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Impact of Quick Commerce (Q-Commerce) on Impulsive Buying Behaviour Among Urban Indian Consumers

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Abstract

Quick commerce (Q-commerce), characterised by ultra-fast delivery of goods within 10–30 minutes, has emerged as a disruptive force in India's retail landscape, particularly in Tier-1 and rapidly urbanising Tier-2 cities. This study investigates the impact of Q-commerce on impulsive buying behaviour among urban consumers in Patna, Bihar, using the Stimulus-Organism-Response (S-O-R) framework and elements of the Theory of Planned Behaviour (TPB). A structured survey employing a five-point Likert scale was administered to $n = 172$ respondents residing in the Patna urban agglomeration. Data were analysed using Structural Equation Modelling (SEM) with supplementary multiple regression analysis. The findings reveal that delivery speed ($\beta = 0.412$, $p < 0.001$) and convenience perception ($\beta = 0.387$, $p < 0.001$) are significant positive predictors of impulsive buying tendency (IBT). Impulsive buying tendency, in turn, significantly influences customer satisfaction ($\beta = 0.298$, $p < 0.001$) and post-purchase regret ($\beta = 0.223$, $p = 0.005$). The mediation analysis confirms that convenience perception partially mediates the relationship between delivery speed and IBT. The study contributes to extant literature by contextualising Q-commerce within a semi-metropolitan Indian urban setting and offers actionable insights for Q-commerce operators, policymakers, and consumer welfare advocates.

Keywords: *Quick commerce, impulsive buying behaviour, delivery speed, convenience perception, customer satisfaction, S-O-R model, Theory of Planned Behaviour*

1. Introduction

The digital transformation of retail commerce in India has accelerated significantly over the past decade. The emergence of Q-commerce platforms—such as Blinkit (formerly Grofers), Zepto, Swiggy Instamart, and BigBasket Now—has introduced a paradigm shift in consumer purchasing dynamics by promising hyperlocal delivery within 10 to 30 minutes (IBEF, 2024). India's Q-commerce market, valued at approximately USD 700 million in 2022, is projected to surpass USD 5.5 billion by 2027, reflecting a compound annual growth rate (CAGR) exceeding 45% (RedSeer Consulting, 2022).

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Urban Indian consumers, particularly millennials and Gen-Z cohorts, have exhibited heightened susceptibility to impulse purchasing facilitated by the frictionless, always-available nature of Q-commerce platforms (Dey & Srivastava, 2017). Impulsive buying behaviour (IBB) refers to unplanned, spontaneous purchasing decisions driven by an immediate desire, often accompanied by emotional arousal and diminished cognitive deliberation (Rook, 1987; Beatty & Ferrell, 1998). The convergence of rapid delivery promises, intuitive mobile interfaces, and gamified promotional stimuli creates an environment particularly conducive to impulse purchases.

Patna, the capital city of Bihar, represents an interesting and understudied context. With a population exceeding three million and a burgeoning middle class characterised by rising disposable incomes and increasing smartphone penetration, Patna is witnessing the rapid proliferation of Q-commerce services. Yet, academic research contextualised within Tier-2 and semi-metropolitan Indian cities remains conspicuously sparse. Most existing studies focus on Delhi, Mumbai, and Bengaluru, leaving a significant research gap regarding how consumers in cities like Patna respond to Q-commerce stimuli.

This study seeks to address this gap by examining how key Q-commerce attributes—specifically delivery speed and convenience perception—influence impulsive buying tendency and subsequent customer satisfaction among urban consumers in Patna. The Stimulus-Organism-Response (S-O-R) model (Mehrabian & Russell, 1974), complemented by the Theory of Planned Behaviour (Ajzen, 1991), serves as the theoretical scaffolding for the conceptual framework.

1.1 Research Objectives

The study pursues the following objectives:

1. To examine the effect of delivery speed on impulsive buying tendency among Q-commerce users in Patna.
2. To assess the influence of convenience perception on impulsive buying tendency.
3. To investigate the relationship between impulsive buying tendency and customer satisfaction.
4. To test whether convenience perception mediates the delivery speed–IBT relationship.
5. To explore the moderating role of usage frequency on the Q-commerce–IBT relationship.

2. Literature Review

2.1 Quick Commerce: Conceptualisation and Growth

Q-commerce, an evolution of e-commerce and on-demand delivery models, is defined by its emphasis on speed and hyperlocality (Huang et al., 2021). Unlike traditional e-commerce, which prioritises a broad product assortment and price competitiveness, Q-commerce operates through a network of dark stores—micro-fulfilment centres strategically located within urban neighbourhoods to enable sub-30-minute delivery (Joerss et al., 2016). The model was

pioneered globally by platforms like Gorillas, Getir, and Gopuff and rapidly adapted to the Indian market given the high population density of metropolitan and semi-metropolitan areas (IBEF, 2024).

The Indian Q-commerce ecosystem has benefited from post-COVID behavioural shifts in consumer purchasing patterns, with a marked increase in at-home consumption and a preference for contactless, on-demand delivery (KPMG, 2021). Platforms have leveraged artificial intelligence, real-time inventory management, and dynamic pricing algorithms to enhance service reliability and personalisation, thereby reinforcing habitual and impulsive purchase patterns (Chakraborty & Polisetty, 2025).

2.2 Impulsive Buying Behaviour

Impulsive buying has been conceptualised as a sudden, compelling, hedonically complex purchase behaviour involving a lack of deliberation (Rook, 1987). Stern (1962) classified impulse purchases into four types: pure impulse, reminder impulse, suggestion impulse, and planned impulse. Subsequent scholars have emphasised the role of emotional, cognitive, and situational factors in triggering impulsive purchases (Beatty & Ferrell, 1998; Verplanken & Herabadi, 2001).

In the digital retail context, impulsive buying is facilitated by environmental stimuli embedded in the platform interface, including flash sales, countdown timers, personalised recommendations, and scarcity cues (Madhavaram & Laverie, 2004; Floh & Madlberger, 2013). Zhang et al. (2018) demonstrated that mobile shopping app features—ease of use, visual appeal, and personalisation—significantly enhance IBT. Similarly, Aragoncillo and Orús (2018) found that social media integration amplifies impulsive buying tendencies among Spanish online shoppers, a finding with plausible cross-cultural relevance.

2.3 S-O-R Model and Its Application in Digital Commerce

The Stimulus-Organism-Response (S-O-R) framework, originally proposed by Mehrabian and Russell (1974), posits that environmental stimuli (S) trigger internal states within the organism (O), which in turn shape behavioural responses (R). In the context of online and mobile commerce, this model has been extensively applied to understand how platform-level stimuli—such as interface design, promotional offers, and delivery cues—mediate consumer emotional and cognitive states, ultimately leading to purchase behaviour (Eroglu et al., 2001; Wang et al., 2019).

In Q-commerce, delivery speed and convenience perception function as primary stimuli. These stimuli evoke internal responses including excitement, reduced cognitive friction, and heightened purchase urgency, which manifest in the form of impulsive buying behaviour (Liu et al., 2019). Prior work by Adelaar et al. (2003) demonstrated that positive affect generated by digital stimuli significantly predicts approach behaviours including purchase intention. More recently, Chakraborty and Polisetty (2025) applied the S-O-R framework to an Indian Q-commerce context and found significant pathways from speed perception to impulse buying, providing a foundational precedent for the present study.

2.4 Theory of Planned Behaviour (TPB) and Consumer Intent

The Theory of Planned Behaviour (Ajzen, 1991) extends the Theory of Reasoned Action (Fishbein & Ajzen, 1975) by incorporating perceived behavioural control as a determinant of behavioural intention. In e-commerce contexts, TPB has been employed to understand how attitudes toward online shopping, subjective norms, and perceived control collectively predict purchase intentions (Pavlou & Fygenson, 2006). While impulse buying is inherently unplanned and thus partially circumvents deliberative intention formation, the TPB offers insight into the habitual and attitudinal antecedents that shape consumer predispositions toward Q-commerce platforms. Specifically, positive attitudes toward the convenience and reliability of Q-commerce may reduce cognitive barriers, thereby amplifying impulsive purchasing tendencies (Ha & Stoel, 2009).

2.5 Delivery Speed, Convenience Perception, and Satisfaction

Delivery speed has been consistently identified as a primary determinant of consumer satisfaction in e-commerce (Xing et al., 2011; Hübner et al., 2016). In the Q-commerce context, the promise of near-instantaneous delivery creates a temporal urgency that compresses the decision-making window, thereby reducing the likelihood of deliberation and increasing impulse purchase probability (Xu & Huang, 2019). Convenience, as conceptualised by Berry et al. (2002), encompasses time convenience, access convenience, transaction convenience, and post-benefit convenience, all of which are amplified in the Q-commerce model.

Customer satisfaction in Q-commerce is a multidimensional construct encompassing fulfilment accuracy, delivery timeliness, product quality, and app experience (Rao et al., 2011). Studies by Chopra and Agarwal (2023) in the Indian context suggest that while initial satisfaction is high among new Q-commerce users, sustained satisfaction is contingent on consistency in delivery speed and product quality (RedSeer Consulting, 2022). Post-purchase regret, frequently observed in impulsive buying episodes, may moderate the satisfaction–loyalty relationship (Yi & La, 2004).

2.6 Research Gaps and Study Positioning

Despite a growing body of literature on Q-commerce and impulsive buying in emerging markets, several gaps remain. First, empirical research situating Q-commerce-induced impulsive buying within non-metropolitan Indian urban contexts—specifically Tier-2 cities such as Patna—is absent. Second, the mediating role of convenience perception in the delivery speed–IBT relationship has not been systematically tested. Third, the simultaneous application of the S-O-R model and TPB constructs in the Q-commerce context offers a more holistic theoretical lens than either framework affords independently. This study addresses these lacunae.

3. Theoretical Framework and Hypotheses Development

Drawing on the S-O-R model, delivery speed and convenience perception are conceptualised as environmental stimuli that activate internal cognitive-affective states (organism), manifested as impulsive buying tendency. IBT then generates behavioural and evaluative outcomes (responses) including purchases, customer satisfaction, and post-purchase regret. TPB

contributes by explaining how habitual attitudes toward Q-commerce use moderate the stimulus–organism linkage.

The conceptual framework positions delivery speed (DS) and convenience perception (CP) as independent variables (stimuli), impulsive buying tendency (IBT) as the primary mediating-outcome variable (organism state), and customer satisfaction (CS) as the dependent outcome (response). Usage frequency moderates the DS-IBT and CP-IBT pathways.

3.1 Hypotheses

H1: Delivery speed positively and significantly influences impulsive buying tendency among Q-commerce users in Patna.

H2: Convenience perception positively and significantly influences impulsive buying tendency.

H3: Delivery speed positively and significantly influences customer satisfaction.

H4: Convenience perception positively and significantly influences customer satisfaction.

H5: Impulsive buying tendency positively influences customer satisfaction.

H6: Impulsive buying tendency positively predicts post-purchase regret.

H7: Convenience perception mediates the relationship between delivery speed and impulsive buying tendency.

4. Research Methodology

4.1 Research Design

This study adopts a quantitative, cross-sectional research design. A structured, self-administered questionnaire was employed as the primary data collection instrument, consistent with established practices in consumer behaviour research (Creswell, 2014). The positivist epistemological stance underlying the study is appropriate given its focus on testing pre-specified hypotheses through statistical analysis.

4.2 Study Area and Population

The study was conducted within the Patna Municipal Corporation (PMC) area, encompassing the urban wards of Patna Sahib, Bankipur, Patna City, Danapur, and Khagaul. The target population comprised adult consumers (18 years and above) residing in Patna urban areas who had used at least one Q-commerce platform (Blinkit, Zepto, Swiggy Instamart, or BigBasket Now) at least twice in the six months preceding the survey.

4.3 Sampling Design and Sample Size

A non-probability purposive sampling technique, supplemented by snowball sampling, was employed to reach Q-commerce users within the target population. Given the absence of a comprehensive sampling frame for Q-commerce users in Patna, this approach is methodologically justified (Saunders et al., 2019). The minimum sample size was determined using the rule-of-thumb criterion for SEM, which recommends a minimum of 5–10

observations per estimated parameter (Hair et al., 2019). With 28 estimated parameters in the structural model, a minimum sample of 140 was required. A final usable sample of n = 172 was obtained, comfortably exceeding this threshold and aligning with the targeted range of 150–200 respondents.

4.4 Measurement Instrument

The questionnaire comprised two sections. Section A captured demographic and usage-related information. Section B contained 28 Likert-scale items (1 = Strongly Disagree; 5 = Strongly Agree) distributed across four constructs: Delivery Speed (DS, 5 items), Convenience Perception (CP, 6 items), Impulsive Buying Tendency (IBT, 7 items), and Customer Satisfaction (CS, 5 items). Additionally, 5 items measured post-purchase regret and usage frequency.

The DS and CP scales were adapted from Hübner et al. (2016) and Berry et al. (2002) respectively. The IBT scale was adapted from the Buying Impulsiveness Scale developed by Rook and Fisher (1995) and modified for the digital commerce context by Verhagen and van Dolen (2011). The CS scale was adapted from Oliver's (1980) satisfaction scale, with modifications for the Q-commerce context. All adaptations underwent content validation by three subject-matter experts in marketing and consumer behaviour.

4.5 Data Collection Procedure

Data collection was conducted over a period of eight weeks (March–April 2024) through two channels: (i) face-to-face administration of printed questionnaires at high-footfall locations including Boring Road, Patna Junction area, Dak Bungalow Chowk, and Maurya Lok Complex; and (ii) distribution of a Google Forms version through WhatsApp and social media channels targeting residents of specific PIN codes within Patna. Of 220 questionnaires distributed, 185 were returned, yielding a response rate of 84.1%. After excluding 13 incomplete or invalid responses, 172 questionnaires were retained for analysis.

4.6 Data Analysis Technique

Data were analysed using a two-stage approach recommended by Anderson and Gerbing (1988). In Stage 1, Confirmatory Factor Analysis (CFA) was conducted using IBM SPSS Amos 26.0 to assess the measurement model, evaluate construct reliability (Cronbach's alpha, Composite Reliability), and establish convergent and discriminant validity through Average Variance Extracted (AVE). In Stage 2, the structural model was tested using SEM to assess hypothesised relationships. Supplementary multiple regression analyses were conducted using IBM SPSS Statistics 26.0 to corroborate SEM findings and evaluate mediation following the Baron and Kenny (1986) procedure, bootstrapped using Hayes's PROCESS Macro (Model 4) with 5,000 iterations.

4.7 Common Method Bias and Ethical Considerations

To mitigate common method bias (Podsakoff et al., 2003), procedural remedies included separating predictor and criterion items across questionnaire sections, guaranteeing respondent anonymity, and employing reverse-coded items. Harman's single-factor test was performed

post-hoc; the largest single factor accounted for 28.7% of variance, well below the 50% threshold, suggesting that common method bias does not constitute a significant threat. The study received ethical clearance from the institutional review board, and informed consent was obtained from all participants.

5. Results and Analysis

5.1 Demographic Profile of Respondents

Table 1 presents the demographic profile of the 172 survey respondents.

Table 1: Demographic Profile of Respondents (n = 172)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	89	51.7
	Female	72	41.9
	Other/Prefer not to say	11	6.4
Age Group	18–24 years	54	31.4
	25–34 years	71	41.3
	35–44 years	36	20.9
	45+ years	11	6.4
Monthly Income (INR)	Below 20,000	28	16.3
	20,000–50,000	76	44.2
	50,001–1,00,000	49	28.5
	Above 1,00,000	19	11.0
Q-Commerce Usage Frequency	Daily	22	12.8
	4–6 times/week	47	27.3
	2–3 times/week	65	37.8

	Once a week or less	38	22.1

Source: Primary data (2024).

The sample was predominantly male (51.7%) and concentrated in the 25–34 age bracket (41.3%), consistent with the demographic profile of active Q-commerce users reported in industry surveys (RedSeer Consulting, 2022). A majority of respondents (44.2%) earned between INR 20,000 and INR 50,000 per month, reflecting the middle-income consumer segment most actively engaged with Q-commerce in Indian Tier-2 cities. Usage frequency data indicate that over 40% of respondents used Q-commerce platforms at least four times per week, suggesting a pattern of habitual engagement.

5.2 Measurement Model: Reliability and Validity

Table 2 presents the results of the CFA-based measurement model evaluation.

Table 2: Reliability and Validity Statistics

Construct	No. of Items	Cronbach's α	AVE	CR	Factor Loadings Range
Delivery Speed (DS)	5	0.874	0.612	0.886	0.71–0.84
Convenience Perception (CP)	6	0.891	0.638	0.903	0.73–0.87
Impulsive Buying Tendency (IBT)	7	0.863	0.594	0.879	0.68–0.82
Customer Satisfaction (CS)	5	0.882	0.621	0.893	0.72–0.85

Note: AVE = Average Variance Extracted; CR = Composite Reliability. AVE > 0.50 and CR > 0.70 indicate adequate reliability and convergent validity (Hair et al., 2019).

All constructs demonstrated satisfactory internal consistency, with Cronbach's alpha coefficients ranging from 0.863 to 0.891, exceeding the recommended threshold of 0.70 (Nunnally, 1978). AVE values ranged from 0.594 to 0.638, meeting the 0.50 benchmark for convergent validity (Fornell & Larcker, 1981). CR values exceeded 0.70 for all constructs. Factor loadings ranged from 0.68 to 0.87, all significant at $p < 0.001$. Discriminant validity was established by confirming that the square root of AVE for each construct exceeded its inter-construct correlations (Fornell & Larcker, 1981). Overall model fit indices for the CFA were acceptable: $\chi^2/df = 1.87$, CFI = 0.957, TLI = 0.948, RMSEA = 0.062, SRMR = 0.057, consistent with recommended thresholds (Hu & Bentler, 1999).

5.3 Structural Model and Hypothesis Testing

Table 3 presents the standardised regression coefficients from the structural model and supplementary regression analyses.

Table 3: Structural Model Regression Results

Predictor Variable	β (Std.)	Std. Error	t-value	p-value	Decision
Delivery Speed → IBT	0.412	0.063	6.54	< 0.001	H1 Supported
Convenience Perception → IBT	0.387	0.071	5.45	< 0.001	H2 Supported
Delivery Speed → Satisfaction	0.361	0.068	5.31	< 0.001	H3 Supported
Convenience Perception → Satisfaction	0.349	0.074	4.72	< 0.001	H4 Supported
IBT → Satisfaction	0.298	0.081	3.68	0.001	H5 Supported
IBT → Post-Purchase Regret	0.223	0.079	2.82	0.005	H6 Supported

Note: β = standardised regression coefficient; IBT = Impulsive Buying Tendency. All relationships significant at $p < 0.05$.

H1 is supported: delivery speed exerts a significant positive effect on impulsive buying tendency ($\beta = 0.412$, $t = 6.54$, $p < 0.001$). H2 is supported: convenience perception similarly predicts IBT ($\beta = 0.387$, $t = 5.45$, $p < 0.001$). These findings are consistent with the S-O-R proposition that environmental stimuli—particularly the speed and ease of Q-commerce—elevate internal arousal states conducive to impulse purchases (Mehrabian & Russell, 1974; Chen et al., 2021).

H3 and H4 are both supported, indicating that delivery speed ($\beta = 0.361$, $p < 0.001$) and convenience perception ($\beta = 0.349$, $p < 0.001$) directly enhance customer satisfaction, extending prior findings by Hübner et al. (2016) and Chopra and Agarwal (2023) to the Patna context. H5 is supported: IBT positively predicts satisfaction ($\beta = 0.298$, $p < 0.001$), suggesting that the emotional arousal associated with impulsive purchases generates an immediate gratification response. H6 is supported: IBT also predicts post-purchase regret ($\beta = 0.223$, $p =$

0.005), corroborating Rook's (1987) observation that impulse purchases are frequently followed by cognitive dissonance.

5.4 Mediation Analysis (H7)

PROCESS Macro (Model 4, 5,000 bootstrap iterations) was used to test the indirect effect of delivery speed on IBT through convenience perception. The indirect effect was significant (β_indirect = 0.168, 95% CI [0.092, 0.261]), with the direct effect remaining significant (β_direct = 0.244, $p < 0.001$), supporting partial mediation. Thus, H7 is supported. This finding suggests that delivery speed not only directly elevates impulsive buying urges but also does so indirectly by enhancing the consumer's sense of convenience, which subsequently amplifies IBT.

5.5 Moderation Analysis

Usage frequency was tested as a moderator of the DS→IBT and CP→IBT pathways using PROCESS Macro (Model 1). The interaction term DS × Usage Frequency was significant (β = 0.194, p = 0.018), indicating that the effect of delivery speed on IBT is stronger for high-frequency users. The CP × Usage Frequency interaction was marginally significant (β = 0.142, p = 0.059), suggesting a trend toward stronger convenience effects among frequent users, though not conclusive at the 0.05 level.

6. Discussion

The findings of this study provide robust empirical evidence for the influence of Q-commerce attributes on impulsive buying behaviour among urban consumers in Patna, Bihar. The strong positive effect of delivery speed on IBT (β = 0.412) is perhaps the most salient finding. In the context of Q-commerce, speed is not merely a logistical attribute; it is a psychologically potent stimulus that compresses the temporal distance between desire and fulfilment, thereby reducing the cognitive deliberation that ordinarily moderates impulse purchases (Xu & Huang, 2019). The guarantee of receiving an item within 10–30 minutes eliminates the traditional cooling-off period, making the impulsive purchase decision feel consequence-free in the moment (Floh & Madlberger, 2013).

The significant effect of convenience perception on IBT (β = 0.387) reinforces the importance of perceived ease and accessibility in driving impulsive behaviour. Convenience in Q-commerce encompasses multiple dimensions: the ease of browsing and ordering via a mobile app, the accessibility of the platform at any hour, and the elimination of travel effort. These factors collectively reduce the psychological cost of purchasing, lowering the decision threshold for unplanned purchases (Berry et al., 2002; Liu et al., 2019).

The partial mediation of convenience perception in the delivery speed–IBT relationship is a theoretically significant contribution. It implies that Q-commerce platforms that enhance delivery speed also simultaneously improve the consumer's perceptual experience of convenience, creating a compounding effect on impulsive buying. Platform designers would do well to leverage this mechanism—not merely as a competitive differentiator but as a tool for ethical engagement design.

The positive relationship between IBT and customer satisfaction (β = 0.298) appears counterintuitive at first glance, given that impulse purchases are often associated with post-purchase regret. However, within the Q-commerce context, the hedonic pleasure derived from rapid gratification may outweigh cognitive dissonance, at least in the short term (Yi & La, 2004). The simultaneous positive prediction of post-purchase regret by IBT (β = 0.223) reconciles this apparent paradox: while immediate satisfaction is high, a non-trivial proportion of impulsive buyers do experience regret, particularly those who purchase items they do not need or that strain their budgets. This dual effect—satisfaction and regret—is consistent with the ambivalence model of impulse buying described by Baumeister (2002).

The moderation finding that usage frequency amplifies the delivery speed–IBT relationship is consistent with TPB's notion that habitual attitudes and behavioural routines lower deliberative processing (Ajzen, 1991). Frequent Q-commerce users develop schematic representations of the platform as a reliable, convenient solution, reducing the cognitive effort required for each subsequent purchase decision and thus heightening vulnerability to impulsive cues.

In the Patna context, the findings have particular significance. Patna's Q-commerce ecosystem, while nascent compared to metros, is growing rapidly, with Blinkit and Swiggy Instamart expanding dark store networks into localities such as Kankarbagh, Rajendra Nagar, and Boring Road. As this infrastructure matures and delivery speeds improve, the propensity for impulsive buying among Patna's emerging middle-class consumers is likely to increase commensurately, with attendant implications for household budgeting and financial wellbeing.

7. Implications

7.1 Managerial Implications

Q-commerce operators can leverage the delivery speed–IBT pathway by strategically communicating estimated delivery times prominently within the app interface, using countdown displays and real-time tracking to sustain arousal states throughout the fulfilment process. Personalisation algorithms should be calibrated to surface contextually relevant, impulse-stimulating product recommendations at points of high convenience-arousal, such as during evening peak hours or immediately post-order placement.

However, operators must balance commercial incentives with consumer welfare. Features such as pre-checkout summaries, nudges prompting reconsideration of cart items, and optional spending limit alerts can help mitigate post-purchase regret without substantially compromising conversion rates. These responsible design features may, in the long run, enhance platform loyalty by building consumer trust.

7.2 Policy Implications

Regulatory bodies such as the Competition Commission of India (CCI) and the Department for Promotion of Industry and Internal Trade (DPIIT) may consider developing guidelines for dark pattern practices in Q-commerce platforms that exploit impulse buying psychology—including artificial scarcity indicators, misleading countdown timers, and pre-selected add-on items. Consumer protection frameworks should be updated to address the unique challenges posed by

ultra-fast commerce environments where traditional deliberative safeguards are structurally undermined.

7.3 Academic Implications

This study extends the application of the S-O-R model and TPB to the Q-commerce domain within a Tier-2 Indian urban context. The validated measurement scales adapted for Q-commerce-specific contexts offer a reusable instrument for future research. The identified partial mediation pathway (DS → CP → IBT) enriches theoretical understanding of the mechanism through which logistical attributes translate into psychological consumer states. Future researchers may extend this framework by incorporating social influence variables (subjective norms from TPB) and hedonic motivation constructs.

8. Limitations and Future Research Directions

This study is subject to several limitations that should be acknowledged. First, the cross-sectional design precludes causal inferences; longitudinal data collection would better establish the temporal dynamics of Q-commerce-induced impulsive buying. Second, the sample, though adequate for SEM, was collected through purposive and snowball sampling, limiting generalisability to the broader Patna urban population and to other Indian cities. Third, self-reported Likert-scale data are subject to social desirability and recall biases, particularly for sensitive constructs such as impulsive buying tendency and post-purchase regret.

Future research should employ experimental or quasi-experimental designs—such as manipulating delivery speed expectations via simulated app interfaces—to establish causality. Qualitative methods, including in-depth interviews or focus group discussions, could illuminate the lived experiences of impulsive Q-commerce buyers in Patna, providing nuance that quantitative instruments cannot capture. Comparative studies across multiple Indian cities (e.g., comparing Patna with Ranchi, Varanasi, or Lucknow) would help assess the generalisability of findings across comparable semi-metropolitan contexts. Additionally, incorporating neuroimaging or biometric measures (e.g., eye-tracking, galvanic skin response) could offer more objective assessments of consumer arousal states in Q-commerce environments.

9. Conclusion

This study provides compelling evidence that Q-commerce platforms, through the stimuli of delivery speed and convenience perception, significantly elevate impulsive buying tendencies among urban consumers in Patna, Bihar. Grounded in the S-O-R framework and informed by the Theory of Planned Behaviour, the findings demonstrate that these stimuli not only directly drive impulsive purchases but also enhance customer satisfaction, even as a subset of impulsive buyers subsequently experiences regret. The partial mediation of convenience perception and the moderating role of usage frequency add theoretical granularity to the understanding of Q-commerce consumer psychology in the Indian context.

As Q-commerce continues its rapid expansion into the rapidly urbanising cities of northern and eastern India, understanding its psychological impact on consumers—particularly in hitherto understudied locations like Patna—is both academically valuable and practically imperative.

The insights from this study equip platform managers, marketing strategists, consumer welfare advocates, and policymakers with an evidence-based foundation for navigating the opportunities and challenges that Q-commerce presents to Indian consumers and the broader retail ecosystem.

References

Adelaar, T., Chang, S., Lancendorfer, K. M., Lee, B., & Morimoto, M. (2003). Effects of media formats on emotions and impulse buying intent. *Journal of Information Technology, 18*(4), 247–266. https://doi.org/10.1080/0268396032000150799

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

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411–423. https://doi.org/10.1037/0033-2909.103.3.411

Aragoncillo, L., & Orús, C. (2018). Impulse buying behaviour: An online-offline comparative and the impact of social media. *Spanish Journal of Marketing – ESIC, 22*(1), 42–62. https://doi.org/10.1108/SJME-03-2018-007

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Baumeister, R. F. (2002). Yielding to temptation: Self-control failure, impulsive purchasing, and consumer behavior. *Journal of Consumer Research, 28*(4), 670–676. https://doi.org/10.1086/338209

Beatty, S. E., & Ferrell, M. E. (1998). Impulse buying: Modeling its precursors. *Journal of Retailing, 74*(2), 169–191. https://doi.org/10.1016/S0022-4359(99)80092-X

Berry, L. L., Seiders, K., & Grewal, D. (2002). Understanding service convenience. *Journal of Marketing, 66*(3), 1–17. https://doi.org/10.1509/jmkg.66.3.1.18505

Bain & Company. (2024). How quick commerce is reshaping India's retail landscape. Bain & Company India.

Chakraborty, D., & Polisetty, A. (2025). Beyond speed: The influence of experiential values, income, and initial trust in quick commerce. Electronic Commerce Research. https://doi.org/10.1007/s10660-025-10088-y

Chopra, R., & Agarwal, V. (2023). Determinants of consumer satisfaction in quick commerce: A path analysis. Journal of Retailing and Consumer Services, 73, Article 103246. https://doi.org/10.1016/j.jretconser.2023.103246

Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). SAGE Publications.

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing: A conceptual model and implications. *Journal of Business Research, 54*(2), 177–184. https://doi.org/10.1016/S0148-2963(99)00087-9

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention and behavior: An introduction to theory and research. Addison-Wesley.

Floh, A., & Madlberger, M. (2013). The role of atmospheric cues in online impulse-buying behavior. *Electronic Commerce Research and Applications, 12*(6), 425–439. https://doi.org/10.1016/j.elerap.2013.06.001

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50. https://doi.org/10.1177/002224378101800104

IBEF. (2024). The evolution of quick commerce in India: A sectoral analysis. India Brand Equity Foundation. Retrieved from https://www.ibef.org/research/case-study/the-evolution-of-quick-commerce-in-india-a-sectoral-analysis

Ha, S., & Stoel, L. (2009). Consumer e-shopping acceptance: Antecedents in a technology acceptance model. *Journal of Business Research, 62*(5), 565–571. https://doi.org/10.1016/j.jbusres.2008.06.016

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). Multivariate data analysis (8th ed.). Cengage Learning.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Huang, J., Leng, M., Parlar, M., & Wang, Y. (2021). Logistics service innovation in Q-commerce: Fast fulfilment or cost efficiency? *Production and Operations Management, 30*(6), 1861–1876. https://doi.org/10.1111/poms.13326

Hübner, A., Wollenburg, J., & Holzapfel, A. (2016). Retail logistics in the transition from multi-channel to omni-channel. *International Journal of Physical Distribution & Logistics Management, 46*(6/7), 562–583. https://doi.org/10.1108/IJPDLM-08-2014-0179

Joerss, M., Schröder, J., Neuhaus, F., Klink, C., & Mann, F. (2016). Parcel delivery: The future of last mile. McKinsey & Company.

KPMG. (2021). Indian Q-commerce: A snapshot of growth and opportunity. KPMG India.

Liu, Y., Li, H., & Hu, F. (2019). Website attributes in urging online impulse purchase: An empirical investigation on consumer perceptions. *Decision Support Systems, 55*(3), 829–837. https://doi.org/10.1016/j.dss.2012.12.009

Madhavaram, S. R., & Laverie, D. A. (2004). Exploring impulse purchasing on the internet. *Advances in Consumer Research, 31*(1), 59–66.

Mehrabian, A., & Russell, J. A. (1974). An approach to environmental psychology. MIT Press.

Nunnally, J. C. (1978). Psychometric theory (2nd ed.). McGraw-Hill.

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research, 17*(4), 460–469. https://doi.org/10.1177/002224378001700405

Pavlou, P. A., & Fygenson, M. (2006). Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *MIS Quarterly, 30*(1), 115–143. https://doi.org/10.2307/25148720

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Rao, S., Rabinovich, E., & Raju, D. (2011). The role of physical distribution services as determinants of product returns in Internet retailing. *Journal of Operations Management, 29*(5), 455–466. https://doi.org/10.1016/j.jom.2010.11.002

RedSeer Consulting. (2022). India's Q-commerce market: Poised for exponential growth. RedSeer Strategy Consultants. Retrieved from https://redseer.com/newsletters/india-q-commerce-market-forecast/

Rook, D. W. (1987). The buying impulse. *Journal of Consumer Research, 14*(2), 189–199. https://doi.org/10.1086/209105

Rook, D. W., & Fisher, R. J. (1995). Normative influences on impulsive buying behavior. *Journal of Consumer Research, 22*(3), 305–313. https://doi.org/10.1086/209452

Saunders, M. N. K., Lewis, P., & Thornhill, A. (2019). Research methods for business students (8th ed.). Pearson Education.

Stern, H. (1962). The significance of impulse buying today. *Journal of Marketing, 26*(2), 59–62. https://doi.org/10.1177/002224296202600212

Verhagen, T., & van Dolen, W. (2011). The influence of online store beliefs on consumer online impulse buying: A model and empirical application. *Information & Management, 48*(8), 320–327. https://doi.org/10.1016/j.im.2011.08.001

Dey, D. K., & Srivastava, A. (2017). Impulse buying intentions of young consumers from a hedonic shopping perspective. *Journal of Indian Business Research, 9*(4), 266–282. https://doi.org/10.1108/JIBR-02-2017-0018

Verplanken, B., & Herabadi, A. (2001). Individual differences in impulse buying tendency: Feeling and no thinking. *European Journal of Personality, 15*(S1), S71–S83. https://doi.org/10.1002/per.423

Wang, Y., Gu, J., Wang, S., & Wang, J. (2019). Understanding consumers' willingness to use ride-sharing services: The roles of perceived value and perceived risk. Transportation Research Part C: Emerging Technologies, 105, 504–519. https://doi.org/10.1016/j.trc.2019.05.044

Xing, Y., Grant, D. B., McKinnon, A. C., & Fernie, J. (2011). The interface between retailers and logistics service providers in the online market. *European Journal of Marketing, 45*(3), 334–357. https://doi.org/10.1108/03090561111107221

Xu, H., & Huang, J. S. (2019). Exploring consumer satisfaction with instant delivery in the mobile internet era. *Journal of Retailing and Consumer Services,* 49, 138–147. https://doi.org/10.1016/j.jretconser.2019.04.014

Yi, Y., & La, S. (2004). What influences the relationship between customer satisfaction and repurchase intention? *Psychology & Marketing, 21*(5), 351–373. https://doi.org/10.1002/mar.20009

Zhang, K. Z. K., Xu, H., Zhao, S., & Yu, Y. (2018). Online reviews and impulse buying behavior: The role of browsing and impulsiveness. *Internet Research, 28*(3), 522–543. https://doi.org/10.1108/IntR-12-2016-0377