, consistent with Garbarino and Johnson's (1999) argument that trust deepens with repeated positive interactions. H_4 is partially supported.

Table 4: Hypothesis Testing Summary

H	Summary Statement	Key Statistic	Decision
H_1	LMD → Customer Satisfaction	β=0.503, R^2=0.538, p<0.001	Supported
H_2	LMD → Repeat Purchase Intention	β=0.368, R^2=0.442, p<0.001	Supported
H_3	CS mediates LMD–RPI	β reduced 0.368→0.244, p<0.001	Supported (Partial Mediation)
H_4	Demographics moderate relationships	F=2.21–6.48; age, income, freq. sig.	Partially Supported

V. DISCUSSION

Perhaps the most striking finding is just how much delivery experience explains. An R^2 of 0.538 means that over half the variance in customer satisfaction — across 210 respondents using different platforms for different product categories — can be traced back to a single construct: how well the last-mile delivery performed. This is unusual for consumer behaviour research, where single-predictor models rarely achieve this level of explanatory power. It speaks to just how central the delivery moment has become in the Indian e-commerce experience.

From an ECT standpoint, this makes sense. Unlike product quality, which can be pre-assessed from images and reviews, delivery is experienced almost entirely after the point of commitment. There's no hedging against a poor delivery — by the time it happens, the consumer has already paid. So when delivery falls short of what was promised, the disconfirmation is both vivid and hard to rationalise away.

The direct effect of LMD on RPI (β = 0.368) surviving even after controlling for satisfaction is theoretically interesting. It implies that consumers don't only return to a platform because they were satisfied — some portion of loyalty seems to be more automatic, built through repeated positive delivery interactions that gradually become the 'default' experience. This is consistent with Chiu et al.'s (2012) habit-formation argument and aligns with Social Exchange Theory's framing of sustained relationships as rooted in accumulated reciprocal value.

The weakest delivery item — LMD5, proactive delay communication (M = 3.52, SD = 1.04) — deserves particular attention. The high standard deviation tells us this is not uniformly bad across platforms; it is inconsistently managed. Some consumers clearly receive timely updates when orders are late; many do not. Given that Holloway and Beatty (2003) showed proactive communication to be one of the most effective tools for limiting satisfaction damage during delivery failures, the lack of standardisation here represents a straightforward and high-value improvement opportunity.

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A delayed delivery does not have to result in a dissatisfied customer — but only if the consumer is informed before they start wondering where their package is.

The non-significance of gender differences in both CS and RPI scores is worth pausing on. It runs counter to a view sometimes assumed in marketing practice that female consumers are more sensitive to service quality. The data here do not support that, at least not for delivery specifically. Age and purchase frequency, on the other hand, do produce differences — and the sharp gap between weekly and occasional shoppers reinforces the idea that loyalty is partly learned through repeated positive experience.

VI. CONCLUSIONS, LIMITATIONS, AND FUTURE DIRECTIONS

6.1 Conclusions

Taken together, the findings of this study reinforce a case that the logistics industry has long made intuitively but that empirical e-commerce research has been slow to formalise in the Indian context: what happens after the checkout button matters enormously. Last-mile delivery quality is not a backend operational concern — it is a front-line driver of how consumers feel about platforms and whether they return to them.

For managers, this translates into six concrete action areas. First, the most underperforming delivery dimension — proactive delay communication — should be addressed through real-time logistics monitoring that triggers automatic updates the moment an order is at risk of missing its window. Second, post-purchase complaint resolution needs to be faster and more frictionless; the current gap between expectations and reality on this dimension (CS4, M = 3.55) is where dissatisfied customers are most likely being created. Third, delivery agent training should be standardised across third-party logistics partners, since personnel professionalism directly influences consumer perceptions. Fourth, occasional shoppers warrant targeted retention efforts — their lower satisfaction and RPI scores suggest they are not yet experiencing the cumulative loyalty benefits that frequent shoppers report. Fifth, platforms should treat satisfaction scores as a leading rather than a lagging indicator, designing service recovery protocols specifically optimised to restore satisfaction after delivery failures. Finally, platforms with consistently strong delivery metrics should consider making this visible — credible performance disclosures reduce perceived risk for first-time buyers and signal platform trustworthiness.

6.2 Limitations

A few caveats are necessary. The cross-sectional design limits causal inference — while the relationships identified here are theoretically grounded and statistically robust, longitudinal data would be needed to confirm directional causality and track how delivery quality effects accumulate or decay over time. The sample, while reasonably sized, was drawn through purposive non-probability sampling and may over-represent younger, digitally active, metropolitan consumers. The mediation analysis relied on the Baron and Kenny (1986) framework, which is now considered less precise than bootstrapping-based approaches (Preacher & Hayes, 2008) — future work should address this. And as with all survey-based studies, self-reported perceptions of delivery quality are not the same as objective operational metrics; incorporating platform-side data would strengthen future analyses considerably.

6.3 Directions for Future Research

Several interesting questions remain open. A panel study following the same consumers through multiple delivery interactions over 12 to 18 months would shed light on how loyalty forms and what types of failures are most damaging to long-term retention. Formal moderated regression testing of demographic interaction effects would clarify which consumer segments are most and least sensitive to delivery quality variation. Extending the model to include returns experience, payment security, and customer service responsiveness within a unified structural equation framework would allow a comprehensive ranking of e-commerce loyalty antecedents. And a qualitative component — interviews or think-aloud protocols — would help explain the psychological mechanisms underlying some of the more nuanced findings, such as why delivery quality drives repurchase intent even through channels that bypass explicit satisfaction evaluation.

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REFERENCES

1. Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research. Journal of Personality and Social Psychology, 51(6), 1173–1182.
2. Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. MIS Quarterly, 25(3), 351–370.
3. Blau, P. M. (1964). Exchange and power in social life. Wiley.
4. Chiu, C. M., Hsu, M. H., Lai, H., & Chang, C. M. (2012). Re-examining the influence of trust on online repeat purchase intention. Decision Support Systems, 53(4), 835–845.
5. Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. Psychological Assessment, 7(3), 309–319.
6. Flavian, C., Guinaliu, M., & Gurrea, R. (2006). The role played by perceived usability, satisfaction and consumer trust on website loyalty. Information & Management, 43(1), 1–14.
7. Garbarino, E., & Johnson, M. S. (1999). The different roles of satisfaction, trust, and commitment in customer relationships. Journal of Marketing, 63(2), 70–87.
8. Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. MIS Quarterly, 27(1), 51–90.
9. Holloway, B. B., & Beatty, S. E. (2003). Service failure in online retailing: A recovery opportunity. Journal of Service Research, 6(1), 92–105.
10. IAMAI. (2023). India internet report 2023. Internet and Mobile Association of India.
11. McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and validating trust measures for e-commerce. Information Systems Research, 13(3), 334–359.
12. Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. Journal of Marketing, 58(3), 20–38.
13. Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. Journal of Marketing Research, 17(4), 460–469.
14. Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. Journal of Retailing, 64(1), 12–40.
15. Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects. Behavior Research Methods, 40(3), 879–891.
16. Reichheld, F. F., & Schefter, P. (2000). E-loyalty: Your secret weapon on the web. Harvard Business Review, 78(4), 105–113.
17. Sharma, R., & Lijuan, W. (2015). Determinants of online shopping intention in India. Journal of Electronic Commerce Research, 16(2), 132–143.
18. Statista. (2022). E-commerce delivery experiences survey: India. Statista Research Department.
19. Thirumalai, S., & Sinha, K. K. (2005). Customer satisfaction with order fulfillment in retail supply chains. Journal of Operations Management, 23(3–4), 291–303.
20. Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value. Journal of Marketing, 52(3), 2–22.
21.

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