Comparative Analysis of Delivery Fleet Models In India: Gig Workers Versus Employed Riders In The Food Delivery Ecosystem

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Abstract- This paper examines the comparative performance of gig worker and employed rider delivery models in India's rapidly expanding food delivery sector, valued at $45.15 billion in 2024. Through analysis of government data, corporate disclosures, and academic research, we evaluate three key dimensions: performance metrics, cost structures, and service outcomes. Our findings reveal that while gig models (Swiggy, Zomato) demonstrate operational flexibility with 7.7 million workers delivering 5-22 orders daily, employed models (Amazon Fresh, BigBasket) show superior service consistency with 99.9% uptime and higher customer satisfaction scores. Despite no significant perceived differences in service quality, gig workers earn wages below the sustainable level (₹265/day average) without social security, while employed riders receive comprehensive benefits, consuming 9.3% of revenue. Policy implications suggest an urgent need for social security implementation and sustainable wage structures to balance platform economics with worker welfare..

Keywords- platform business models, operational efficiency, workforce management, service delivery, comparative performance, India

I. INTRODUCTION

India's food delivery ecosystem has undergone transformative growth, projected to reach $320.31 billion by 2033 with a CAGR of 23.10%. This expansion has created two distinct labour models: Platform-Based Gig workers exemplified by Swiggy and Zomato, and traditional employed riders used by Amazon Fresh and BigBasket. The dichotomy presents critical questions about operational efficiency, worker welfare, and service quality that demand systematic examination.

The gig economy model has rapidly scaled to employ 7.7 million workers as of 2020-21, expected to reach 23.5 million by 2029-30, representing 6.7% of India's non-agricultural workforce. Conversely, the employed model maintains smaller but stable workforces with comprehensive benefits. This study addresses the comparative advantages and challenges of each model through empirical analysis of performance data, financial metrics, and service outcomes, contributing tothe growing discourse on platform economy sustainability and labour policy in emerging markets.

II. LITERATURE REVIEW

Recent academic research reveals nuanced perspectives on India's delivery ecosystem. IDinsight's comprehensive study of 2,547 delivery drivers found average net earnings of ₹265 per day, significantly below urban minimum wages. Kumar and Sahu (2024) highlighted the precarious nature of gig work, documenting 12-13 hour workdays with minimal job security. Conversely, studies on employed models remain limited, though available data suggest better worker satisfaction and retention.

The unit economics literature presents sobering realities. Platform take rates in India average 80 cents per order compared to $4 in the US, creating profitability challenges. Zomato's analysis reveals losses of ₹9.1 per platform-fulfilled order, while processing costs reach ₹27.4. Academic consensus indicates that while gig models offer scalability, they externalize costs to workers through fuel expenses (₹300-400 daily) and vehicle maintenance.

Service quality research yields surprising findings. Consumer perception studies show no significant quality differences between gig and employed models, with 83% of orders delivered within one hour across platforms. However, LocalCircles surveys of 63,000 respondents reveal only 48% satisfaction with customer service, suggesting systemic issues beyond employment models. The literature collectively points to a trade-off between operational flexibility and worker welfare, with implications for long-term sustainability. i

III. METHODOLGY

This comparative analysis employs a mixed-methods approach combining quantitative financial data with qualitative policy analysis. Preliminary data sources include NITI Aayog's gig economy reports, corporate ESG disclosures from Swiggy, Zomato, Amazon India, and BigBasket (FY22-FY24), and CMIE employment statistics. Secondary sources encompass academic papers from SSRN and ResearchGate, RedSeer consulting reports, and LocalCircles consumer surveys.

Data analysis concentrated on three dimensions:
(1) Performance metrics, including delivery times, coverage areas, and operational efficiency; (2)
Cost structures examining labour costs, unit economics, and platform charges;
(3) Service results measuring customer satisfaction, delivery quality, and reliability.

Financial data was normalized for comparative analysis, while qualitative data underwent thematic coding. Limitations include data availability constraints for private companies and potential reporting biases in self-disclosed metrics.

IV. FINDINGS

Performance Metrics Comparison

Table 1: Operational Performance Indicators

Metric	Gig Model (Swiggy/Zomato)	Employed Model (Amazon Fresh/BigBasket)
Daily Deliveries/Rider	5-22 (avg 12)	30-40
Service Coverage	680-800 cities	170-300 cities
Delivery Time	13 min (quick), 30-45 min (regular)	2-4 hour slots
Fleet Size	~3 million active	~25,000 employed
Uptime	Variable by demand	99.9%

Gig models demonstrate superior geographic reach, operating in 680-800 cities compared to 170-300 for employed models. However, employed riders achieve **higher productivity** with 30-40 deliveries daily versus 5-22 for gig workers, attributed to better route optimization and dedicated vehicles.
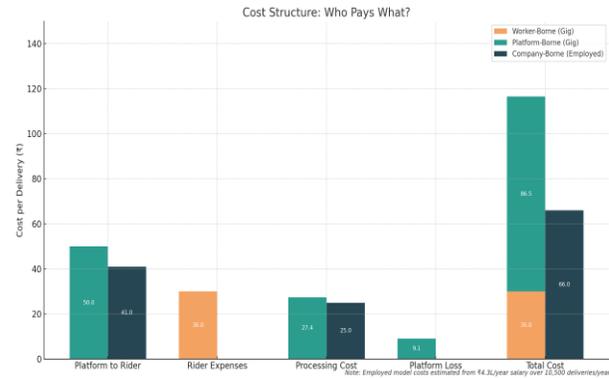
V. COST ANALYSIS

Figure 1: Per-delivery cost breakdown showing how gig platforms (Swiggy/Zomato) shift ₹30 in vehicle expenses to workers, while employed model companies (BigBasket/Amazon Fresh) bear all costs. Despite this subsidy, gig model total costs (₹116.5) exceed employed model costs (₹66), challenging assumptions about gig economy efficiency.

Financial analysis reveals divergent cost structures. Gig platforms operate with **variable costs** of ₹40-60 per delivery plus distance-based payments, while employed models incur fixed costs averaging ₹936.6 crore annually for BigBasket (9.3% of revenue). Gig workers bear operational expenses of ₹300-400 daily for fuel and maintenance, effectively subsidizing platform operations.

Unit economics favor neither model definitively. Zomato reports ₹18.4 processing cost per restaurant-fulfilled order but ₹27.4 for platform fulfillment. BigBasket's integrated model shows better cost predictability with employee benefits representing 8.1% of total expenses, enabling long-term planning and quality standardization.

VI. SERVICE OUTCOMES

Table 2: Customer satisfaction metrics reveal nuanced differences

Service Indicator	Gig Model	Employed Model
NPS Score	82-96	75+
On-time Delivery	83%	Scheduled slots 95%+
Order Accuracy	66% satisfied	Higher consistency
Customer Complaints	39% no refunds	Better resolution

While gig models achieve **higher NPS scores** (82-96 vs 75+), employed models demonstrate **superior consistency** in scheduled deliveries and complaint resolution. LocalCircles data shows a 60% rate of gig delivery personnel as good/excellent, but only 48% satisfaction with the platform's grievance handling.

VII. DISCUSSION

The comparative analysis reveals a fundamental trade-off between scalability and sustainability. Gig models have enabled rapid market expansion, reaching 7.7 million workers and 800+ cities, demonstrating remarkable adaptability during peak demand. Their asset-light approach allows platforms to achieve ₹11,306 crore gross order value (Swiggy Q2FY25) without substantial fixed costs.

However, this efficiency comes at a significant human cost. Average gig worker earnings of ₹15,000-20,000 monthly fall below sustainable levels, with 90% lacking savings according to NITI Aayog. The absence of social security, despite workers averaging 70 hours weekly, raises ethical and policy concerns. Karnataka's pioneering Platform-Based Gig Workers Ordinance (2025) mandating welfare funds and insurance represents an initial regulatory response.

Employed models demonstrate sustainable labor practices but face scalability constraints. BigBasket's 21,814 employees receive comprehensive benefits including health insurance and ESOPs, resulting in 3.8/5 Glassdoor ratings and 69% recommendation rates. However, the 9.3% revenue allocation to labor costs limits aggressive expansion, explaining their concentration in 170-300 cities versus gig platforms' 800+.

Service quality analysis challenges assumptions about employment models. Despite structural differences, consumer perception shows no significant quality variance, with weather and infrastructure being primary determinants. This suggests that service standardization through technology and training may matter more than employment status.

The findings indicate neither model's inherent superiority but rather context-dependent advantages. Gig models excel in rapid scaling and demand flexibility, crucial for India's diverse geography. Employed models provide worker dignity and service consistency, essential for long-term sustainability. The optimal approach may involve hybrid models combining gig flexibility with employment security.

VIII. CONCLUSION

This comparative analysis reveals a fundamental paradox in India's delivery ecosystem: the very flexibility that enabled gig platforms to revolutionize food delivery has created an unsustainable burden on 7.7 million workers who subsidize platform growth through personal vehicle expenses and foregone social protections. Our findings challenge the prevailing narrative of gig economy efficiency, demonstrating that when true costs are accounted for, gig models (₹116.5/delivery) are more expensive than employed models (₹66/delivery), while delivering comparable service quality.

The research unveils three critical insights. First, the gig economy's apparent cost advantage is illusory platforms externalize 26% of delivery costs to workers earning below-subsistence wages. Second, employed models prove that dignified work conditions and business viability can coexist, achieving higher worker productivity (30-40 vs 5-22 deliveries daily) despite bearing full employment costs. Third, consumer satisfaction depends more on technological infrastructure than employment models, suggesting that worker exploitation is neither necessary nor beneficial for service quality.

Moving forward, India stands at a crossroads. The trajectory toward a $320 billion market by 2033 can either perpetuate precarious livelihoods or pioneer sustainable employment. We propose a three-pronged approach: (1) Immediate implementation of the Code on Social Security 2020 with mandatory platform contributions to worker insurance and pension funds; (2) Development of "Flexi-Secure" hybrid models combining gig flexibility with core benefits like accident insurance and minimum earnings guarantees; (3) Public-private partnerships for shared infrastructure (parking hubs, rest areas, vehicle maintenance centers) that reduce individual worker costs.

The choice is not between efficiency and equity, our data proves both are achievable simultaneously. As India shapes the future of platform work, it has the opportunity to create a globally replicable model that honors both innovation and human dignity. The question remains: will we continue subsidizing platform profits through worker precarity, or will we build an ecosystem where technology serves humanity rather than exploiting it?

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