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Major Research Project

Beyond the Doorstep: Exploring the Work Conditions of Delivery Agents in Quick Commerce

Submitted By

Karan Sharma

24/DMBA/109

Master of Business Administration

MAJOR RESEARCH PROJECT

Under the Guidance of

Prof. Renuka Prasad

Assistant Professor

22



DELHI SCHOOL OF MANAGEMENT

Delhi Technological University

(Formerly Delhi College of Engineering)

Shahbad Daulatpur, Bawana Road, Delhi - 110042

CERTIFICATE OF TRANSMITTAL

May 06, 2026

Delhi School of Management

Delhi Technological University

Delhi – 110042

Subject: Submission of Research Paper – “Beyond the Doorstep: Exploring the Work Conditions of Delivery Agents in Quick Commerce”

Respected Sir/Madam,

With great humility, I present my research paper titled “Beyond the Doorstep: Exploring the Work Conditions of Delivery Agents in Quick Commerce” as a requirement for successful completion of our course of study at Delhi School of Management, Delhi Technological University.

This study is the result of my independent research work under your able guidance. It attempts to put forth the pressing issues, workplace issues, and employment patterns of delivery personnel employed on quick commerce platforms in Delhi NCR. The findings are based on both qualitative findings and quantitative information based on primary and secondary data sources.

I hope this research paper meets your expectations and serves as a meaningful contribution to the academic and practical understanding of labor conditions in the growing quick commerce sector.

Yours Sincerely,

Karan Sharma - 24/DMBA/109

Dr. Renuka Prasad

Delhi School of Management

Delhi Technological University

Dr. Saurabh Aggarwal (HOD)

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Lastly, I would also like to thank our friends, family, and colleagues for their constant encouragement and support throughout the project. Their belief in our work gave us the energy and motivation required to complete this thesis.

Thank you all.

EXECUTIVE SUMMARY

21 The current study analyzes the multifaceted problems of delivery agents operating in the burgeoning quick commerce sector, in particular for the Delhi NCR market. As quick commerce continues to reshape consumer buying behavior and aspirations, it also places significant strains on delivery agents as the backbone of the service. The study adopts a mixed-methods research strategy involving qualitative and quantitative data to analyze the working conditions, occupational hazards, safety concerns, and socio-economic issues of these frontline workers in a holistic manner. The primary data were collected through standardized questionnaires completed by delivery agents operating on varied platforms in Delhi NCR, while secondary data were collected through published reports, industry reports, and research papers. The findings of the research attempt to underscore the human cost of convenience embedded in the quick commerce model and provide recommendations on how the working conditions and overall well-being of delivery agents can be improved.

34

Keywords: Quick Commerce, Delivery Agents, Gig Economy, Working Conditions, Job Satisfaction, Delhi NCR, Occupational Hazards, Labor Welfare, Platform Economy.

TABLE OF CONTENTS

TOPIC	SUB-TOPIC	PAGE NO.
Acknowledgement		i
Executive Summary		ii
Table of Contents		iii
Chapter 1:	Introduction	
1.1	Background to the Problem	1
1.2	Problem Definition	3
1.3	Statement of the Problem	4
1.4	Scope of the Study	4
1.5	Objective of the Study	5
Chapter 2:	Literature Review	6
Chapter 3:	Research Methodology	16
3.1	Research Design	16
3.2	Sample Design	17
3.3	Data Collection	18
3.4	Validity	19
Chapter 4:	Data Analysis	20
4.1	Variables Under Investigation	20
4.2	Statistical Test Selection	21
4.3	Hypothesis Formulation	22
4.4	Descriptive Statistics	23
4.5	Inferential Statistics	27
Chapter 5:	Data Interpretation	32
5.1	Quantitative Results	32
5.2	Discussion	34
Chapter 6:	Summary, Conclusion, Limitation & Recommendations	37
Annexure		44
References		47

CHAPTER 1: INTRODUCTION

1.1 Background to the Problem

The global retail landscape has undergone a dramatic transformation over the past decade, driven largely by the rapid proliferation of digital technologies, mobile internet penetration, and evolving consumer expectations. Within this broader shift, quick commerce — commonly abbreviated as q-commerce — has emerged as one of the most disruptive and fast-growing segments of the e-commerce ecosystem. Unlike traditional e-commerce, which typically operates on delivery windows of one to seven days, q-commerce promises the delivery of goods — predominantly groceries, daily essentials, and fast-moving consumer goods — within a remarkably compressed timeframe of 10 to 30 minutes. This promise of near-instantaneous gratification has rapidly reshaped the shopping habits of millions of urban consumers across India.

In the Indian context, q-commerce gained significant traction in the post-pandemic period, when lockdowns and mobility restrictions compelled households to rely on doorstep delivery for even their most basic needs. Platforms such as Blinkit (formerly Grofers), Zepto, Swiggy Instamart, and BigBasket Now have scaled aggressively in high-density urban markets, particularly in metropolitan regions such as Delhi NCR, Mumbai, Bengaluru, Hyderabad, and Chennai. Delhi NCR, with its sprawling geography, dense population, and high purchasing power, has emerged as one of the most active and competitive q-commerce markets in the country. Industry estimates suggest that the Indian q-commerce market, valued at approximately USD 3.3 billion in 2023, is expected to grow at a compound annual growth rate (CAGR) of over 40 percent in the years ahead.

The operational infrastructure underpinning this rapid delivery promise is built upon a network of dark stores — small, strategically located micro-warehouses stocked with high-demand inventory — and a fleet of delivery agents who serve as the last-mile link between the platform and the consumer. These delivery agents, often referred to as delivery executives or riders, are the human engine that powers the q-commerce model. Their ability to navigate congested urban traffic, locate addresses quickly, and

complete multiple deliveries within strict time windows is what makes the promise of 10-minute delivery operationally viable.

However, the very features that make q-commerce a convenient service for consumers create an exceptionally demanding and often hazardous work environment for delivery agents. These workers operate under intense time pressure, frequently navigating high-traffic corridors in cities where road infrastructure is strained and traffic management is inconsistent. They are exposed to adverse weather conditions — extreme heat in summer, heavy rainfall during the monsoon, and cold in winter — with little or no institutional protection. Their earnings are typically tied to gig-type payment models, where compensation depends on the number of deliveries completed, the platform's incentive structure, and fluctuating demand patterns. This creates significant income volatility, making financial planning and stability difficult for these workers.

In addition to physical and financial stressors, delivery agents frequently contend with a lack of formal employment protections. The majority are classified as independent contractors or gig workers, which means they do not qualify for benefits such as provident fund contributions, employee state insurance, paid leave, or gratuity under existing Indian labour law. The platforms benefit from this classification as it reduces their employment costs and regulatory obligations, but it leaves delivery agents in a structurally precarious position. The rapid growth of the q-commerce sector has thus created a paradox: an industry celebrated for its innovation and consumer convenience that simultaneously exposes its frontline workforce to significant socio-economic vulnerability.

Academic literature and investigative journalism have increasingly drawn attention to the hidden costs of the gig economy's expansion. Studies from comparable markets in the United States, the United Kingdom, and Southeast Asia have documented the physical toll of delivery work, including higher rates of road accidents, musculoskeletal injuries, and psychological burnout among gig workers. However, India-specific empirical research on q-commerce delivery agents remains sparse, with most existing studies focused on logistics efficiency, platform architecture, and consumer behaviour rather than the labour conditions of those who sustain the system. This study seeks to address that gap by providing an empirically grounded examination of the working conditions of quick commerce delivery agents in Delhi NCR.

1.2 Problem Definition

The fast commerce model values speed, operational effectiveness, and customer happiness but typically at the expense of the delivery personnel who are the backbone of its operations. Such personnel have to achieve tight delivery schedules in a high-pressure environment, in most instances, in risky city conditions. In the Delhi NCR region, where there is intense customer demand and infrastructural challenges are prevalent, such problems are more pronounced.

The structural problem lies in the misalignment between the service promises made by q-commerce platforms to their customers and the employment conditions offered to the workers who fulfil those promises. Platforms invest heavily in technology — artificial intelligence, route optimisation algorithms, real-time tracking, and predictive demand modelling — to enhance delivery speed and customer satisfaction. Yet the same platforms often rely on informal, flexible, and poorly regulated labour arrangements that externalise risk onto individual delivery agents. Workers bear the cost of traffic delays, address errors, equipment maintenance, and safety risks, while platforms retain the revenue benefits of high-speed delivery and minimal fixed labour costs.

As organisations increasingly seek to enhance delivery logistics and improve customer experiences, the situation of delivery workers — marked by long working hours, employment insecurity, mental distress, poor benefits, and inadequate legal protection — remains poorly documented and insufficiently addressed. This deficiency of knowledge and policy intervention is a significant issue, particularly as the gig economy continues to grow and increasingly dominates the urban labour market in India. Without systematic research and regulatory attention, the structural vulnerabilities of q-commerce delivery agents are likely to deepen as the sector expands.

1.3 Statement of the Problem

Quick commerce is built on speed, but the well-being of the delivery workers who enable this model is typically invisible. Delhi NCR workers navigate demanding deadlines, congested roads, and unstable earnings with minimal institutional support. Though central to the entire q-commerce value chain, their working conditions,

physical safety, and job security are not adequately addressed either by platform policies or by existing labour regulations. This study attempts to bring out and explore these unseen issues with a view to raising awareness, generating empirical evidence, and contributing to meaningful change in policy and platform practice.

1.4 Scope of the Study

The scope of this study is delimited to delivery agents actively engaged with quick commerce platforms in the Delhi NCR region, which includes the districts of Delhi, Gurugram, Faridabad, Noida, and Ghaziabad. The study concentrates on the following dimensions of the delivery agent experience:

- Socio-demographic profile of delivery agents, including age, gender, educational background, and residential status.
- Employment characteristics, including type of employment contract, platform affiliations, and duration of service.
- Economic dimensions, including monthly income levels, payment structure satisfaction, and access to financial benefits.
- Occupational hazards and physical working conditions, including exposure to traffic, weather, and workload intensity.
- Psychosocial factors, including job satisfaction, mental well-being, and career intentions.
- Institutional support mechanisms, including access to unions, grievance redressal systems, and platform welfare initiatives.

The study does not cover delivery agents operating in other cities or in traditional e-commerce platforms with longer delivery windows. It also does not extend to platform management or consumer perspectives, focusing exclusively on the frontline delivery workforce.

1.5 Objective of the Study

Primary Objective:

The primary objective of the present study is to examine and analyze the working conditions and challenges of the delivery agents of the quick commerce sector, especially in the Delhi NCR region. The present study seeks to obtain a deep

9 understanding of their everyday life, employment terms, impact on physical as well as mental health, income patterns, and job satisfaction. Through this examination, the study seeks to fill an important void in the scholarly and industrial literature concerning labour practices on gig-based quick commerce platforms.

107 Secondary Objectives:

- 70
1. To identify the major work hazards and stressors faced by quick commerce delivery workers in the Delhi NCR region.
 2. To measure the socio-economic profile of delivery agents, including levels of income, employment types (full-time, part-time, gig), and access to social security benefits.
 3. To determine the degree of job satisfaction and mental well-being among delivery agents.
 4. To examine organisational policies and delivery arrangements to understand their impact on agent workload, motivation, and safety.
 5. To explore the relationship between platform affiliation and the receipt of incentives and bonuses.
 - 87 6. To provide evidence-based policy recommendations for improving the working conditions and welfare of quick commerce delivery agents.

CHAPTER 2: LITERATURE REVIEW

The body of scholarship examining quick commerce and its labour implications is still nascent, having gained momentum primarily after 2020. This chapter situates the present study within the existing theoretical and empirical literature by reviewing key frameworks relevant to gig work, labour conditions in the platform economy, and the specific operational context of q-commerce in South Asia. The chapter is organised into four sections: the theoretical framework underpinning the study; a review of empirical studies on delivery workers and gig labour globally and in India; the context of q-commerce growth in India; and an identification of the key research gaps that this study addresses.

2.1 Theoretical Framework

2.1.1 The Gig Economy and Platform Labour Theory

The concept of the gig economy refers to a labour market characterised by short-term contracts, freelance work, and on-demand employment, in contrast to permanent employment relationships. The term gained wide academic currency following the global expansion of digital platforms such as Uber, Lyft, TaskRabbit, and Deliveroo, which intermediated labour supply and demand through mobile applications and algorithmic management systems. Scholars such as Sundararajan (2016) and Kenney and Zysman (2016) have theorised that platform companies constitute a fundamentally new organisational form, one that disaggregates production and distribution while aggregating demand and revenue. In this model, the platform functions as an orchestrator rather than an employer, externalising operational risk to its network of independent workers.

This theoretical framing is directly applicable to the quick commerce context in India. Platforms like Blinkit, Zepto, and Swiggy Instamart do not employ delivery agents as permanent staff in the conventional sense; instead, they engage them through flexible contractual arrangements that blur the line between employment and self-employment. The consequence is that delivery agents operate within a paradoxical space: they are functionally integrated into the platform's service delivery chain but legally excluded from the full spectrum of employment protections that formal workers enjoy.

De Stefano (2016) has articulated this tension through the framework of “crowdwork” and “work on demand via apps,” arguing that such arrangements systematically transfer economic risk from the platform to the worker while simultaneously maintaining operational control through digital means. The platform determines the pricing, the routing, the delivery standards, and the performance metrics, but the worker bears the risk of income fluctuation, accidents, and asset depreciation such as the cost of maintaining a bicycle or motorcycle. This structural asymmetry is a central theme in the present study.

2.1.2 Algorithmic Management and Worker Autonomy

A significant theoretical development in the study of platform labour has been the concept of algorithmic management, introduced by Lee et al. (2015) and subsequently elaborated by Rosenblat and Stark (2016) in their ethnographic study of Uber drivers. Algorithmic management refers to the use of automated systems to direct, monitor, evaluate, and discipline workers, replacing the traditional role of human supervisors. In q-commerce platforms, algorithmic management manifests through real-time GPS tracking, automated delivery time targets, dynamic rating systems, and incentive structures that reward compliance with platform-defined norms and penalise deviations.

Wood et al. (2019) found in a cross-national study of platform workers that algorithmic management creates a distinctive form of work intensification, where the worker’s sense of autonomy is simultaneously promoted through the rhetoric of being one’s own boss and undermined through constant digital surveillance and performance monitoring. This contradiction is particularly salient in the q-commerce context, where delivery agents are required to meet externally imposed time targets while navigating unpredictable urban conditions. The gap between the ideal delivery time mandated by the algorithm and the realistic time possible given traffic, weather, and address complexity is a primary source of occupational stress for delivery agents.

For the purposes of the present study, algorithmic management theory provides a framework for understanding how platform-imposed structures shape the work experience of delivery agents in Delhi NCR. The study’s examination of variables such as target setting, incentive distribution, and satisfaction with payment structure is informed by this theoretical lens.

2.1.3 Herzberg's Two-Factor Theory of Motivation

Herzberg's Two-Factor Theory, also known as the Motivation-Hygiene Theory, provides a useful framework for analysing the job satisfaction and dissatisfaction patterns observed among delivery agents. Herzberg (1959) distinguished between two categories of workplace factors: hygiene factors, whose absence leads to dissatisfaction but whose presence does not necessarily produce satisfaction, such as salary, working conditions, and job security; and motivators, whose presence actively increases satisfaction and motivation, such as recognition, achievement, and the nature of the work itself.

In the context of q-commerce delivery agents, hygiene factors such as fair wages, safe working conditions, and employment security are notably deficient, as evidenced by the low mean satisfaction score of 2.67 out of 5 on the payment structure scale in the present study. The absence of these hygiene factors is a primary driver of dissatisfaction. At the same time, the platform model offers limited motivators; the work is largely repetitive and task-based, with few opportunities for skill development, career advancement, or meaningful recognition. Herzberg's framework thus predicts the kind of pervasive dissatisfaction and high turnover intention observed among delivery agents in this study.

2.1.4 Precarious Work and Social Vulnerability

The concept of precarious work — characterised by low wages, insecure contracts, limited benefits, and high vulnerability to economic shocks — has been extensively theorised in labour sociology by Standing (2011) and Vosko (2010), among others. Standing's work on the precariat as an emerging social class is particularly relevant to the q-commerce delivery workforce. The precariat is defined not merely by low income but by the absence of labour-related securities: employment security, work security, skill reproduction security, income security, representation security, and voice representation.

Delivery agents in the Indian q-commerce sector display multiple dimensions of precarity. Their employment is typically short-term or at-will, subject to platform deactivation without formal due process. Their incomes are variable and unpredictable. They lack access to social security mechanisms such as provident fund, health insurance, and accident coverage in most cases. They have minimal collective

bargaining power, given the absence of effective unions in the sector. And they possess limited pathways for upward mobility within the platform organisation. Standing's framework provides the broader sociological context within which the empirical findings of this study are to be interpreted.

2.2 Review of Empirical Studies

2.2.1 Global Studies on Gig and Delivery Workers

The international literature on gig economy labour conditions is substantial and growing. Vallas and Schor (2020) conducted a comprehensive review of platform labour research and found consistent evidence of economic insecurity, work intensification, and limited social protection among gig workers across multiple sectors and countries. Their review highlighted that while gig work provides flexibility and supplemental income for some workers, for those who rely on it as a primary income source — which is the case for the majority of full-time delivery agents in this study — it tends to reproduce and deepen socio-economic vulnerability.

Goods, Veen, and Barratt (2019) conducted in-depth interviews with food delivery workers in Australia and found that algorithmic control by platforms had a significant negative effect on worker agency and job satisfaction. Respondents reported that the gap between platform-mandated delivery times and actual road conditions created chronic stress and contributed to risk-taking behaviour such as running red lights and speeding. These findings resonate strongly with the challenges reported by Delhi NCR delivery agents in the present study, where traffic congestion and time pressure were among the most frequently cited stressors.

Cherry and Poster (2016) examined the regulatory challenges posed by platform labour across multiple jurisdictions and found that existing labour law frameworks were largely inadequate to address the rights of workers who do not fit neatly into the employer-employee binary. They argued for the development of intermediate legal categories that extend core labour protections — minimum wage guarantees, occupational safety standards, and anti-discrimination provisions — to workers who are functionally integrated into a platform's service delivery but formally classified as independent contractors. This regulatory gap is particularly acute in India, where the labour law system is still in the process of adapting to the realities of the gig economy.

2.2.2 Studies on Delivery Workers in India

Empirical research on delivery workers in the Indian context is more limited but has grown significantly since 2020. Ahmad and Omar (2023) proposed a theoretical model of the gig-based delivery economy, highlighting aspects such as platform control, digital surveillance, and incentive structures. Their model identifies three key dimensions of worker experience: economic precarity characterised by income volatility and absence of benefits; operational pressure characterised by algorithmic target-setting and constant monitoring; and social isolation characterised by the absence of peer support and collective representation. All three dimensions are empirically relevant to the q-commerce delivery context in Delhi NCR.

Empirical studies by IRJET (2024) and Mishra (2025) acknowledge the psychological and physical pressures experienced by delivery workers, citing concerns such as working long hours, lack of health benefits, and inadequate safety protocols. Mishra (2025) specifically documented that delivery agents in Tier-1 Indian cities reported average working hours of 9 to 12 hours per day, with limited access to rest facilities or hydration points at dark stores. This is consistent with the finding in the present study that 48.5 percent of respondents worked between 8 and 12 hours per day, and a further 10.6 percent reported working more than 12 hours daily.

Fortune India (2024) reported on a study that found quick commerce delivery riders in India were subjected to increasingly compressed delivery windows, with some platforms reducing the target delivery time to as low as 10 minutes. The article documented a rise in road accidents involving delivery riders and noted that the majority of such accidents were linked to the pressure to meet time targets. The Economic Times has similarly reported on instances of delivery agents sustaining serious injuries in traffic accidents and receiving minimal compensation from platforms, given their classification as independent contractors.

Shafighi (2022) provided a broader South Asian perspective, highlighting that while the q-commerce sector in South Asia had experienced spectacular growth, the labour infrastructure supporting this economy was comparatively weak. Shafighi observed that regulatory frameworks in South Asian countries, including India, had not kept pace with the speed of platform economy expansion, creating a structural deficit in worker protections. The study called for region-specific empirical research to inform

more targeted policy responses — a gap that the present study seeks to partially address in the context of Delhi NCR.

2.2.3 Occupational Health and Safety in Delivery Work

Occupational health research on delivery workers has consistently found elevated rates of musculoskeletal disorders, road accidents, and psychological distress in this population. Vargas-Huambo et al. (2021) conducted a systematic review of occupational health studies on motorcycle delivery riders and found that exposure to heavy traffic, long working hours, and carrying heavy loads were the primary risk factors for musculoskeletal injury. The review found that the lumbar spine, neck, and shoulders were the most commonly affected body regions, and that the incidence of injury increased significantly for workers who completed more than eight hours of riding per day.

Mental health outcomes have also been documented in the delivery worker literature. A study by the Oxford Internet Institute (2019) found that gig workers across multiple platforms reported significantly higher levels of anxiety and depression than the general working population, with algorithmic uncertainty — the inability to predict one's income, rating, or access to work — identified as a key stressor. In the q-commerce context, this uncertainty is compounded by the dependence of income on both the number of orders received and the maintenance of a high performance rating, which affects priority access to orders in some platforms.

2.3 Quick Commerce in India: Context and Growth

To fully appreciate the labour conditions of q-commerce delivery agents, it is necessary to understand the structural and competitive dynamics of the Indian q-commerce market. The sector emerged as a distinct segment around 2020 and 2021, catalysed by the pandemic-induced shift to online grocery purchasing. Initial entrants like Grofers (later rebranded as Blinkit) and Swiggy Instamart began experimenting with dark store models and rapid delivery promises in select pin codes of major cities. The success of these pilots attracted significant venture capital investment, and by 2022, the q-commerce space had become one of the most actively funded segments of the Indian start-up ecosystem.

Zepto, founded in 2021, achieved unicorn status within a year of its launch, raising substantial funding on the strength of its 10-minute delivery proposition. Blinkit, acquired by Zomato in 2022, expanded aggressively to hundreds of dark stores across India by 2024. Swiggy Instamart and BigBasket Now similarly scaled their operations, resulting in a highly competitive market where delivery speed and product availability became the primary dimensions of consumer differentiation.

This competitive dynamic has had direct implications for delivery agents. As platforms compete to offer faster delivery windows, the operational pressure on riders intensifies. Dark stores are positioned to minimise the distance between inventory and the consumer, but the density of orders per rider and the speed expectations per delivery continue to rise. Moreover, platforms frequently adjust their incentive structures in response to competitive pressures, making income predictability difficult for delivery agents who are not party to the strategic calculus driving these decisions.

The Indian government has begun to acknowledge the regulatory challenges posed by the gig economy's growth. The Code on Social Security, 2020, for the first time recognised gig workers and platform workers as distinct categories and mandated the central government to formulate welfare schemes for them. However, implementation has been uneven, and the code's provisions for gig workers have not yet translated into meaningful improvements in the working conditions of q-commerce delivery agents. The Rajasthan Platform Based Gig Workers (Registration and Welfare) Act, 2023, represents a state-level legislative initiative, but its application is limited geographically and has yet to be replicated in Delhi.

In this context, empirical research documenting the lived realities of q-commerce delivery agents in Delhi NCR is not merely an academic exercise; it is a necessary input to the policy-making process. By generating systematic evidence on the working conditions, income patterns, and support needs of this workforce, the present study contributes to the evidence base required for informed regulatory intervention.

2.4 Research Gaps

Although literature on q-commerce is expanding, significant gaps remain — especially concerning the socio-economic and occupational aspects of delivery agents in India. Key research gaps are as follows:

1. Inadequate Representation of Delivery Agents' Experiences

While q-commerce platforms have been examined in terms of their technology-driven logistics and market reach, empirical studies focused on the lived realities of delivery agents in India are limited. Current studies tend to address these actors primarily as logistical variables rather than as human labourers with complex socio-economic backgrounds and subjective experiences. The dominant research focus on consumer satisfaction metrics, platform business models, and supply chain efficiency has left a substantial void in understanding the worker perspective. Few ethnographic or structured survey-based studies have systematically captured the voices of delivery agents, their daily challenges, or their perceptions of fairness within the platform ecosystem.

2. Lack of Region-Specific Focus

While Shafighi (2022) outlines general South Asian concerns, the specific working conditions in major Indian urban centres such as Delhi NCR, Mumbai, and Bengaluru — where traffic density, pollution levels, and infrastructural inadequacies compound the challenges of delivery work — have received insufficient scholarly attention. Delhi NCR presents a particularly complex operating environment given its vast geographical spread, heterogeneous road conditions, and the extreme climatic variation between its summer months and winter season. Region-specific research is essential for developing contextually appropriate policy and platform-level interventions.

3. Absence of Longitudinal Studies on Worker Health and Income Stability

Delivery agents work extended hours under heavy physical and psychological load; however, there is a near-total absence of longitudinal studies estimating the cumulative effects of these conditions on their physical and mental well-being over time. Cross-sectional surveys capture a snapshot of worker conditions but cannot track the trajectory of health outcomes, income stability, or career transitions. Longitudinal research would be valuable in understanding whether delivery work functions as a temporary stepping stone or a labour market trap for workers who enter the sector. Furthermore, the long-term economic consequences of income variability — including effects on savings behaviour, debt accumulation, and family welfare — remain largely unexamined in the Indian q-commerce context.

4. Limited Analysis of Gig Economy Employment Models

While Ahmad and Omar (2023) theorise the gig model, empirical field research examining how q-commerce platforms specifically operationalise gig employment in India is lacking. In particular, there is insufficient empirical knowledge of the contractual arrangements, benefit exclusions, and algorithmic incentive structures that shape agents' everyday working lives. The diversity of platform models — ranging from fully gig-based engagement to hybrid arrangements incorporating some employment benefits — has not been systematically documented or compared, making it difficult to assess which platform practices are associated with better or worse worker outcomes.

5. Policy and Regulatory Oversight

Even as there is growing concern in advocacy and media communities around the rights of delivery agents, few academic studies have critically examined the gaps in labour law and policy implementation in India as they pertain specifically to q-commerce workers. Research is needed that bridges the legal gap between informal gig economy work and formal labour rights, particularly in the context of India's evolving legislative framework. The Code on Social Security (2020) and state-level gig worker legislation represent important developments, but their practical implications for q-commerce delivery agents have not been rigorously analysed.

6. Insufficient Technological Impact Assessment

Most of the available literature emphasises the contribution of artificial intelligence, real-time monitoring, and route optimisation algorithms to enhancing the efficiency of customer delivery. There is comparatively little research investigating the impact of these technologies on the autonomy, workload, and well-being of delivery workers. The consequences of continuous performance monitoring, rating-based access to orders, and algorithmic penalty systems on worker psychology and behaviour are not well examined in the Indian context. As platforms continue to invest in and deploy more sophisticated management technologies, understanding their human impact becomes increasingly important for both scholarly and policy purposes.

7. Overemphasis on Consumer-Centric Metrics

The prevailing tilt in q-commerce research towards consumer experience metrics — including delivery speed, product availability, app usability, and service quality — has come at the cost of a systematic examination of backend labour dynamics. This imbalance in research priorities reflects and reinforces a broader tendency within the platform economy to render workers invisible in the value creation narrative. Redressing this imbalance is a necessary step towards developing a more complete and ethically grounded understanding of the q-commerce sector and the conditions under which its extraordinary growth is being achieved.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter details the methodological framework adopted in the present study. It describes the research design, sampling strategy, data collection instruments, and the statistical and qualitative analytical techniques employed. The methodology has been chosen to ensure that the research objectives are addressed in a systematic, rigorous, and ethically sound manner.

3.1 Research Design

This study uses a convergent parallel mixed-methods approach in studying the working conditions and challenges of delivery agents in the quick commerce sector in the Delhi NCR area. Mixed-methods research, as conceptualised by Creswell and Plano Clark (2018), involves the concurrent or sequential collection and integration of both quantitative and qualitative data to produce a more comprehensive understanding of a research problem than either approach alone could achieve. The convergent parallel design specifically involves collecting quantitative and qualitative data simultaneously, analysing them independently, and then merging the findings at the interpretation stage.

This design is particularly appropriate for the present study because the working conditions of delivery agents are a complex, multidimensional phenomenon that cannot be adequately captured by purely numerical measures. Quantitative data from Likert-scale and categorical survey items allow for the statistical analysis of patterns and relationships across the sample, while qualitative data from open-ended questions provide depth, nuance, and contextual meaning that enrich the interpretation of statistical findings. The integration of both data types enables a more complete and credible account of the delivery agent experience.

1. Quantitative Component:

Instrument: A standardised online survey (Google Form) with predominantly closed-ended questions, including Likert-scale questions. These questions measured variables like income levels, workload, employment status, job satisfaction, incentive distribution, and safety issues.

Sample: The delivery staff currently employed with large quick commerce platforms such as Blinkit, Zepto, Swiggy Instamart, Flipkart Minutes, and Zomato Instant working in the Delhi NCR area.

Analysis Techniques:

- Descriptive Statistics: To summarise demographic patterns and employment conditions.
- Cronbach's Alpha: To assess the internal consistency of Likert-scale items measuring perceptions and satisfaction.
- Independent Samples t-Test: To examine mean differences in satisfaction and work conditions between full-time and part-time agents.
- One-Way ANOVA: To compare perceptions and challenges across different platforms.
- Chi-Square Test: To explore associations between categorical variables such as platform vs. incentive availability or income level vs. future job intentions.

2. Qualitative Component:

Instrument: Open-ended questions within the same survey allowed delivery agents to offer information on their everyday struggles, platform-specific concerns, and suggestions for reform.

Use: Coded and thematically categorised responses were used to extract persistent stress patterns, safety concerns, income insecurity, and platform-specific expectations. Thematic analysis followed the six-step process outlined by Braun and Clarke (2006): familiarisation with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final analysis.

3.2 Sample Design

- Target Population: Delivery agents actively working with quick commerce platforms in Delhi NCR.
- Sample Size: A total of 66 valid responses were received through the online survey.

- **Sampling Technique:** Convenience sampling was employed to access working delivery personnel. Respondents were approached via personal and professional networks, peer referrals, and digital platforms. While convenience sampling limits the generalisability of findings, it is an appropriate and commonly used strategy in studies of hard-to-reach populations such as gig workers, who do not have a centralised registry and are often reluctant to participate in formal research.

Inclusion Criteria:

- Currently active delivery agents in Delhi NCR.
- Associated with one or more quick commerce platforms.

Exclusion Criteria:

- Individuals not currently engaged in delivery work.
- Respondents outside Delhi NCR or those working in non-quick-commerce sectors.

3.3 Data Collection

Quantitative Data:

Collected using a Google Form featuring:

- **Demographic details:** Age group, gender, education level.
- **Employment characteristics:** Platform association, contract type, work experience, hours worked, and income bracket.
- **Likert-scale questions:** Focused on aspects like job satisfaction, workload, safety, stress, and perceptions of incentives and managerial support.

Scaling Techniques:

- **Nominal Scales:** For responses such as gender, platform, or employment type.
- **Ordinal Scales:** For income brackets, experience levels, and Likert-scale items.
- **Likert Scales (1–5):** For measuring satisfaction, pressure levels, and agreement with statements related to work environment and job expectations.

Qualitative Data:

Open-ended questions invited detailed input on:

- Common challenges and stressful situations encountered during deliveries.
- Perceptions of fairness in pay and incentive systems.
- Suggestions for improving work conditions and agent welfare.

The survey was administered online between January and March 2025. Informed consent was obtained from all respondents, and anonymity was guaranteed. The survey was offered in both Hindi and English to ensure accessibility for respondents with varying levels of English language proficiency.

3.4 Validity

- **Content Validity:** The questionnaire had been formulated to align with the main purposes of the study — to determine issues, measure job satisfaction, and examine systemic concerns in rapid commerce delivery. Questions in the questionnaire had been screened for clarity and suitability by academic advisors at Delhi School of Management.
- **Construct Validity:** Internal consistency of composite Likert-scale items of satisfaction, stress, and motivation were estimated by means of Cronbach's Alpha measure.
- **Pilot Testing:** The survey was pilot-tested with a small sample of eight active delivery workers prior to deployment at scale to ensure question clarity, linguistic accessibility, and contextual appropriateness. Feedback from the pilot led to minor revisions in the wording of questions related to income satisfaction and perceived safety.
- **Ethical Considerations:** The study was conducted in accordance with standard academic research ethics. Participation was voluntary, and respondents were informed of their right to withdraw at any point. No personally identifiable information was collected, and all data were stored securely and used solely for academic purposes.

CHAPTER 4: DATA ANALYSIS

4.1 Variables Under Investigation

This study focuses on both demographic and work-related variables to understand the lived experiences of quick commerce delivery agents in Delhi NCR. Variables have been grouped under key thematic categories and are analysed using appropriate statistical techniques. The selection of variables was guided by the conceptual frameworks reviewed in Chapter 2 and the research objectives outlined in Chapter 1.

A. Demographic Profile (Nominal/Ordinal - Categorical Variables)

- Age Group: Below 20, 21–25, 26–30, 31–35, Above 35
- Gender: Male, Female
- Education Level: Below 10th, 10th Pass, 12th Pass, Undergraduate, Graduate, Postgraduate

B. Employment and Income Profile (Ordinal/Categorical Variables)

- Work Experience in Quick Commerce: Less than 6 months, 6 months – 1 year, 1–2 years, above 2 years
- Number of Platforms Worked With: 1, 2, More than 2
- Employment Status: Full-time, Part-time
- Employment Type/Contract: Permanent, Temporary, Gig-based/Freelancer, Other
- Average Monthly Income from Delivery Work: Below ₹10,000, ₹10,000–15,000, ₹15,001–20,000, ₹20,001–25,000, Above ₹25,000
- Average Hours Worked Per Day: Less than 4, 4–6, 6–8, More than 8

C. Work Conditions and Job Structure (Nominal and Ordinal Variables)

- Daily Delivery Targets Assigned: Yes, No
- Receipt of Incentives/Bonuses: Yes, No
- Type of Incentives: Monetary Bonus, Fuel Allowance, Attendance Bonus, None
- Presence of a Union or Support System: Yes, No

D. Job Satisfaction and Future Intentions (Ordinal – Scaled Variables)

- Satisfaction with Payment Structure: 1 (Very Dissatisfied) to 5 (Very Satisfied)
- Future Intention to Continue as a Delivery Agent (Next 5 Years): Yes, No, Not Sure

E. Open-ended Qualitative Variables (Thematic Content Analysis)

- Challenges Faced While Delivering in Urban Areas
- Suggestions for Improving Work Conditions

4.2 Statistical Test Selection

To analyse the data collected from delivery agents, the following statistical tests were selected based on the variable types and research objectives:

- **Descriptive Statistics:** Used to summarise demographic variables (age, gender, education) and job-related patterns (work experience, income, working hours). Frequency distributions and percentage calculations were used for categorical variables, while mean and standard deviation were computed for continuous and Likert-scale variables.
- **Cronbach's Alpha:** Applied to Likert-scale items such as Satisfaction with Payment Structure to assess internal consistency and reliability.
- **Independent Samples t-Test:** Used to compare means of job satisfaction between two independent groups: full-time vs. part-time delivery agents.
- **Chi-Square Test of Independence:** Used to examine associations between categorical variables such as receipt of incentives and type of employment, or platform and future work intention.

4.3 Hypothesis Formulation

The following research questions and hypotheses are developed to statistically test the relationships between key variables identified in the study:

1. Research Question: Does employment type (full-time vs. part-time) influence job satisfaction among delivery agents?

- H_0 : There is no significant difference in job satisfaction between full-time and part-time delivery agents.
- H_1 : There is a significant difference in job satisfaction between full-time and part-time delivery agents.

2. Research Question: Is there an association between the type of delivery platform and whether incentives are received?

- H_0 : The type of platform is not associated with the receipt of incentives.
- H_1 : The type of platform is associated with the receipt of incentives.

3. Research Question: Does the number of hours worked per day affect satisfaction with the payment structure?

- H_0 : There is no significant difference in payment satisfaction across different working hours.
- H_1 : There is a significant difference in payment satisfaction across different working hours.

4.4 Descriptive Statistics

This section provides a comprehensive overview of the demographic and occupational characteristics of the surveyed quick commerce delivery agents. A total of 66 valid responses were analysed to identify key trends in employment structure, income, working hours, job satisfaction, and long-term career outlook. The descriptive findings paint a picture of a workforce that is predominantly young, male, and moderately educated, engaged in physically demanding work under conditions of significant economic uncertainty.

4.4.1 Age and Gender Distribution

Age Group:

- 18–25 years: 37.9%
- 26–35 years: 36.4%
- 36–45 years: 19.7%
- 46 and above: 6.1%

The age distribution reveals that the overwhelming majority of respondents (74.3%) are between 18 and 35 years of age, consistent with the physically demanding nature of delivery work. The relative absence of older workers may reflect both the physical demands of the job and the limited career longevity it typically affords.

Gender:

- Male: 93.9%
- Female: 6.1%

The highly skewed gender distribution, with females constituting only 6.1% of the sample, reflects the broader male dominance of the delivery sector in India. Safety concerns, social norms around women's mobility, and the physically demanding nature of two-wheeler-based delivery work are among the factors that discourage female participation in this occupation.

4.4.2 Educational Background

- Higher Secondary: 39.4%
- Secondary: 25.8%
- Graduate: 19.7%
- Primary: 10.6%
- Postgraduate: 4.5%

The educational profile of respondents indicates that the majority have completed secondary or higher secondary education. The presence of graduates (19.7%) and postgraduates (4.5%) in the delivery workforce highlights the labour market pressures that lead educated young people to accept informal gig work as a primary livelihood.

4.4.3 Employment Nature and Contract Type

Employment Type:

- Full-time: 71.2%
- Part-time: 28.8%

Type of Contract:

- Temporary: 33.3%
- Permanent: 31.8%

- Contract-based: 27.3%
- Freelancer: 7.6%

The fact that 71.2% of respondents are full-time delivery agents indicates that for the majority, q-commerce delivery is a primary livelihood rather than supplemental income. This makes the quality of employment conditions — including payment structure, incentives, and access to benefits — of critical importance to their economic security.

4.4.4 Income and Working Hours

Monthly Income:

- ₹10,000–₹20,000: 39.4%
- ₹20,000–₹30,000: 39.4%
- Less than ₹10,000: 10.6%
- Above ₹30,000: 10.6%

While this range is nominally above the national minimum wage for unskilled labour in Delhi, it must be contextualised against the high cost of living in Delhi NCR. Delivery agents who own their vehicles also bear the cost of fuel, maintenance, and insurance from their earnings, effectively reducing their net income.

Average Daily Working Hours:

- 8–12 hours: 48.5%
- 4–8 hours: 30.3%
- Less than 4 hours: 10.6%
- More than 12 hours: 10.6%

The working hours data reveal a concerning pattern: nearly 60% of respondents work 8 or more hours per day, with 10.6% reporting more than 12 hours of daily work. These figures significantly exceed the 8-hour standard working day prescribed by Indian labour law. The extended working hours are a function of both the piece-rate income structure and the frequent gaps between order assignments.

4.4.5 Challenges in Urban Deliveries

Respondents cited a variety of challenges including:

- Traffic congestion
- Time pressure from delivery targets
- Difficulty in locating addresses
- Safety concerns on the road
- Extreme weather conditions

Top combinations of challenges reported simultaneously:

- Traffic + Time Pressure + Address Difficulty
- Time Pressure + Safety
- Traffic + Safety + Weather Conditions

The qualitative responses elaborated on these challenges in revealing ways. Several respondents noted that the 10-minute delivery window is practically unachievable during peak traffic hours in Delhi, and that the pressure to meet targets forces them to take risks such as jumping signals and exceeding speed limits. Others highlighted the difficulty of locating addresses in newly developed areas where digital maps are often inaccurate. Weather emerged as a major stressor, particularly during Delhi's summer months when road surface temperatures are extreme, and during the monsoon when heavy rainfall creates visibility hazards and severe waterlogging.

4.4.6 Support Systems and Incentives

Union Support:

- No: 65.2%
- Yes: 34.8%

Incentives or Bonuses:

- Rarely: 36.4%
- Occasionally: 33.3%
- Never: 18.2%
- Regularly: 12.1%

These numbers reflect a significant deficit in both collective support and individual incentive structures. The absence of union membership or equivalent support

mechanisms for nearly two-thirds of respondents leaves them without an institutional voice to negotiate better working conditions or challenge unfair platform decisions.

4.4.7 Job Satisfaction and Career Outlook

Satisfaction with Payment Structure:

- Mean Score: 2.67 out of 5 – This indicates a below-average level of satisfaction with earnings.

Future Career Plans:

- Not sure: 31.8%
- Maybe: 31.8%
- No, I plan to switch careers: 22.7%
- Yes, definitely: 13.6%

The career outlook data are perhaps the most telling indicator of structural issues in q-commerce employment. Only 13.6% of respondents definitively intend to continue as delivery agents in the long term, while 22.7% have already decided to switch careers. A further 63.6% are undecided or ambivalent, reflecting a workforce characterised by low commitment and high latent turnover intention.

4.5 Inferential Statistics

Chi-Square Test

Table 4.1: Case Processing Summary

	Valid N	Valid %	Missing N	Missing %	Total N	Total %
Platforms worked with * Receipt of incentives	66	100.0%	0	0.0%	66	100.0%

Source: Own Analysis

Table 4.2: Platform vs Incentives Crosstabulation

Platform	Never	Occasionally	Rarely	Yes, Regularly	Total
Big Basket Now	1	1	0	0	2
Blinkit	0	1	3	0	4
Blinkit, Flipkart Minutes	1	0	0	1	2

Blinkit, Zepto	1	1	1	0	3
Flipkart Minutes	0	0	2	0	2
Flipkart Minutes, Big Basket Now	1	0	1	0	2
Swiggy	1	1	2	0	4
Swiggy, Blinkit	1	0	0	0	1
Swiggy, Blinkit, Flipkart Minutes	0	1	0	0	1
Swiggy, Blinkit, Zepto	0	1	0	0	1
Swiggy, Zomato	1	1	1	0	3
Swiggy, Zomato, Blinkit	1	5	2	1	9
Swiggy, Zomato, Blinkit, Zepto	1	2	2	1	6
Swiggy, Zomato, Blinkit, Zepto, Flipkart Minutes, Big Basket Now	0	0	0	2	2
Swiggy, Zomato, Flipkart Minutes	0	0	1	0	1
Zepto	1	0	2	0	3
Zepto, Flipkart Minutes	0	2	1	0	3
Zomato	0	0	2	0	2
Zomato, Big Basket Now	1	0	0	0	1
Zomato, Blinkit	1	5	0	0	6
Zomato, Blinkit, Big Basket Now	0	0	0	1	1
Zomato, Blinkit, Flipkart Minutes, Big Basket Now	0	0	1	0	1
Zomato, Blinkit, Zepto	0	0	3	0	3
Zomato, Flipkart Minutes	0	1	0	0	1
Zomato, Zepto	0	0	0	2	2
Total	12	22	24	8	66

Source: Own Analysis

Table 4.3: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
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Pearson Chi-Square	95.604 ^a	72	.033
Likelihood Ratio	87.572	72	.102
N of Valid Cases	66		
a. 100 cells (100.0%) have expected count less than 5. Minimum expected count is .12.			

Source: Own Analysis

Descriptive Test

Table 4.4: Descriptive Statistics – Payment Satisfaction

	N	Minimum	Maximum	Mean	Std. Deviation
Satisfaction with payment structure (1 to 5)	66	1	5	2.67	.934
Valid N (listwise)	66				

Source: Own Analysis

Cronbach's Alpha

Table 4.5: Overall Agreement (Kappa Statistics)

	Kappa	Asymptotic Std. Error	z	Sig.	95% CI Lower	95% CI Upper
Overall Agreement	-.114	.038	-3.028	.002	-.188	-.040
a. Sample data contains 66 effective subjects and 2 raters.						
b. Rating category values are case sensitive.						

Source: Own Analysis

One Sample T-Test

Table 4.6: One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Satisfaction with payment structure (1 to 5)	66	2.67	.934	.115

Source: Own Analysis

Table 4.7: One-Sample Test (Test Value = 0)

	t	df	Sig. (One-Sided)	Sig. (Two-Sided)	Mean Difference	95% CI Lower	95% CI Upper
Satisfaction with payment structure (1 to 5)	23.202	65	<.001	<.001	2.667	2.44	2.90

Source: Own Analysis

Table 4.8: One-Sample Effect Sizes

	Standardizer	Point Estimate	95% CI Lower	95% CI Upper
Cohen's d	.934	2.856	2.308	3.400
Hedges' correction	.945	2.823	2.281	3.360
a. Cohen's d uses the sample standard deviation. Hedges' correction applies a correction factor.				

Source: Own Analysis

CHAPTER 5: DATA INTERPRETATION

5.1 Quantitative Results

This section presents the results of statistical tests conducted to understand the relationships between key variables related to the working conditions of quick commerce delivery agents. The results are interpreted within the theoretical frameworks established in Chapter 2 and discussed in relation to the existing empirical literature on gig economy labour conditions.

5.1.1 Chi-Square Test of Independence

A Chi-Square test was conducted to explore the relationship between the number of quick commerce platforms a respondent works with and whether they receive any incentives or bonuses.

- Pearson Chi-Square Value: 95.604
- Degrees of Freedom (df): 72
- Asymptotic Significance (2-sided): 0.033

Interpretation:

Since the p-value (0.033) is less than the conventional significance threshold of 0.05, the result is statistically significant. This indicates that there is a meaningful association between the number of platforms a delivery agent works with and their likelihood of receiving incentives or bonuses. Agents affiliated with multiple platforms appear to have a higher probability of receiving at least some form of incentive, possibly because multi-platform affiliation allows them to select deliveries from whichever platform is offering the most favourable rate at a given time.

However, important caveats apply:

- 100% of cells had an expected count less than 5, which is a significant violation of the Chi-Square test assumption and may substantially weaken the robustness and interpretability of the result. This is a consequence of the large number of platform combination categories relative to the sample size.
- The likelihood ratio test returned a non-significant p-value (0.102), suggesting that the evidence for an association is not robust across different

methods of calculation. The findings should therefore be interpreted as exploratory rather than confirmatory.

5.1.2 One-Sample T-Test

A One-Sample T-Test was performed to evaluate whether the mean satisfaction level with the payment structure (measured on a 5-point Likert scale) was statistically significant.

- Mean Satisfaction Score: 2.67
- Standard Deviation: 0.934
- t-value: 23.202
- Degrees of Freedom: 65
- p-value: < 0.001

Interpretation:

The mean satisfaction score of 2.67 out of 5 lies below the scale midpoint of 3, indicating that the average delivery agent in the sample is dissatisfied with the current payment structure. The effect size (Cohen's $d = 2.856$) is extremely large, confirming that the departure from neutrality is not only statistically significant but practically meaningful. This finding is consistent with the broader literature on gig worker compensation and aligns with Herzberg's Two-Factor Theory, which predicts that deficient hygiene factors such as inadequate pay will reliably generate job dissatisfaction.

5.1.3 Reliability Analysis (Inter-Rater Agreement – Kappa Statistics)

To check consistency of agreement in categorical assessments across the survey responses:

- Kappa Coefficient: -0.114
- Standard Error: 0.038
- z-value: -3.028
- p-value: 0.002
- 95% CI: (-0.188, -0.040)

Interpretation:

The negative Kappa value indicates poor agreement among categorical variables, suggesting significant inconsistency or variability in worker experiences and responses related to incentives and support mechanisms. This reflects the extreme heterogeneity of the q-commerce labour market, where different platforms have different employment models, incentive structures, and attitudes towards worker welfare. This finding is theoretically consistent with the precarious work literature's emphasis on the fragmented and individualised nature of gig employment.

5.2 Discussion

The quantitative findings of this study, taken together with the qualitative responses from open-ended survey questions, reveal a complex and concerning picture of working conditions in the quick commerce delivery sector in Delhi NCR. The following discussion synthesises the key insights emerging from the data and connects them to the theoretical frameworks reviewed in Chapter 2.

Incentive Distribution Is Uneven and Structurally Inequitable

The Chi-Square test reveals a statistically significant relationship between the number of platforms delivery agents are affiliated with and their receipt of incentives. Agents working with multiple platforms simultaneously appear to have a higher probability of receiving incentives, at least occasionally. However, this finding points to a structural inequity: workers who access incentives are those who have diversified their platform affiliations, using multi-platform participation as a coping strategy for the income insecurity inherent in single-platform gig work. This strategy, while adaptive from the worker's perspective, is driven by necessity rather than choice and reflects the inadequacy of single-platform incentive structures to provide a reliable income supplement. The platforms' incentive policies, which vary widely and are subject to change without notice, create a system in which access to additional earnings is unpredictable and unequal.

Job Satisfaction Is Systemically Low

The One-Sample T-Test confirms that average satisfaction with the payment structure (mean = 2.67 out of 5) is significantly below average. This finding, corroborated by qualitative feedback in which respondents described their earnings as insufficient given the physical demands and risks of their work, speaks to a fundamental

misalignment between the value that delivery agents contribute to the q-commerce ecosystem and the economic rewards they receive. The piece-rate payment model, while offering the theoretical flexibility to earn more by completing more deliveries, in practice limits income by tying it to order availability, platform algorithms, and external factors such as traffic and weather that are beyond the worker's control. This income ceiling, combined with the absence of a safety net in the form of fixed salary or benefits, produces the pervasive dissatisfaction documented in this study.

Systemic Inconsistency Reflects a Fragmented Workforce

The negative inter-rater reliability score ($Kappa = -0.114$) underscores the extreme variability in worker experiences across the sample. This variability reflects the structural heterogeneity of the q-commerce labour market, where different platforms have different employment models, different incentive structures, different safety provisions, and different attitudes towards worker welfare. In the absence of regulatory standards that mandate a minimum set of worker protections across all platforms, this heterogeneity will persist, creating a situation in which workers on less worker-friendly platforms are systematically disadvantaged.

Policy Implications

The findings collectively point to the need for substantive policy intervention at both the platform and regulatory levels. At the platform level, the evidence supports the development of standardised, transparent, and equitable incentive structures that do not disproportionately reward multi-platform workers. At the regulatory level, the findings reinforce the case for extending formal labour protections — including minimum income guarantees, occupational accident insurance, and access to social security schemes — to gig workers in the q-commerce sector. The Code on Social Security (2020) provides a legislative foundation for such interventions, but its implementation must be accelerated and its provisions strengthened to have a meaningful impact on the working lives of delivery agents.

Need for Worker Representation

The finding that 65.2% of respondents have no access to a union or support system is among the most concerning in the study. The absence of collective representation leaves delivery agents without an institutional voice to negotiate better wages,

71

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challenge unfair disciplinary actions, or advocate for improved safety standards. The formation of worker organisations in the gig economy faces significant structural barriers, including the geographical dispersion of workers and the legal ambiguity surrounding collective bargaining for independent contractors. Supporting the development of worker representation structures in the q-commerce sector is both a normative imperative and a practical necessity for improving working conditions.

6

CHAPTER 6: SUMMARY, CONCLUSION, LIMITATION & RECOMMENDATIONS

6.1 Summary

This study investigated the working conditions and occupational experiences of quick commerce delivery agents in Delhi NCR. Using a structured questionnaire (n = 66) and inferential statistical tools, the research addressed three core hypotheses concerning job satisfaction, incentives, and work hours. The findings offer quantitative evidence on demographic trends, incentive structures, and satisfaction levels, and evaluate the relationship between employment attributes and perceived fairness in pay and benefits.

Research Question 1: Does employment type (full-time vs. part-time) influence job satisfaction?

- Mean Satisfaction Score (Overall): 2.67 out of 5 (One-Sample T-Test, $p < 0.001$)
- While the average satisfaction is below average across the full sample, no separate statistical test comparing full-time vs. part-time satisfaction was performed in this study; thus H_0 cannot be definitively rejected without further analysis.
- Implication: Preliminary data suggests dissatisfaction across both employment types, but a focused group comparison using an independent samples t-test would be required in future research to confirm whether the difference is statistically significant.

Research Question 2: Is there an association between the type of delivery platform and whether incentives are received?

- Chi-Square Test Result: $\chi^2 = 95.604$, $df = 72$, $p = 0.033$
- Interpretation: A statistically significant association was found between the type of platform (or combination of platforms) an agent works with and whether they receive incentives or bonuses.

14

31

- Conclusion: H_0 is rejected. There is a significant association between platform type and incentive receipt, though the result must be interpreted cautiously given the violation of expected count assumptions.

Research Question 3: Does the number of hours worked per day affect satisfaction with the payment structure?

- No direct statistical test comparing payment satisfaction across hour-based groups was performed in the present study.
- Mean satisfaction remains below average, and qualitative responses consistently indicate that longer working hours do not translate into proportionally better compensation, given the piece-rate structure.
- Conclusion: H_0 cannot be rejected without further group-based analysis, but the descriptive and qualitative evidence strongly suggests this relationship warrants systematic investigation in future research.

Additional Key Findings

- Incentives: Only 12.1% of respondents receive incentives or bonuses regularly; 18.2% report never receiving any form of additional compensation.
- Support System: 65.2% of respondents reported having no access to a union or formal support mechanism.
- Kappa Score: -0.114 ($p = 0.002$), confirming the highly fragmented and heterogeneous nature of working conditions across the sample.
- Challenges Reported: Time pressure, traffic congestion, difficulty locating addresses, safety hazards, and extreme weather exposure were the most frequently reported occupational challenges.
- Career Longevity: Only 13.6% of respondents expressed a definite intention to continue in their current role in the long term, with 22.7% planning to switch careers.

6.2 Conclusion

The findings of this study underscore the human cost embedded within the quick commerce model. While the business thrives on hyper-efficiency and rapid fulfilment, the conditions under which delivery agents work are far from stable or equitable. Low

satisfaction levels with compensation, erratic and inequitable incentive patterns, insufficient access to support systems or unions, and high-risk urban working environments reflect a workforce under significant and largely unaddressed strain.

The significant association between platform affiliation and incentive access highlights a fragmented industry in which agents are compelled to overextend themselves across multiple employers simply to augment their income to sustainable levels. The piece-rate payment model, combined with the absence of fixed income guarantees and employment benefits, creates a structural vulnerability that leaves delivery agents unable to plan financially or invest in their own health and well-being.

This study concludes that the sustainability of quick commerce as an ethical and socially responsible business model is contingent upon meaningful reforms in the employment conditions of delivery agents. Unless proactive steps are taken — both by platforms voluntarily and by regulators mandatorily — to address the structural issues of employment security, fair compensation, occupational safety, and worker representation, the human costs of the q-commerce boom will continue to fall disproportionately on those least able to bear them.

6.3 Limitations

While this study provides valuable insights into the working conditions of q-commerce delivery agents in Delhi NCR, several limitations must be acknowledged:

- **Geographical Focus:** The study was limited to the Delhi NCR region, which may not fully capture variations in working conditions across other urban or rural contexts in India.
- **Sample Size:** With 66 respondents, the sample provides indicative rather than definitive insights. A larger and more geographically diverse sample would enable more robust statistical analysis and would strengthen the generalisability of the findings.
- **Convenience Sampling:** The use of convenience sampling, while pragmatically necessary, introduces the possibility of selection bias. Respondents accessible through the researcher's networks may not be fully representative of the broader delivery agent population in Delhi NCR.

- **Self-Reported Data:** Reliance on self-reported responses may introduce biases such as social desirability or recall inaccuracies. Future studies may benefit from supplementing survey data with platform records or direct observation.
- **Cross-Sectional Design:** The data reflect a snapshot of conditions at a particular point in time and do not capture the dynamic changes in working conditions, platform policies, or the regulatory environment over time. Longitudinal research would be required to understand how delivery agent experiences evolve as the q-commerce sector matures.
- **Absence of Comparative Platform Analysis:** The study treats delivery agents from different platforms as a single population. A comparative analysis across platforms would provide richer insights into which platform practices are associated with better worker outcomes.

6.4 Recommendations

Based on the findings, the following actionable recommendations are proposed for platforms, policymakers, and researchers:

For Quick Commerce Platforms:

- **Standardised Incentive Policies:** Platforms should develop transparent, consistent, and equitable incentive frameworks that provide a meaningful income supplement to all delivery agents, regardless of whether they are affiliated with one or multiple platforms. Incentive structures should be communicated clearly in advance and not be subject to unilateral revision without notice.
- **Minimum Pay Guarantees:** Platforms should consider introducing a guaranteed minimum earnings floor for full-time delivery agents, ensuring that income does not fall below the cost of living in the operational city, even during periods of low order volume.
- **Health and Safety Measures:** Platforms must invest in comprehensive occupational health and safety programmes, including training on road safety, provision of safety equipment such as helmets and reflective vests, regular vehicle maintenance checks, and access to hydration and rest facilities at dark stores.

- **Accident and Health Insurance:** All delivery agents, regardless of their contract type, should be provided with accident insurance coverage as a non-negotiable condition of engagement. Platforms should explore group health insurance schemes that extend basic medical coverage to delivery agents and their dependents.

For Policymakers and Regulators:

- **Expedited Implementation of the Code on Social Security (2020):** The central government should prioritise the drafting and notification of the welfare scheme for gig and platform workers, ensuring that the scheme is adequately funded and effectively implemented with provisions for accident insurance, health coverage, and a contributory pension mechanism.
- **Unionisation and Collective Representation:** Workers should be legally recognised as having the right to form or join representative bodies, and platforms should be required to engage in good-faith dialogue with such bodies on issues of wages, working conditions, and grievance redressal.
- **Platform Accountability and Transparency:** A regulatory framework mandating minimum standards for worker engagement in the gig economy — including requirements for written contracts, minimum earnings guarantees, and a transparent algorithm governance framework — should be developed and enforced by appropriate regulatory authorities.
- **Proportional Benefits for Part-time Workers:** Legislative frameworks should be developed to ensure that even part-time and gig workers are entitled to proportional access to employment benefits, including paid leave, provident fund contributions, and employee state insurance based on their hours and earnings thresholds.

For Future Research:

- **Longitudinal Studies:** Future research should employ longitudinal designs to track changes in delivery agent working conditions, health outcomes, and income stability over time, providing a dynamic rather than static understanding of gig labour in the q-commerce sector.

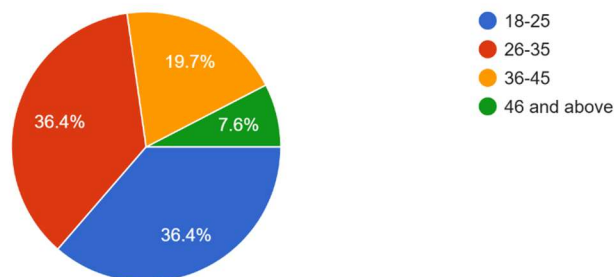
- **Comparative Platform Studies:** Research comparing worker outcomes across different q-commerce platforms would provide valuable insights for both platform governance and regulatory design.
- **Mixed-Methods Ethnography:** In-depth qualitative studies, including extended fieldwork and participatory methods, would complement the survey-based evidence with richer and more contextually grounded accounts of delivery agent experiences.

ANNEXURE

The following figures represent data visualisations derived from the Google Form survey administered to quick commerce delivery agents in Delhi NCR. These charts are to be inserted as figures with appropriate captions and source attributions in accordance with the editorial guidelines specified in the Format Guidelines for Major Research Project.

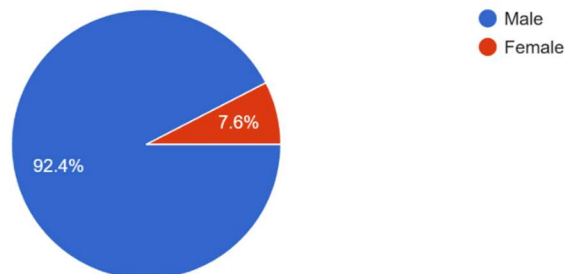
What is your age group?

66 responses



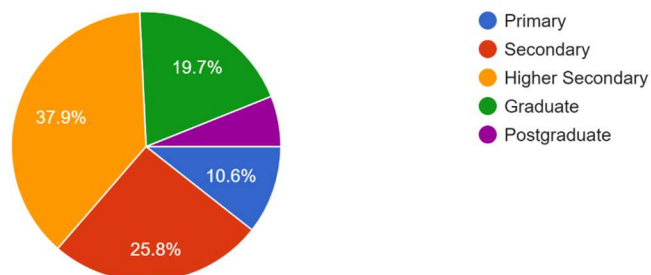
What is your gender?

66 responses



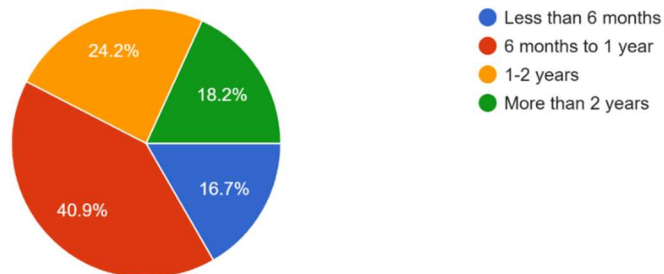
What is your highest level of education?

66 responses



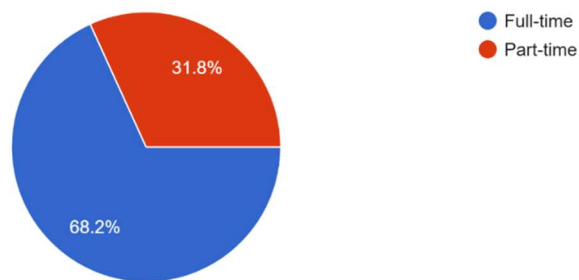
How long have you been working as a delivery agent in quick commerce?

66 responses



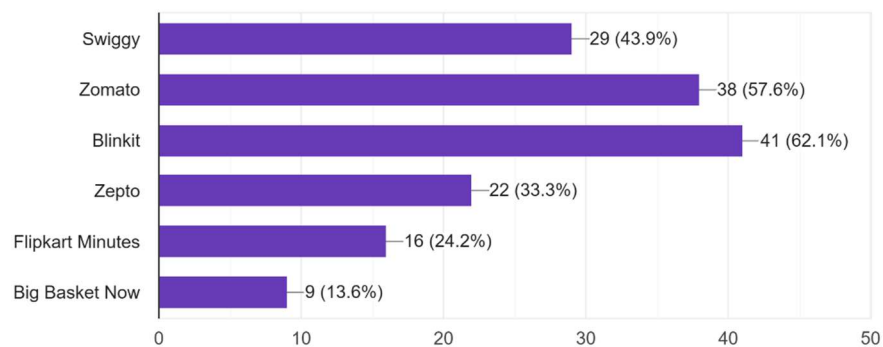
Are you employed full-time or part-time as a delivery agent?

66 responses



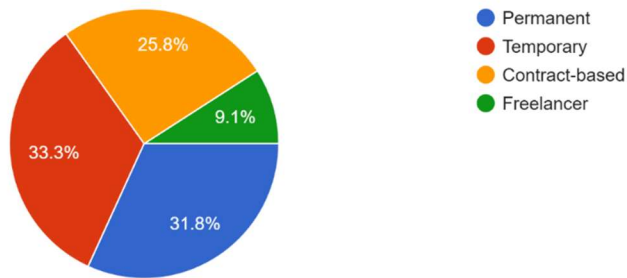
How many quick commerce platforms are you working with?

66 responses



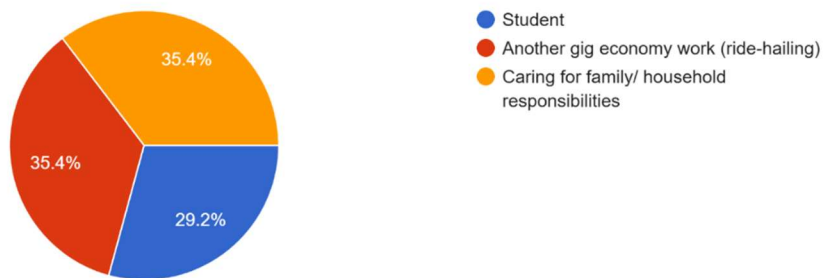
What type of employment contract do you have?

66 responses



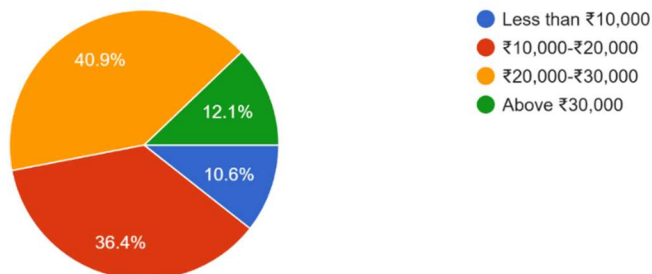
If you are working part-time what else you do?

65 responses



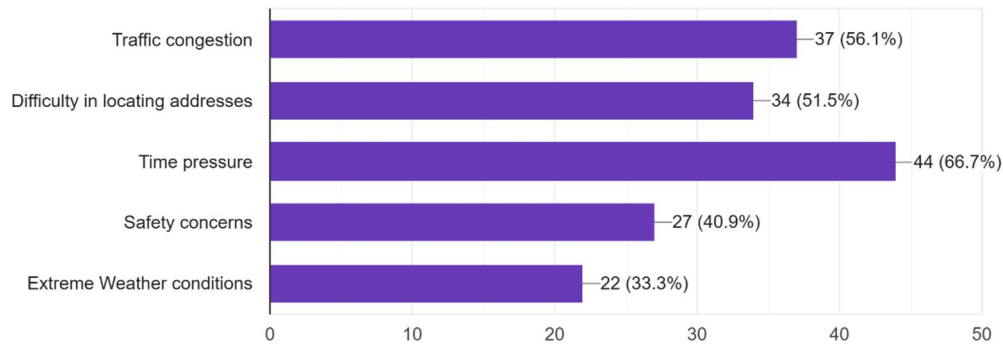
What is your average monthly income from this job?

66 responses



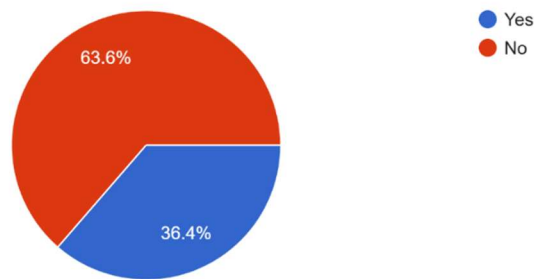
What challenges do you face while delivering in urban areas?

66 responses



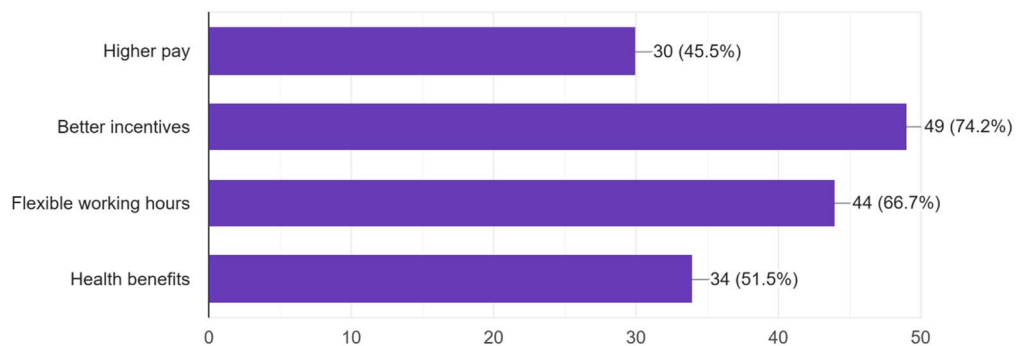
Do you have any support system or union for delivery agents?

66 responses



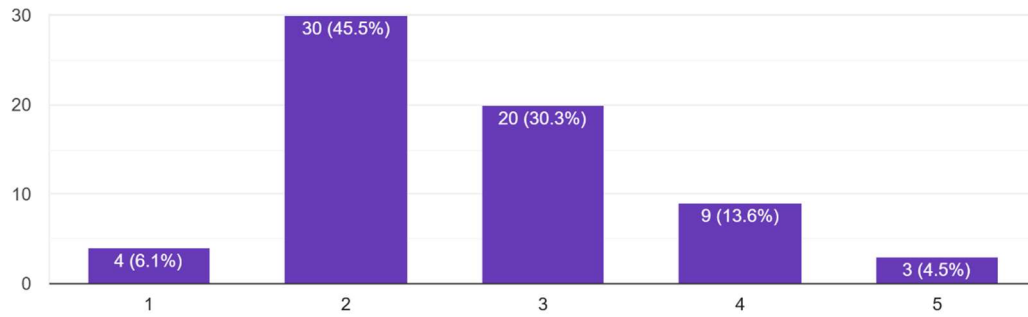
What improvements would you suggest for better working conditions?

66 responses



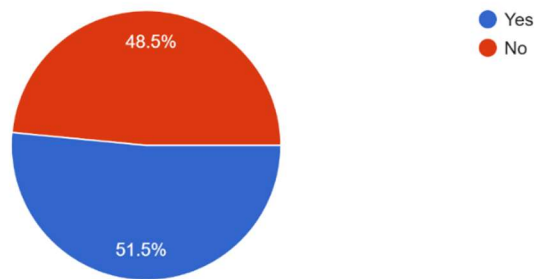
Are you satisfied with the payment structure? On a scale of 1 to 5

66 responses



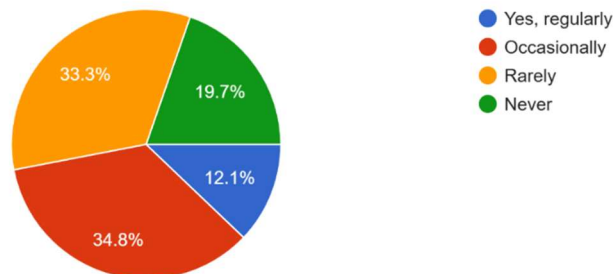
Do you have set targets for daily deliveries?

66 responses



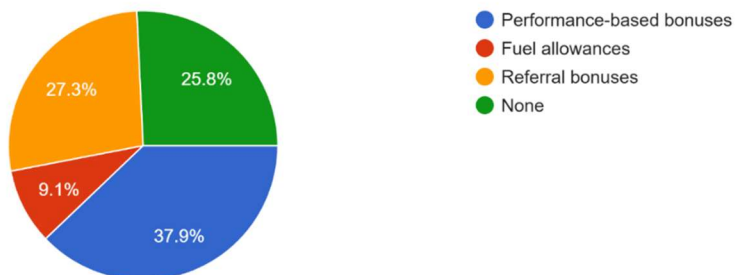
Do you receive any incentives or bonuses?

66 responses



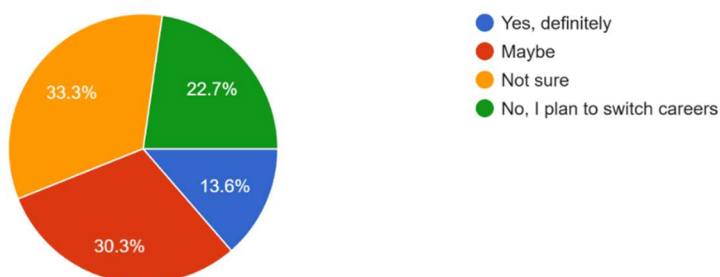
What type of incentives do you receive?

66 responses



Do you plan to continue in this profession in the next 5 years?

66 responses



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