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FROM SPEED TO SUSTAINABILITY: EMERGING PROBLEMS AND CHALLENGES OF QUICK COMMERCE IN INDIA

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Introduction

The COVID-19 pandemic accelerated the adoption of digital services and changed the way consumers purchased everyday goods. Lohariwala (2022). Restrictions on movement encouraged households to use online platforms for groceries, food and other essential products. As consumers became more familiar with digital ordering, expectations also changed: convenience remained important, but many customers began to value faster delivery and immediate access to frequently used products.

Quick commerce (Q-commerce) emerged in this environment as a retail model that seeks to deliver groceries, personal-care products and household essentials within a short period, commonly advertised as 10–30 minutes. Unlike conventional e-commerce, which often relies on centralised fulfilment centres and longer delivery windows, Q-commerce generally uses a network of neighbourhood-level dark stores. Platforms such as Blinkit, Zepto and Swiggy Instamart combine local inventory, digital ordering, demand forecasting and delivery allocation to fulfil orders rapidly.

The Indian market has expanded rapidly. Redseer Strategy Consultants estimates that the market grew from approximately USD 0.4 billion in FY2022 to around USD 13 billion in FY2026, with a potential to reach USD 70–90 billion by FY2031. The latter figure is a projection rather than an observed market outcome (Redseer Strategy Consultants, 2026). Tamil Nadu provides a useful regional context for examining this expansion. The manuscript's cited state-level figures indicate a concentration of dark stores in Chennai, alongside emerging activity in Coimbatore, Madurai and Tiruchirappalli. These city-level figures should be retained only after their original source and reporting date have been verified.

The expansion of Q-commerce also creates operational and sustainability pressures. Maintaining rapid fulfilment requires investment in dark stores, inventory, technology, packaging and delivery networks. Platforms must manage fulfilment costs, discounting, competition and inventory availability. At the same time, concerns have arisen about delivery-worker safety, income security, packaging waste and transport-related emissions. The central question is therefore not simply how quickly Q-commerce can grow, but whether the model can remain economically viable while meeting social and environmental responsibilities.

Statement of the Problem

Quick commerce has introduced a new form of retail convenience, but the long-term sustainability of this model remains uncertain. Its operating structure requires platforms to maintain local inventory, strategically located dark stores, technology infrastructure and sufficient delivery capacity to meet short delivery windows.

From an economic perspective, platforms must balance revenue growth with fulfilment expenditure, customer incentives, labour-related costs, inventory management and investment in dark stores. Growth in gross order value or customer numbers does not, by itself, demonstrate that a platform has achieved operating profitability.

IJBARR
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From a social perspective, delivery partners perform a central role in the Q-commerce model. Their working conditions raise questions about payment transparency, working hours, occupational safety, accident protection, social security and algorithmic management. From an environmental perspective, frequent deliveries, packaging materials, dark-store electricity consumption and vehicle emissions may increase the sector's ecological footprint.

Consumer behaviour adds another dimension. Customers may value speed for urgent or small purchases while continuing to rely on neighbourhood grocery stores for planned shopping, product inspection, personal interaction and informal credit. These preferences may also differ between metropolitan and Tier-2 markets. The study therefore examines Q-commerce through an integrated sustainability perspective rather than treating market expansion as the sole measure of success.

Objectives of the Study

1. To examine the growth and development of the quick-commerce market in India.
2. To analyse consumer adoption, purchase behaviour and the continuing role of traditional retailers.
3. To assess the financial and operational performance of selected quick-commerce platforms using published disclosures.
4. To examine social sustainability concerns relating to gig and delivery workers.
5. To identify environmental and infrastructure challenges associated with quick-commerce operations.
6. To assess the sustainability of the sector through the Triple Bottom Line framework.

Review of Literature

Market Growth and Industry Development

Q-commerce represents an extension of digital retail in which delivery speed and proximity are central elements of the service proposition. Anisa and Purwanegara (2025) discuss the development of quick commerce in Indonesia and the industry conditions affecting its growth. Setiyono et al. (2023) examine factors associated with e-loyalty in the Q-commerce context. Kapoor et al. (2023) investigate quick-commerce service experience using SEM and fsQCA, contributing to understanding how service-related factors shape customer responses.

The operating model depends on the integration of digital platforms, local fulfilment facilities and delivery personnel. Potdukhe et al. (2022) identify technology, dark stores and delivery workers as important components of instant-delivery operations. Raj et al. (2024), as cited in the source manuscript, describe the order-processing sequence from customer notification to picking, dispatch and last-mile delivery. These studies indicate that speed is not produced by delivery workers alone; it depends on coordination across the entire fulfilment system.

Consumer Adoption

Chaudhari and Panchal (2024) identified that convenience, fast delivery, competitive pricing and a wide rang of product choices are the key factor that influencing the customer’s purchase decision and statisfaction with Q Commerce. Chavadi et al. (2024) examine instant gratification and customer satisfaction among Indian Q-commerce users. Their findings, as reported in the source manuscript, associate instant gratification with customer engagement, customer experience and satisfaction, while satisfaction is linked with repurchase intention and word-of-mouth. Lohariwala (2022) highlighted that the COVID-19 pandemic accelerated the adoption of quick commerce platforms, as health concerns, lockdown restrictions, and the preference for minimal physical contact encouraged consumers to shift towards faster and more convenient online shopping options.

Balasundaram et al. (2025) develop a Digital Immediacy Adoption Framework using survey data from 487 consumers in metropolitan Indian cities. The study considers temporal value perceptions, algorithmic shopping dependence and digital authenticity perceptions as factors relevant to adoption. Sivakami and Anisha (2025) compare consumer behaviour in metropolitan and Tier-2 cities and identify speed, convenience, price and trust as relevant considerations. Their reported findings suggest that metropolitan consumers place greater emphasis on speed and digital convenience, while Tier-2 consumers are more sensitive to price, payment trust and service reliability.

Pattanshetty (2026) reports results from a cross-sectional survey of 500 respondents, including consumers and retail or operational partners. The study reports that delivery speed is associated with consumer expectations and that satisfaction is associated with loyalty. The reported percentages relating to impulse purchases and shifts in grocery spending should be interpreted as findings from that study's sample, not as estimates for all Indian consumers.

Consumer Preferences and Traditional Retail

Pandey and Pandey (2026) compare consumer preferences for Q-commerce applications and traditional kirana stores using a survey of 50 urban respondents. The study reports that younger respondents were more attracted to Q-commerce because of speed, convenience and promotional offers. Older respondents placed greater value on personal interaction, trust, product verification and informal credit. Given the small sample, these findings are indicative and should not be generalised to the entire retail market.

The results concluded that while traditional retail has better satisfaction among consumers for most of the key variables investigated, some variables were rated higher for qcommerce, while one, namely, convenience, was rated equal between both. Traditional retail is perceived to offer significantly higher product quality, better pricing, and easier return processes across all income groups. Goel and Anaya (2025) observed that traditional retail outlets are perceived to provide better product quality, more competitive pricing, and easier return facilities compared to online shopping platforms across different income groups.

Financial Performance

Company disclosures provide evidence of the relationship between platform expansion and operating performance. Eternal Limited's FY2024–25 annual report records substantial growth in Blinkit's gross order value, revenue, order volume and monthly transacting customers. It also reports a negative adjusted EBITDA, although the loss narrowed compared with the previous year.

Swiggy Limited's Q2 FY2025–26 disclosure reports strong year-on-year growth in Instamart's gross order value, users and dark-store network. The same disclosure records an adjusted EBITDA loss of ₹849 crore for the quarter. These company disclosures are useful for analysing operating trends, but the companies' metrics and reporting definitions should be considered before making direct comparisons.

Social Sustainability and Gig-Worker Welfare

Chaudhary et al. (2025) compare earnings among platform and non-platform workers in India using survey evidence from 400 delivery and taxi-service workers in Delhi. The study reports an average daily earnings premium for platform workers, while also identifying longer working hours, income volatility and limited access to employment-related benefits.

Goswami et al. (2026), as cited in the source manuscript, examine labour rights, precarity and algorithmic control in India's Q-commerce sector. Their reported findings raise concerns about compensation disparities, social-security gaps, financial instability and working hours. Together, these

IJBARR
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studies suggest that the number of platform jobs created is not sufficient to establish social sustainability; the quality and security of work must also be considered.

Environmental Sustainability

Balabantaray (2026) examines the environmental implications of instant-delivery platforms using secondary data, corporate disclosures and comparative analysis. The study estimates delivery-related emissions and identifies dark-store energy consumption and packaging waste as important concerns. The emissions figure reported in the source manuscript is a research estimate and should not be presented as an official national inventory.

Daniel, Zaib and Gund (2026) use simulation-based modelling to compare greenhouse-gas emissions from Q-commerce and conventional e-commerce logistics. Their model indicates that last-mile logistics accounts for a substantial share of emissions in both systems, with a higher modelled per-item impact for Q-commerce. These results are model-dependent and should not be treated as measured emissions for every platform.

Barriers to Sustainable Transformation

Nagwal et al. (2026) examine barriers to sustainable transformation in Indian Q-commerce through a multi-criteria decision-making approach. The study identifies infrastructure constraints, limitations in AI-based demand forecasting, packaging waste and product-authenticity concerns, alongside other operational and regulatory challenges. The findings reinforce the need to consider technology, infrastructure, labour and environmental issues together.

Research Gap

Existing research examines several dimensions of quick commerce, including consumer adoption, service experience, traditional retail competition, financial performance, worker welfare and environmental impacts. However, these dimensions are often considered separately. Consumer studies tend to focus on adoption and satisfaction, company disclosures emphasise business growth and operating performance, while labour and environmental studies examine distinct social and ecological outcomes. There remains a need for an integrated assessment that considers whether the expansion of Q-commerce is accompanied by financially viable operations, acceptable working conditions and responsible environmental practices. The present study addresses this need by organising published Indian evidence under the economic, social and environmental dimensions of the Triple Bottom Line framework. It distinguishes between company-reported performance, findings from specific research samples, secondary estimates and future projections.

Theoretical Framework

Triple Bottom Line Framework

The study adopts the Triple Bottom Line (TBL) framework, which evaluates organisational sustainability through three interconnected dimensions: profit, people and planet.

Economic sustainability (Profit): This dimension considers gross order value, revenue, contribution, adjusted EBITDA, fulfilment costs, order volumes and operational efficiency. A platform's growth is economically sustainable only when its operating model can support ongoing costs and investment over time.

Social sustainability (People): This dimension considers delivery-worker compensation, working hours, occupational safety, social-security access, consumer welfare and the effects of digital retail on traditional retailers.

IJBARR
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Environmental sustainability (Planet): This dimension considers delivery-related emissions, packaging waste, dark-store electricity consumption, inventory wastage and resource efficiency.

The TBL framework is relevant because the convenience and commercial value created by Q-commerce may be accompanied by costs borne by workers, local communities and the environment. Evaluating all three dimensions provides a broader basis for assessing the sector's long-term sustainability.

Research Methodology

Research Design

The study adopts a descriptive and analytical research design based on secondary data. It brings together published academic studies, company disclosures and industry reports to examine the economic, social and environmental sustainability of quick commerce in India.

Sources and Analysis

The evidence considered in the manuscript includes peer-reviewed journal articles, working papers, company annual reports and shareholder disclosures, and industry reports. The analysis is organised thematically under market growth, consumer behaviour, financial performance, traditional retail, worker welfare, environmental impacts and operational barriers. Company performance indicators are compared across the periods reported by the respective companies. Research findings based on surveys, estimates or simulation models are interpreted within the limits of their samples and methods.

Scope and Limitations

The study relies on published secondary evidence and does not independently survey consumers, delivery workers or retailers. The studies reviewed use different samples, locations, time periods and research methods; their results are therefore not directly comparable. Company disclosures also use segment-specific definitions and reporting periods. Environmental figures may be estimates or model outputs rather than directly measured sector-wide emissions. These limitations are considered when interpreting the findings.

Empirical Analysis and Discussion

8.1 Growth of the Indian Quick-Commerce Market

Redseer Strategy Consultants estimates that India's Q-commerce market expanded from approximately USD 0.4 billion in FY2022 to around USD 13 billion in FY2026. Its report projects a market size of USD 70–90 billion by FY2031. The FY2031 value is a forecast and should not be described as actual market performance (Redseer Strategy Consultants, 2026).

Period	Estimated Market Size	Status
FY2022	USD 0.4 billion	Estimate
FY2026	USD 13 billion	Estimate
FY2031	USD 70–90 billion	Projection

The estimates point to rapid expansion over the period. Redseer also identifies a sizeable non-metropolitan opportunity: its report refers to approximately 180–200 million addressable shoppers in serviced non-metro cities, compared with around 12–16 million monthly transacting users at the time of the report. This gap indicates potential for further adoption, but it does not mean that all addressable shoppers will become regular users. Trust, freshness, basket size, price and service reliability may affect conversion.

Discussion: Market expansion indicates growing consumer acceptance, but it is not sufficient evidence of sustainable performance. Platforms must establish whether order growth and larger baskets can generate adequate contribution to cover fulfilment and infrastructure costs.

Consumer Adoption: Speed, Convenience and Trust

Consumer adoption is an important driver of Q-commerce. Its value proposition is based on reducing the time and effort required to obtain frequently used products. The studies reviewed suggest that consumers value speed, but also consider trust, price, freshness and service reliability.

Balasundaram et al. (2025), using a sample of 487 metropolitan consumers, examine temporal value perceptions, algorithmic shopping dependence and digital authenticity. Pattanshetty (2026) reports that delivery speed was strongly associated with consumer expectations in the study sample and that customer satisfaction was associated with loyalty. Sivakami and Anisha (2025) identify differences between metropolitan and Tier-2 consumers, particularly in relation to speed, price and payment trust.

Study	Sample / Method	Reported Evidence
Balasundaram et al. (2025)	487 metropolitan consumers; SEM	Temporal value, algorithmic dependence and digital authenticity are examined as adoption factors.
Pattanshetty (2026)	500 respondents, including consumers and retail/operational partners	Delivery speed is associated with expectations; satisfaction is associated with loyalty.
Sivakami and Anisha (2025)	Comparative study of metropolitan and Tier-2 consumers	Metro consumers emphasise speed and digital trust; Tier-2 consumers show greater price and value sensitivity.
Redseer (2026)	1,200+ respondents and industry interactions	Freshness, trust and basket size remain relevant adoption barriers.

Discussion: Speed may attract customers to a platform, but continued use also depends on trust, product quality, price value and reliable fulfilment. Platforms therefore need to compete on the overall service experience rather than delivery time alone.

Consumer Behaviour and Impulse Purchasing

Easy access to products, promotional notifications and convenient digital payments may influence the frequency and timing of consumer purchases. Pattanshetty (2026) reports increased impulse purchasing among a proportion of respondents and a shift in some grocery spending from traditional retail to Q-commerce. These findings describe the study sample and should not be interpreted as population-wide estimates.

Srinivas (2026) examines impulse buying and loyalty-program engagement among 128 consumers in Bengaluru. Desai et al. (2026) investigate micro-moments and digital interface features among urban users, reporting that purchasing decisions may occur within short periods and that promotional thresholds and payment convenience can influence buying behaviour.

Discussion: These findings raise questions about responsible consumption. Promotions and easy ordering may increase sales, but they may also encourage unplanned purchases and more frequent delivery trips. Platforms should balance promotional activity with transparent information and responsible digital marketing.

IJBARR
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Financial Performance of Blinkit

Eternal Limited's FY2024–25 annual report provides segment-level evidence of Blinkit's financial and operating performance. The figures below are reported in ₹ crore unless otherwise stated.

Particulars	FY2023–24	FY2024–25
Gross Order Value (GOV)	12,469	28,273
Net Order Value (NOV)	10,503	22,371
Revenue	2,301	5,206
Contribution	266	953
Adjusted EBITDA	-384	-292
Orders (million)	203	424
Average monthly transacting customers (million)	5.1	10.2

Blinkit's GOV increased from ₹12,469 crore to ₹28,273 crore, while revenue rose from ₹2,301 crore to ₹5,206 crore. Orders increased from 203 million to 424 million, and average monthly transacting customers doubled from 5.1 million to 10.2 million. Adjusted EBITDA improved from a loss of ₹384 crore to a loss of ₹292 crore. The segment therefore reduced its adjusted operating loss while expanding, but it had not yet reported positive adjusted EBITDA.

Discussion: The figures show that scale and improving operating economics can occur together, but growth does not automatically establish profitability. Fulfilment costs, inventory management, delivery efficiency and promotional expenditure remain important determinants of financial sustainability.

Financial and Operational Performance of Swiggy Instamart

Swiggy Instamart's Q2 FY2025–26 disclosure reports the following year-on-year changes. The values are taken from the company's Q2 FY2025–26 shareholder communication.

Particulars	Q2 FY2024–25	Q2 FY2025–26
Gross Order Value (₹ crore)	3,382	7,022
Orders (million)	67.8	100.8
Monthly transacting users (million)	6.2	12.0
Dark stores	609	1,102
Adjusted EBITDA (₹ crore)	-359	-849
Adjusted EBITDA margin (% of GOV)	-10.6%	-12.1%

The figures indicate that GOV more than doubled, while monthly transacting users increased from 6.2 million to 12 million and the dark-store network expanded from 609 to 1,102. However, the adjusted EBITDA loss increased from ₹359 crore to ₹849 crore. The adjusted EBITDA margin also moved from -10.6% to -12.1% of GOV.

Discussion: Instamart's figures illustrate the cost of scaling a rapid-delivery network. The expansion of stores, users and order value occurred alongside a larger adjusted EBITDA loss. Blinkit and Instamart should not be ranked directly using these figures because their reporting periods, segment definitions and disclosures may differ.

8.6 Traditional Retail and Kirana Stores: Quick commerce has changed the competitive environment for neighbourhood grocery stores. Kirana stores continue to offer proximity, personal relationships, product familiarity, flexible quantities and, in some cases, informal credit.

Pandey and Pandey (2026) report that younger respondents in their 50-person urban sample were more inclined towards Q-commerce because of speed, convenience and promotional offers. Older respondents placed greater value on personal interaction, trust, product verification and informal credit. Pattanshetty (2026) reports that some respondents shifted grocery spending towards Q-commerce, while Redseer's 2026 report indicates that consumers continue to use other retail formats for larger planned purchases.

Discussion: The evidence suggests that Q-commerce and kirana stores may serve different purchase occasions rather than one necessarily replacing the other. Digital platforms may be preferred for urgent, small-basket purchases, while neighbourhood retailers can retain advantages in personal service and planned shopping. Digital tools and local delivery arrangements may help small retailers respond to competition.

8.7 Social Sustainability: Gig-Worker Welfare

Delivery workers are essential to the Q-commerce model because they collect and transport orders within short delivery windows. Their working conditions are therefore a central part of the sector's social sustainability.

Chaudhary et al. (2025) report an average daily earnings premium of approximately ₹75 for platform workers compared with non-platform workers in their Delhi sample. The study also identifies longer working hours, income volatility and limited access to standard employment benefits. Goswami et al. (2026), as reported in the source manuscript, identify compensation disparities, social-security gaps, financial instability and concerns about working hours and algorithmic performance measures among Q-commerce delivery workers.

Study	Sample	Reported Evidence
Chaudhary et al. (2025)	400 platform and non-platform delivery/taxi workers	Daily earnings premium reported for platform workers; concerns about longer hours and income volatility.
Goswami et al. (2026)	1,247 Q-commerce delivery workers	Concerns about compensation, social security, financial instability, working hours and algorithmic control.

Discussion: The social sustainability of Q-commerce cannot be measured only by the number of jobs generated. It also depends on predictable and transparent earnings, reasonable working hours, accident protection, fair incentive systems and access to social-security benefits.

8.8 Environmental Sustainability: Emissions and Packaging Waste

The environmental impact of Q-commerce is associated with frequent deliveries, local distribution facilities, packaging and inventory management. Balabantaray (2026) estimates delivery-related emissions of approximately 663,000 tonnes of CO_2-equivalent for FY2025 and identifies dark-store energy consumption and packaging waste as concerns. This is a research estimate based on the study's methodology, not an official government emissions inventory.

Daniel et al. (2026) use simulation-based modelling to compare Q-commerce and conventional e-commerce logistics. Their model reports higher emissions per item for Q-commerce and identifies last-mile logistics as a major source of emissions. Because these are modelled results, they should not be treated as measured emissions for every Indian platform.

Discussion: The available evidence suggests that rapid fulfilment can create environmental pressures. Per-order emissions may decline through better routing or cleaner vehicles, but total emissions may still rise if order volumes increase substantially. Platforms should therefore monitor both absolute emissions and emissions per order, alongside packaging recovery, energy use and inventory waste.

Operational and Infrastructure Barriers

Q-commerce depends on locating products close to consumers and coordinating inventory, picking, dispatch and delivery. Accurate demand forecasting, store-location decisions, product authenticity and delivery capacity are therefore important to operational performance.

Nagwal et al. (2026) identify infrastructure constraints, limitations in AI-based demand forecasting, packaging waste and product-authenticity concerns among the barriers to sustainable transformation. Swiggy's Q2 FY2025–26 disclosure reported 1,102 Instamart dark stores across 128 cities, illustrating the scale of infrastructure required to support expansion.

Discussion: Operational sustainability requires inventory, infrastructure and delivery capacity to be aligned with local demand. Inaccurate forecasting can contribute to stock-outs, excess inventory, wastage and higher costs. Expansion decisions should therefore be based on local demand and operational feasibility, not store-count growth alone.

Integrated Assessment under the Triple Bottom Line

Dimension	Evidence considered	Sustainability implication
Profit	Blinkit's GOV and revenue increased while its adjusted EBITDA loss narrowed; Instamart expanded GOV and users while its adjusted EBITDA loss increased.	Growth must translate into viable unit economics and sustainable operating performance.
People	Worker studies identify income volatility, compensation concerns, social-security gaps and working-hour issues.	Employment opportunities should be accompanied by fair, safe and secure working conditions.
Planet	Research estimates delivery emissions and identifies packaging waste and dark-store energy consumption.	Operational efficiency should be accompanied by measurable environmental improvements.

The integrated assessment shows that Q-commerce creates benefits and costs across the three TBL dimensions. It improves convenience and creates business and employment opportunities, but it also raises questions about operating losses, worker protection and environmental impacts. Long-term sustainability depends on progress across all three dimensions.

Major Findings

1. The Indian Q-commerce market expanded from an estimated USD 0.4 billion in FY2022 to around USD 13 billion in FY2026. Redseer's USD 70–90 billion estimate for FY2031 is a projection.
2. Delivery speed is an important adoption factor, but trust, freshness, price value and service reliability also influence continued use.

3. Survey-based studies report changes in impulse purchasing and grocery-spending patterns among their respondents; these findings should be interpreted within their sample limitations.
4. Metropolitan and Tier-2 consumers may differ in their emphasis on speed, price, digital trust and service reliability.
5. Kirana stores retain advantages in personal interaction, product familiarity, flexible purchasing and informal credit. Q-commerce may complement rather than fully replace traditional retail.
6. Blinkit's adjusted EBITDA loss narrowed in FY2024–25 despite substantial growth in GOV, revenue and orders.
7. Instamart expanded its GOV, user base and dark-store network in Q2 FY2025–26, while its year-on-year adjusted EBITDA loss increased.
8. Worker-related studies identify concerns about income volatility, compensation transparency, social protection and working hours.
9. Environmental studies identify delivery emissions, packaging waste and dark-store energy consumption as important sustainability concerns.
10. Demand forecasting, inventory management, infrastructure planning and last-mile efficiency are important to the long-term viability of the model.

Suggestions and Managerial Implications

Improving Economic Sustainability

Platforms should monitor contribution per order, fulfilment costs, inventory efficiency and customer-acquisition expenditure rather than relying only on GOV and user growth. Demand forecasting should incorporate local purchasing patterns, seasonality and product-level demand. Dark-store expansion should be supported by evidence of customer density and expected order volumes.

Improving Consumer Satisfaction and Responsible Consumption

Platforms should maintain product quality, freshness, accurate listings and reliable fulfilment. Pricing, delivery charges and promotional conditions should be communicated transparently. Promotional notifications and loyalty schemes should be designed responsibly so that they do not depend on misleading urgency or encourage unnecessary purchases.

Supporting Traditional Retailers

Small retailers can be supported through digital payments, inventory applications, digital bookkeeping and local delivery options. Partnerships between Q-commerce platforms and neighbourhood retailers may be explored where commercial terms, responsibilities and customer data practices are transparent and fair.

Strengthening Gig-Worker Welfare

1. Provide clear information about base payments, incentives and deductions.
2. Improve access to accident insurance and appropriate social protection.
3. Establish accessible grievance-redressal mechanisms.
4. Adopt reasonable working-hour and rest practices.
5. Explain how algorithmic allocation, ratings and performance measures affect workers.
6. Provide road-safety training and suitable protective equipment.

Reducing Environmental Impact

1. Use electric vehicles where operationally suitable and supported by charging infrastructure.
2. Reduce unnecessary single-use packaging and increase recyclable or reusable alternatives.
3. Improve energy efficiency in dark stores.

4. Strengthen packaging collection, recycling and recovery systems.
5. Improve inventory rotation and monitor food and product wastage.
6. Report absolute emissions as well as emissions per order.

Improving Operational and Regulatory Governance

Platforms should improve inventory accuracy, product authentication, demand forecasting and delivery planning. Dark-store locations should be assessed for traffic, neighbourhood effects and local planning requirements. Clearer standards relating to worker welfare, packaging responsibility and sustainability reporting can support accountability and reduce uncertainty.

Future Research Directions

1. A regional comparison of Q-commerce adoption in metropolitan and Tier-2 cities in Tamil Nadu.
2. A primary survey of delivery partners in Chennai, Coimbatore, Madurai and Tiruchirappalli to examine earnings, working hours and social protection.
3. A standardised financial comparison of Blinkit, Zepto and Swiggy Instamart using consistent segment-level indicators.
4. An investigation of impulse buying, digital promotions and responsible consumption.
5. A comparative assessment of emissions from Q-commerce and conventional grocery delivery.
6. An examination of how kirana stores respond to digital competition through technology and local delivery.
7. An assessment of AI-based demand forecasting, inventory optimisation and food-waste reduction.
8. An evaluation of the implementation and effectiveness of social-security provisions for platform workers.
9. Future research may also develop a Quick-Commerce Sustainability Index combining financial performance, worker welfare, customer experience and environmental indicators. Such an index would require clearly defined measures and comparable data across platforms.

Conclusion

Quick commerce has become a significant part of India's digital retail transformation. The expansion of platforms such as Blinkit, Zepto and Swiggy Instamart reflects changes in consumer expectations and the growing role of technology-enabled retail. Industry estimates and company disclosures show substantial growth in market size, order volumes, customer participation and fulfilment infrastructure.

The evidence reviewed in this study also points to challenges that accompany this expansion. Company disclosures show that operating losses remain relevant even as platforms scale. Consumer research identifies speed and convenience as important, while also highlighting trust, price sensitivity and service reliability. Traditional retailers continue to offer personal service and flexible purchasing arrangements. Studies of platform workers raise concerns about income security, social protection and working hours, while environmental research identifies delivery emissions, packaging waste and dark-store energy use as issues requiring attention.

The Triple Bottom Line framework provides a basis for considering these outcomes together. Economic sustainability requires viable operating economics; social sustainability requires fair and safe working conditions; and environmental sustainability requires responsible resource use and measurable reductions in ecological impact. The long-term prospects of Q-commerce in India will therefore depend not only on how quickly platforms deliver orders, but also on how effectively they balance commercial performance with worker welfare and environmental responsibility.

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