

Consumer Adoption and Continuance in Quick-Commerce Grocery Platforms: A Conceptual Framework for Pune City

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DOI: <https://doi.org/10.51583/IJLTEMAS.2026.150800119>

Received: 29 August 2026; Accepted: 03 September 2026; Published: 21 September 2026

ABSTRACT

Quick commerce has changed urban grocery shopping by combining mobile ordering, hyperlocal fulfilment and delivery promises measured in minutes. Yet speed alone does not explain why consumers adopt a platform, continue purchasing or recommend it. This conceptual paper develops an integrated framework for studying quick-commerce grocery behaviour in Pune City. A structured integrative review synthesises technology acceptance, electronic service quality, perceived value, trust, risk, satisfaction and continuance literatures, with particular attention to recent Indian quick-commerce evidence. The synthesis identifies seven platform-level antecedents: perceived usefulness, perceived ease of use, delivery speed reliability, fulfilment and product quality, price fairness, privacy and payment security, and electronic word of mouth. These antecedents are proposed to shape three internal evaluations - perceived value, trust and satisfaction - which in turn influence adoption intention, repeat purchase and recommendation. Time pressure, prior digital-shopping experience, age and household composition are positioned as boundary conditions. Pune is a theoretically relevant setting because its heterogeneous urban neighbourhoods, large student and professional population, traffic-related time costs and expanding hyperlocal retail infrastructure can produce meaningful variation in convenience, risk and value perceptions. The paper contributes by separating promised delivery speed from delivery reliability, treating transparent pricing and product integrity as trust mechanisms, and connecting initial adoption to post-purchase continuance. It concludes with testable propositions and a survey-based validation plan using stratified sampling and structural equation modelling. The framework offers researchers a defensible basis for a Pune-specific empirical study and helps urban platforms balance speed with reliability, fairness, consumer protection and long-term loyalty in practice.

Keywords: quick commerce; consumer adoption; perceived value; trust; Pune City

1. INTRODUCTION

Quick commerce (Q-commerce) is a hyperlocal form of electronic retail in which digitally placed orders are picked from neighbourhood fulfilment facilities and delivered within a short time window, frequently measured in minutes rather than days. The model combines a mobile interface, real-time inventory visibility, dark-store operations, algorithmic demand forecasting and last-mile delivery. This configuration changes the consumer value proposition: assortment remains important, but time saved, dependable fulfilment and transaction simplicity become central parts of the product being purchased. India has become a prominent setting for Q-commerce because dense urban markets, widespread smartphone usage and intense platform competition allow hyperlocal delivery networks to scale. Blinkit, Zepto and Swiggy Instamart have normalised rapid delivery of groceries, personal-care products and everyday essentials. Recent research accordingly treats Q-commerce as a distinct consumer context rather than merely faster e-commerce. Kapoor et al. show that app design, security assurance and fulfilment jointly shape the service experience and loyalty. Panesar et al. demonstrate that technological, service, marketing and social stimuli influence perceived value and trust, which then drive usage intention. Virani et al. connect E-S-QUAL dimensions and gratification to perceived value, satisfaction and

continued purchase. The managerial temptation is to reduce Q-commerce to delivery speed. However, a ten-minute promise can create value only when the order is complete, products are fresh, prices are transparent, payment is secure and remedies are available after failure. Consumer responses also extend beyond the first order. Platforms require repeat purchase, recommendation and loyalty to offset acquisition and fulfilment costs. Research therefore needs to explain a connected sequence from platform attributes to consumer evaluations and from initial adoption to continuance. Pune City offers a useful analytical setting for this purpose. It combines established residential neighbourhoods, rapidly expanding suburbs, university clusters, information-technology corridors, industrial zones and heterogeneous household structures. These conditions are likely to produce variation in time pressure, digital-shopping experience, basket purpose, price sensitivity and service availability. Pune is also directly relevant to consumer protection: local scrutiny of dark-store licensing and hygiene has made product integrity and transparent fulfilment salient alongside convenience.

This paper addresses three questions:

- (1) Which platform and market attributes are most likely to shape Q-commerce adoption in Pune?
- (2) Through which consumer evaluations do these attributes influence adoption and continuance?
- (3) Which individual and household conditions may strengthen or weaken these relationships?

The objective is not to report a Pune survey that has not been conducted. Instead, the paper develops a transparent conceptual framework and a feasible plan for subsequent empirical validation.

2. CONCEPTUAL BACKGROUND

2.1 Q-commerce as a distinct retail configuration

Traditional e-commerce generally optimises breadth, price comparison and scheduled delivery across a relatively large geography. Q-commerce compresses both space and time through smaller service radii, local inventory and rapid dispatch. The resulting consumer journey is also compressed: need recognition, search, evaluation, checkout and delivery may occur within a single short episode. This compression increases the value of immediacy but also raises expectations. A delayed order, unavailable item or undisclosed fee becomes especially damaging when the platform's core promise is certainty within minutes.

Table 1. Consumer-facing differences between conventional e-commerce and Q-commerce

Dimension	Conventional e-commerce	Quick commerce
Primary value promise	Assortment, comparison and home delivery	Immediacy, convenience and time saved
Typical fulfilment	Regional warehouse; scheduled or multi-day delivery	Dark store or local partner; delivery within minutes
Purchase occasion	Planned, considered and larger basket	Urgent, top-up, impulse or immediate-consumption basket
Critical failure	Delay or product mismatch	Broken time promise, stock substitution, hidden fee or quality lapse
Retention basis	Price, assortment and accumulated trust	Reliable speed, fulfilment accuracy, value and recovery

2.2 Technology acceptance, value and trust

The Technology Acceptance Model (TAM) proposes that perceived usefulness and perceived ease of use shape attitudes and behavioural intention toward a system. In Q-commerce, usefulness refers to the platform's ability to reduce shopping time, solve urgent needs and simplify access to everyday products. Ease of use concerns search, navigation, checkout, payment and order tracking. UTAUT adds performance expectancy, effort expectancy, social influence and facilitating conditions, and recognises that demographic and experience variables may moderate technology adoption.

TAM alone is insufficient because the consumer must evaluate both technology and retailer performance. Perceived value captures the trade-off between received benefits and monetary and non-monetary sacrifices. In Q-commerce, benefits include time saved, availability and convenience; sacrifices include product price, delivery fee, handling charge, minimum basket requirement, privacy exposure and the risk of poor fulfilment. Trust becomes necessary because consumers cannot directly inspect a dark store, verify inventory or observe how products are handled before purchase. Trust and perceived risk have repeatedly been integrated with technology-acceptance explanations of online shopping, while meta-analytic evidence confirms the importance of trust, risk, security and electronic word of mouth in digital purchasing.

2.3 E-service quality, satisfaction and continuance

E-S-QUAL identifies efficiency, system availability, fulfilment and privacy as core dimensions of electronic service quality. All four are directly relevant to Q-commerce, but fulfilment has an expanded meaning: the platform must deliver the correct products, in usable condition, within the communicated window. Satisfaction then reflects the consumer's evaluation of whether performance confirms prior expectations. Continuance is distinct from initial adoption because a first order may be promotion-driven, whereas repeat purchase requires satisfactory experience and sustained value.

3. REVIEW METHOD

A structured integrative review was used to combine mature electronic-commerce theory with the emerging Q-commerce evidence base. Literature discovery prioritised peer-reviewed publisher records and bibliographic sources using combinations of the terms quick commerce, Q-commerce, online grocery, adoption, continuance, service quality, trust, perceived value, delivery, India and consumer behaviour. The temporal emphasis was 2019 to August 2026 for grocery and Q-commerce research, while foundational theory articles were retained irrespective of year.

Sources were included when they

- (a) defined Q-commerce or online-grocery adoption,
- (b) tested or developed consumer-behaviour constructs relevant to digital retail,
- (c) examined Indian consumers or a comparable emerging-market setting, or
- (d) provided a recognised theoretical or measurement foundation.

Purely operational studies were used only where last-mile design clarified a consumer-facing attribute. Promotional market claims without a transparent source were excluded from the conceptual propositions. The resulting evidence was coded into four themes: technology acceptance, service and fulfilment quality, value/trust/risk, and post-purchase continuance. This is an integrative conceptual review, not a registered systematic review or a meta-analysis.

Table 2. Selected evidence informing the framework

Study	Context and method	Framework implication
Driediger & Bhatiasevi	Online grocery; consumer adoption model	Usefulness and ease of use remain relevant in grocery purchasing.
Van Droogenbroeck & Van Hove	E-grocery; context-specific UTAUT2	Habit, performance and facilitating conditions require contextualisation.
Kapoor et al.	Q-commerce; SEM and fsQCA	App design, security and fulfilment form the service experience.
Gupta & Kumar	Indian online grocery; repurchase	Risk, trust and prior satisfaction explain repeat purchase.
Tripathi et al.	Indian e-shoppers; marketing logistics	Logistics performance is a consumer-behaviour variable, not only an operational output.
Panesar et al.	Q-commerce; 795 users; PLS-SEM	Technological, service, marketing and social stimuli act through value and trust.
Virani et al.	Q-commerce; 413 users; UGT and E-S-QUAL	Service quality and gratification influence value, satisfaction and continuance.
Agrawal & Narayanan	Indian Q-commerce experiment; Pune authors	Dark patterns increase betrayal, punitive intent and negative word of mouth.

4. Thematic Synthesis

4.1 Functional convenience is necessary but multidimensional

Perceived usefulness in Q-commerce arises from more than the availability of an app. The service must shorten the total effort of acquiring groceries: locating products, evaluating alternatives, paying, tracking and receiving. Ease of use can reinforce usefulness because frictionless search and checkout allow consumers to realise the time-saving promise. Personalised recommendations may further reduce effort, but intrusive or inaccurate personalisation can create privacy concerns. Functional convenience should therefore be treated as a benefit whose effect depends on system reliability and consumer control.

4.2 Delivery speed must be separated from delivery reliability

Speed is the headline promise of Q-commerce, whereas reliability is the probability that the communicated promise is met accurately. Consumers may prefer a dependable twenty-minute delivery to an uncertain ten-minute claim. Reliability also includes real-time inventory accuracy, appropriate substitutions, correct quantity and condition, and predictable service recovery. Logistics research and recent Q-commerce evidence support treating fulfilment as an experiential driver of value and trust. This distinction is theoretically useful because promotional speed can attract initial trial, but reliability is more likely to sustain satisfaction and repurchase.

4.3 Price fairness and transparency shape value and trust

Q-commerce pricing may combine item price, delivery charge, handling fee, surge fee, small-cart charge and promotional discount. Consumers evaluate not only the final amount but also whether charges are disclosed early and applied consistently. A low headline price followed by unexpected checkout additions reduces perceived

value and can signal opportunism. False scarcity, basket sneaking and confirm-shaming similarly convert interface design into a trust and consumer-protection issue. Experimental evidence from India shows that such patterns can increase perceived betrayal, punitive intent and negative word of mouth even when immediate brand-trust measures appear stable.

4.4 Product integrity and security reduce perceived risk

Grocery shopping contains quality attributes that are difficult to verify digitally, including freshness, expiry date, packaging integrity, temperature control and storage hygiene. Consumers therefore infer quality from brand reputation, product information, delivery condition and recovery policies. Payment security and privacy protection address a different but related risk: the possibility that personal or financial information will be misused. Together, product integrity, transparent fulfilment, privacy and security create the assurance required for continued use.

4.5 Social information affects trial and recommendation

Ratings, reviews, referrals, influencer communication and peer usage can reduce uncertainty and legitimise a new consumption routine. Electronic word of mouth is especially influential when product quality or service reliability cannot be directly observed before ordering. However, social proof can be distorted by fake urgency or undisclosed sponsorship. The framework therefore treats electronic word of mouth as an antecedent of trust and, through trust, adoption while preserving negative word of mouth as a post-failure response.

5. PROPOSED CONCEPTUAL FRAMEWORK AND PROPOSITIONS

Figure 1. Integrated framework for Q-commerce adoption and continuance in Pune

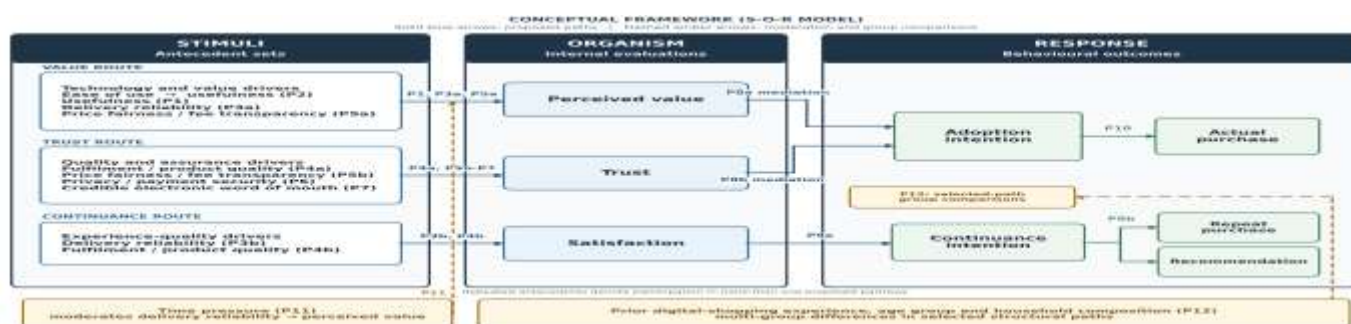


Figure 1 makes the proposed causal sequence explicit. Technology attributes, service performance, and market and social assurance operate as stimuli. Perceived value, trust and satisfaction are the internal evaluations through which these stimuli affect adoption and post-purchase outcomes. Solid arrows indicate the direct paths in P1-P10. The dashed P11 path shows that time pressure moderates the effect of delivery speed reliability on perceived value, while the dashed P12 path indicates group differences across prior digital-shopping experience, age and household composition.

5.1 Technology acceptance and functional value

When a platform helps consumer's complete grocery shopping more quickly and effectively, its functional value increases. An interface that is easy to learn and operate reduces cognitive and transaction effort; it can also strengthen perceived usefulness by making benefits more accessible. Accordingly:

P1: Perceived usefulness positively influences perceived value.

P2: Perceived ease of use positively influences perceived usefulness.

5.2 Fulfilment quality, reliability and trust

A platform's delivery promise becomes credible through repeated confirmation. Timely arrival, order completeness, accurate substitutions and product integrity should increase value, trust and satisfaction. Because food quality may not be verifiable before purchase, fulfilment performance also functions as an assurance signal.

P3: Delivery speed reliability positively influences (a) perceived value and (b) satisfaction.

P4: Fulfilment and product quality positively influence (a) trust and (b) satisfaction.

5.3 Fairness, security and social assurance

Transparent charges enable consumers to assess the total sacrifice associated with an order and reduce the perception of opportunism. Privacy and payment safeguards reduce technology-related risk. Credible reviews and recommendations provide vicarious evidence where consumers cannot directly inspect service operations.

P5: Perceived price fairness and fee transparency positively influence (a) perceived value and (b) trust.

P6: Perceived privacy and payment security positively influence trust.

P7: Credible electronic word of mouth positively influences trust.

5.4 Mediating evaluations and post-purchase response

Perceived value and trust explain distinct routes through which observable platform features become adoption intention. Perceived value carries the effects of functional utility, dependable delivery and price fairness, whereas trust carries the effects of fulfilment quality, price fairness, security and credible social information. Satisfaction is evaluated after use and leads to continuance intention, which in turn supports repeat purchase and recommendation. Adoption intention remains the proximal response linking internal evaluations to actual purchase.

P8: The mediation pathways are specific: (a) perceived value mediates the effects of perceived usefulness, delivery speed reliability, and price fairness and fee transparency on adoption intention; and (b) trust mediates the effects of fulfilment and product quality, price fairness and fee transparency, privacy and payment security, and credible electronic word of mouth on adoption intention.

P9: (a) Satisfaction positively influences continuance intention; and (b) continuance intention positively influences repeat purchase and recommendation.

P10: Adoption intention positively influences actual Q-commerce purchase behaviour.

5.5 Boundary conditions

The same delivery offer may have different value across consumers and occasions. Time pressure should amplify the benefit of rapid fulfilment. Prior digital-shopping experience may reduce effort and perceived risk. Age can capture differences in digital familiarity but should not be used as a stereotype; measurement invariance is required before comparing age groups. Household composition may change basket urgency, order frequency and sensitivity to product availability.

P11: Time pressure strengthens the positive relationship between delivery speed reliability and perceived value.

P12: The structural relationships in the framework vary across prior digital-shopping experience, age group and household composition.

Table 3. Construct definitions and indicative measures

Construct	Operational meaning in Q-commerce	Indicative measure
Perceived usefulness	Degree to which the platform improves grocery-shopping performance	Saves time; solves urgent needs; improves shopping efficiency
Ease of use	Effort required to search, order, pay and track	Navigation is clear; checkout is easy; tracking is understandable
Delivery speed reliability	Consistency between communicated and actual delivery	Arrives within promised window; delivery estimate is dependable
Fulfilment/product quality	Accuracy, completeness, freshness and condition	Correct items; acceptable freshness; safe packaging; suitable substitutions
Price fairness	Fairness and transparency of total monetary sacrifice	Fees disclosed; charges reasonable; promotions applied honestly
Trust	Confidence in platform competence, integrity and benevolence	Keeps promises; acts honestly; resolves failures fairly
Satisfaction	Overall evaluation after comparing expectations and performance	Experience meets expectations; decision to use was satisfactory
Continuance	Intention and behaviour after initial adoption	Will reorder; intends regular use; would recommend

6. DISCUSSION

6.1 Theoretical contribution

The proposed framework contributes in four ways. First, it integrates TAM with E-S-QUAL, perceived value, trust and expectation-confirmation rather than treating adoption as a purely technological decision. Second, it separates delivery speed from delivery reliability. This avoids assuming that a more aggressive promise automatically creates greater value. Third, it identifies price transparency and product integrity as mechanisms of trust, which is especially important for grocery categories and dark-store operations. Fourth, it connects initial adoption to satisfaction, continuance and recommendation, thereby distinguishing trial from sustainable customer relationships.

The framework also clarifies the S-O-R logic implicit in Q-commerce. Platform and market attributes function as stimuli; perceived value, trust and satisfaction are internal evaluations; adoption, purchase, continuance and recommendation are responses [3], [13]. The integration is useful because it preserves the diagnostic precision of TAM and E-S-QUAL while explaining how multiple stimuli converge into consumer judgments.

6.2 Managerial implications for Pune

For platform managers, the principal implication is to manage reliability before advertising extreme speed. A neighbourhood-level dashboard should monitor promised versus actual delivery, item fill rate, substitution acceptance, refund cycle time, freshness complaints and repeat purchase. These metrics jointly indicate whether operational performance creates consumer value. Service recovery should be visible and low-friction: automatic refund options, proactive delay communication and meaningful alternatives can protect trust after failure.

Pricing interfaces should display the complete payable amount before the final confirmation stage and distinguish product discounts from delivery, handling and small-cart charges. Promotions should not rely on

false scarcity or preselected additions. For Pune's heterogeneous neighbourhoods, segmentation should be occasion-based as well as demographic: urgent top-up, forgotten ingredient, planned weekly basket, student convenience, professional time pressure and household emergency may require different assortment, message and service design.

Product integrity requires operational coordination with marketing. Freshness information, expiry visibility, cold-chain handling, tamper-evident packaging and dark-store compliance are not back-office matters; they are consumer trust signals. Platforms should make these signals observable through product information, traceability and transparent complaint resolution.

6.3 Policy and consumer-protection implications

Regulators should evaluate Q-commerce claims at the intersection of advertising, interface design, food safety, data protection and gig-enabled fulfilment. India's Guidelines for Prevention and Regulation of Dark Patterns identify deceptive interface practices that can impair consumer autonomy [20].

Local enforcement around dark-store hygiene further demonstrates that digital convenience does not displace physical retail obligations [19]. A balanced policy approach should require accurate delivery representations, transparent all-in pricing, accessible refunds, verifiable storage standards and proportionate data collection without prescribing a single business model.

7. Proposed Empirical Validation in Pune City

A subsequent empirical study can test the framework using a cross-sectional survey of adult Pune City residents who have completed at least three Q-commerce grocery orders during the preceding three months, including at least two orders on the same reference platform, with the most recent order completed within the preceding 30 days.

The unit of analysis should be the individual consumer, and the reference platform should be the platform used at least twice and most recently. This threshold excludes one-off promotional trial from the continuance analysis while retaining a recent, concrete service episode for evaluation.

Table 4. Recommended empirical design

Design element	Recommendation
Population	Adults aged 18 years or older residing in Pune City; at least three Q-commerce grocery orders in the previous three months, at least two on the same reference platform, and most recent order within 30 days
Sampling	Stratify by broad PMC geography and use quotas for age and gender; recruit both student and non-student consumers
Target sample	Approximately 400-500 valid responses, subject to power analysis for the final model
Instrument	Five-point or seven-point Likert scale; validated multi-item measures; recent-platform anchor; pilot of 30-50 users
Analysis	Descriptive profile; reliability; CFA/measurement model; structural equation modelling; mediation and moderation
Quality checks	Missing data, non-response bias, discriminant validity, multi-collinearity and predictive relevance

Group comparison	Test measurement invariance before comparing gender, age, experience or household groups
Common method bias controls	Procedural: anonymous responses, neutral wording, concealed construct labels, separated predictor and outcome blocks, and randomised item order. Statistical: Harman single-factor screening followed by a CFA marker-variable or common-latent-factor comparison and path-sensitivity checks

PLS-SEM is suitable when prediction, model extension and formative service constructs are central; covariance-based SEM is suitable when theory confirmation and global model fit are the priority. The choice should follow construct specification and research purpose rather than software convenience. Indirect effects should be estimated by bootstrapping. Moderation by time pressure and digital experience can be tested using interaction terms, while multi-group analysis should follow measurement-invariance assessment. Actual purchase frequency or transaction evidence, where ethically and practically available, would strengthen the link between intention and behaviour.

Common method bias will be controlled at both the instrument-design and analysis stages. The questionnaire will not display construct names or the hypothesised relationships; predictor and outcome items will be placed in separate sections with neutral transitions; item order will be randomised within blocks; wording will be concise and non-leading; and respondents will be assured of anonymity, confidentiality and the absence of right or wrong answers. A theoretically unrelated marker construct will be included. Harman's single-factor test will serve only as a preliminary diagnostic. The main assessment will compare the trait-only measurement model with a CFA marker-variable or common-latent-factor model and examine whether the substantive path estimates change materially. These controls follow the procedural and statistical guidance of Podsakoff et al. (2003) and Richardson et al. (2009).

8. LIMITATIONS AND FUTURE RESEARCH

The framework is conceptual and does not provide effect sizes or Pune-specific prevalence estimates. Cross-sectional self-report data limit causal inference and may inflate relationships because predictors and outcomes come from the same respondent. The procedural and CFA-based controls proposed in Section 7 reduce this risk but cannot eliminate residual common method bias. Future studies should combine survey data with delivery records, experiments or longitudinal observation. Platform-specific effects should also be examined because assortment, pricing and recovery policies differ. Researchers could extend the model to impulse buying, health outcomes, packaging waste, traffic externalities, gig-worker welfare and neighbourhood retail impact, while avoiding the assumption that consumer convenience automatically implies social sustainability.

Pune should not be treated as internally homogeneous. The service experience may differ across the old city, established western neighbourhoods, eastern IT corridors, peripheral growth areas and student clusters. Spatial availability and local fulfilment density can therefore be integrated through multilevel or geospatial analysis. Qualitative interviews would help identify context-specific meanings of urgency, fairness and acceptable delay before finalising quantitative scales.

9. CONCLUSION

Q-commerce converts time into a central retail benefit, but its long-term acceptance depends on more than speed. Consumers judge whether the platform is useful, effortless, reliable, fair, secure and capable of delivering products in acceptable condition. These attributes create perceived value, trust and satisfaction, which connect initial adoption to repurchase and recommendation. The proposed Pune-focused framework organises these relationships into testable propositions and provides a defensible path for empirical validation. Its central managerial message is straightforward: sustainable consumer adoption is built when rapid delivery is supported by reliable fulfilment, transparent pricing, product integrity and respectful digital design.

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