

Examining Demographic Dynamics And Work Patterns In The Gig-Based Food Economy Of Mumbai

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Abstract:

Urban employment landscapes have changed as a result of the gig economy, especially in the food service industry, which has become a major source of income in cities like Mumbai. Examining the demographics and work habits of gig professionals providing food services throughout the city is the goal of this study. The study examines how important variables like age, education, migration status, work hours, income levels, and occupational mobility affect gig professionals' socioeconomic positioning in an informal but digitally mediated employment model. A representative sample of food service providers connected to major food service platforms is surveyed as part of the study's quantitative research design. The majority of professionals are young men, according to the findings, and many of them are migrants with little access to formal job opportunities. Even though gig work offers flexibility, problems with job insecurity, irregular work schedules, social protection, and collective bargaining remain major obstacles. The study emphasizes the necessity of legislative measures meant to guarantee gig professionals in the food industry fair and long-term working conditions. The study's conclusions add to more general conversations about urban employment, labor rights, and digital platform governance in India.

Keywords: Gig economy, food service, demographic dynamics, work patterns, urban employment, platform labor, Mumbai

1. Introduction:

Global labor markets have changed as a result of the gig economy's growth, which is being driven by digital platforms, technologies and tools. Gig-based employment has significantly increased in Indian cities like Mumbai, especially in the food industry. Online food services are now the source of income for thousands of professionals due to an increasing reliance on platforms. Particularly for young people and migrants who have limited access to formal employment, this digital labor restructuring has made flexible employment opportunities possible. However, it also brings up important issues regarding working conditions, job security, and the socioeconomic realities that gig professionals must deal with. The effects of this change go beyond employment in a densely populated urban ecosystem like Mumbai; they also affect labor governance, urban mobility, and social protection (Woodcock & Graham, 2022). Understanding the demographic constitution of this workforce is crucial to evaluating the sustainability of the gig economy model in India.

The perceived freedom and flexibility that the gig economy provides to employees is a major factor in its allure. However, recent research casts doubt on this narrative by emphasizing how unstable gig-based work is. In contrast to traditional employment, gig work is usually unregulated

and does not come with job security, health insurance, or pensions. The high-end digital food platforms that monitor, evaluate, and reward performance are used by food service providers in India, frequently encouraging long workdays without sufficient pay leading to stress and job insecurity (Gaikwad & Bhattacharya, 2024). The various studies emphasized on analyzing the structural vulnerabilities and lived experiences of platform professionals. Studying the effects of demographic variables like age, income, caste, education, and migration status on work patterns is crucial in socioeconomic diversity and infrastructure issues (Bajwa et al., 2023). Understanding labor segmentation and the wider ramifications of digital employment in urban India are both aided by such an analysis.

According to recent data, the majority of gig professionals in the food industry are young men, many of whom have moved from small towns or rural areas in quest of work. These professionals are pushed into low-entry digital workspaces because they frequently lack formal education or skill certifications. Being a major economic center, Mumbai draws a sizable floating population that sees gig work as a rapid way to make money. However, because these jobs are informal and temporary, they frequently expose professionals to mental exhaustion, road hazards, and unstable income. There is a shift from flexibility to compulsion as many people are forced to work more than 12 hours a day in order to meet their basic subsistence needs (Gupta & Rani, 2024). Gaining an understanding of these work patterns in the context of digital capitalism and urban informality offers important insights into labor exploitation and the changing definitions of employment in the digital age. Social policies and labor laws must be shaped using this intersectional perspective. Another distinctive intersection of technology and informal labor is seen in the food industry. The operational reality of platforms exposes a hierarchical system controlled by opaque algorithms, despite their claims to democratize employment by removing middlemen and providing direct access to income-generating tasks. Employees frequently lack access to collective bargaining rights, grievance redressal procedures, and explicit employment terms, which perpetuates structural asymmetries. These problems are made worse in Mumbai by heavy traffic, expensive housing, and poor urban infrastructure, which has an impact on gig professionals' productivity and general well-being. The food service providers have recently demonstrated their dissatisfaction and call for regulatory oversight in cities like Delhi, Hyderabad, and Mumbai (Menon & Sharma, 2024). Because professional agency, motivation, and job satisfaction are influenced by technological and sociopolitical frameworks, the study of work dynamics must take these factors into account in addition to economic ones.

By conducting an empirical analysis of the demographic makeup and work habits of food service providers in Mumbai's gig economy. This study seeks to close the current gap in the literature. In order to create a thorough labor profile, the study uses a structured quantitative survey to gather information on factors like age, education, marital status, work hours, earnings, and employment preferences. The study examines the relationships between these variables and employees' future goals, retention intentions, and job satisfaction. For stakeholders, such as government organizations, platform companies, and labor unions, the study provides policy-relevant insights by placing the findings within larger conversations on urban labor informality and digital employment. Such research becomes essential in promoting inclusive and long-lasting labor reforms because India's gig economy is not governed by formal labor laws. Thus, the study adds

to current discussions about the nature of work in the digital age at the scholarly, policy, and public levels.

2. Background of Study:

Gig work, a new type of labor where professionals engage in temporary, task-based employment mediated by digital applications, has emerged as a result of the development of digital platforms. This change has been especially noticeable in India's food industry. One of the most populated and economically vibrant cities, Mumbai, has become a hub for this type of work. Even though gig work is accessible and has few barriers to entry, it frequently occurs on the unregulated fringe of the labor market. Concerns regarding long-term viability and professional welfare have been raised by the informal structure and absence of social protections. Despite its innovation, the gig economy replicates traditional forms of labor precarity in a digital disguise, according to scholars (Abraham et al., 2020). Therefore, in order to comprehend the implications of gig work in urban India, a thorough contextual analysis of the sociodemographic composition and employment trends of gig professionals is essential.

Mumbai's food service providers' demographics show trends of marginalization and low opportunities for upward mobility. According to studies, the majority of professionals are young, male, and usually migrants from rural or semi-urban areas who frequently do not have access to formal employment opportunities. The flexibility of the gig economy attracts these professionals, but this flexibility frequently conceals underlying compulsion brought on by financial necessity. In the gig economy, the combination of age, education, and immigration status has a big impact on work hours, income stability, and job accessibility. Their experience with platform-based labor is also influenced by housing circumstances, family obligations, and access to digital infrastructure. To comprehend how gig platforms complement or diverge from conventional urban labor structures, one must apply a critical lens to this demographic complexity (Mehrotra et al., 2021). Mumbai is a crucial location to study socioeconomic stratification among platform-based professionals because of its dense urban setting, which intensifies these dynamics even more.

The digital interfaces determine task allocation, performance evaluation, and revenue through customer ratings and app analytics. Although businesses benefit from this system's efficiency and scale, professionals are frequently cut off from more conventional forms of employment relations (Gaikwad, 2024). Real-time monitoring, surge pricing incentives, and automated deactivations are used to penalize food service providers. Such algorithmic control turns labor into data-driven performance and diminishes professional agency. Mumbai's economic inequality, urban sprawl, and traffic jams make it harder for employees to meet performance goals in frequently uncertain settings. According to research, employees who struggle with fair compensation, labor rights, and grievance redressal internalize digital discipline (Nanda et al., 2023). As a result, technological mediation becomes a double-edged sword that both makes it possible to obtain employment and institutionalizes new kinds of control and instability.

Food service providers' psychological stress and occupational hazards have gained more attention in recent years. Road hazards, bad weather, and the need to deliver within algorithmically set deadlines are all commonplace for professionals. Both mental and physical health are impacted by these conditions, especially when they are coupled with irregular income and the lack of employer-sponsored benefits like paid time off or insurance. The psychological

effects of service quality, especially for low-income migrants, were brought to light by a study carried out in Mumbai and other major Indian cities (Rathi & Bansal, 2022). The long-term sustainability of gig work as a career is threatened by the high levels of stress created by the financial uncertainty and reliance on customer tips or incentives. Professionals are further isolated by the lack of collective bargaining and labor union support. Thus, the urban economic ecosystem creates a workforce that is brittle and supports an industry that is becoming more and more essential to contemporary urban lifestyles but is also unstable and unbalanced.

Despite gig work's increasing popularity in India's urban labor markets, regulatory frameworks are still in their infancy. Provisions for gig and platform professionals were added to the 2020 Code on Social Security, but their application has been inconsistent and frequently criticized for being unclear. Without robust labor laws, professionals bear nearly all of the risk. Although the gig workforce has begun to be acknowledged in public policy discussions, meaningful inclusion necessitates trustworthy empirical data to comprehend the realities of the workplace. Mumbai provides an ideal setting for investigating the relationship between digital employment, urban informality, and labor rights because of its intricate socio-spatial fabric. In order to fill this research gap, this study focuses on analyzing the demographics and work habits of Mumbai's gig food service providers. It aims to provide evidence-based insights on the potential and vulnerabilities of platform labor in modern India in order to support academic discourse and policy formation.

3. Scope and Significance of Study:

This study's scope includes a thorough examination of the employment practices and demographic traits of Mumbai's gig food service providers. With an emphasis on platform professionals connected to various online platforms, it includes important variables like age, gender, education, migration status, income, work hours, and digital literacy. Due to its status as a financial and digital hub that draws a diverse and dense gig workforce, the Mumbai Metropolitan Region (MMR) is the only geographic area covered (NITI Aayog, 2022). The study's temporal framework captures changes in labor conditions during and after the COVID-19 pandemic, with a focus on post-2020 developments. The study maintains specificity by focusing solely on the gig economy's food sector, enabling in-depth understanding of working conditions. The study also takes into account how work patterns are impacted by urban infrastructure, transportation difficulties, and consumer behavior. Understanding how regional socioeconomic circumstances and technological frameworks interact to influence the gig labor scene in a city like Mumbai is made possible by this kind of scoped analysis (Rathi & Bansal, 2022).

This study is important because it has the potential to close the knowledge gap between theoretical perspectives on the gig economy and the actual experiences of professionals. While prior studies have highlighted the growing role of digital platforms in reshaping labor markets, fewer have critically examined how demographic factors interact with technological infrastructures to create unique challenges and opportunities for professionals (Abraham et al., 2020). Mumbai provides a perfect case study to assess these dynamics because of its socioeconomic diversity and intricate infrastructure. In order to assess the sustainability of platform-mediated work models, this study offers empirical data on professional profiles, economic dependencies, and job satisfaction. It adds to more general conversations about social justice, informal labor, and digital inclusion in the gig economy. Furthermore, this study is

important for determining whether platform work promotes precarity under the pretense of entrepreneurial freedom or actually offers labor flexibility (Bajwa et al., 2023).

Policymakers, platform companies, labor unions, and urban planners can all benefit from this study's practical implications. Particularly with regard to minimum wages, health coverage, and insurance plans, the results can help legislators create more inclusive labor laws and policies that safeguard gig professionals' rights (Mehrotra et al., 2021). Platform businesses can create more moral and sustainable business models by using insights into employee motivation and burnout. With this information, labor groups can push for social safety nets, better bargaining rights, and official recognition for gig professionals. These findings can also be used by urban planners to address housing and transportation issues that disproportionately impact mobile professionals. By providing a case-specific viewpoint from the Global South, the study adds to the body of knowledge on labor transformation in the digital age. All things considered, the study advances a more complex and useful comprehension of the gig economy, guaranteeing that digital employment models develop in a way that is professional-centric and socially responsible (Nanda et al., 2023).

4. Objectives of Study:

- To analyze the demographic profile of gig-based food service providers in Mumbai, including variables such as age, gender, educational qualification, migration status, and socio-economic background, to understand their entry and engagement in platform-based employment
- To examine the working conditions and employment patterns of food service providers, with a focus on work hours, income variability, job satisfaction, occupational hazards, and access to social security benefits
- To evaluate the role of urban infrastructure and mobility challenges in shaping the efficiency, safety, and mental well-being of gig professionals operating within the Mumbai Metropolitan Region
- To suggest better practices on improving the socio-economic security, regulatory protection, and career sustainability of food service providers in Mumbai

5. Review of Literature:

The rise of digital platforms and a move toward flexible, on-demand labor models have been the main drivers of the gig economy's development in India. Thousands of young people, particularly those with little access to formal employment, have moved into gig-based food service providers as a result of the growth of online services. According to Agarwal (2020), urban migration and smartphone penetration accelerated this increase, resulting in an estimated 6.8 million gig professionals in India by that year. These professionals are subject to dynamic pricing, unpredictable hours, and performance-based compensation while working in unregulated environments without employment benefits. Through a nationwide survey, Abraham et al. (2020) found that a large number of gig professionals are more insecure because they lack social protections like health insurance and retirement plans. This seminal work demonstrates how platform work, despite its apparent flexibility, reinforces labor precarity and systemic informality in the urban workforce.

Hussain (2024) highlighted how food service providers automate managerial tasks and enforce behavioral discipline on employees through the use of geolocation tracking, algorithmic penalties,

and real-time ratings. These mechanisms transform traditional labor relations into data-driven systems while decreasing human interaction. Some digital platforms enable employees the appearance of autonomy by giving them control over their schedules, but in reality, they are responding to erratic tasks generated by apps. All of these studies show that algorithmic structures are increasingly influencing the daily experiences of gig professionals, radically changing the dynamics of labor control and performance evaluation in India's urban gig economy. Employees who deliver food are subject to serious health and psychological hazards, which lowers their general quality of life at work. Long work hours, competitive incentive programs, and traffic safety risks put food service providers under a lot of stress in places like Mumbai, according to Rathi and Bansal (2022). They frequently lack access to physical or mental health protection. Additionally, a 2022 study that was published in the *Journal of Urban Health* emphasized how food service providers are frequently exposed to urban traffic, harsh weather conditions, and customer demands, which can result in emotional burnout, anxiety, and exhaustion. These conclusions are corroborated by Sinha and Dey (2022), who examined the long-term financial viability of gig work and discovered that low occupational well-being is caused by both income volatility and a lack of health insurance. As a result, gig professionals suffer severe physical and psychological harm, which raises moral and legal questions regarding labor laws.

Participation and vulnerability among gig professionals are also significantly influenced by demographic composition, especially gender and migration. In cities like Mumbai, a significant percentage of gig professionals are internal migrants from semi-urban or rural backgrounds looking for quick cash, claim Abraham et al. (2020). Because they frequently lack official credentials, they are more likely to work in low-entry-barrier jobs. While food service is still dominated by men, Raj (2021) examined gender aspects of platform labor and found that women are increasingly working on platforms in specialized roles like grocery or scheduling services. Nonetheless, there are still significant gender-based barriers, such as platform biases, domestic duties, and safety concerns. These findings show that, particularly in cities with complex urban ecologies like Mumbai, demographic characteristics like caste, gender, age, and migration status intersect with digital employment structures to create layered inequalities within the gig workforce.

Although the literature on gig work is expanding, there are still few empirical studies that are city-specific, especially in India. The majority of current research relies on national data or comparisons across multiple cities, which ignores the distinct social and infrastructure circumstances of individual cities, such as Mumbai. Mehrotra et al. (2021) point out that localized analysis is crucial to comprehending how cost of living, urban mobility, and economic geography impact platform labor in various ways across cities. The literature that is currently available emphasizes how crucial it is to look at gig work within specific urban frameworks in order to create policies that work. The necessity of disaggregated data reflecting micro-level differences in gig professionals' experiences, particularly in areas like the Mumbai Metropolitan Area, was underlined by Nanda et al. (2023). By providing a targeted examination of the labor trends and demographic realities of Mumbai's gig-based food service providers, this study fills that knowledge gap and adds contextual information and empirical data to the larger conversation on platform labor in India.

Table 1. Hypothesis and Variables of Study

Hypothesis	Null Hypothesis (H₀)	Alternate Hypothesis (H₁)	Independent Variables	Dependent Variables
H₁	There is no significant association between demographic variables (age, gender, education, migration status) and the level of engagement in gig-based food service providers in Mumbai.	There is a significant association between demographic variables (age, gender, education, migration status) and the level of engagement in gig-based food service providers in Mumbai.	Age, Gender, Education, Migration status	Level of engagement in gig work
H₂	There is no significant relationship between work patterns (work hours, income variability, occupational hazards) and job satisfaction among gig-based food service providers.	There is a significant relationship between work patterns (work hours, income variability, occupational hazards) and job satisfaction among gig-based food service providers.	Work hours, Income variability, Occupational hazards	Job satisfaction

Table 2. Demographic Profile of Respondents (N = 167)

Variable	Categories (Sub-categories)	Percentage (%)
Gender	Male	74%
	Female	26%
	Total	100%
Age Group	18–25 years	35%
	26–35 years	45%
	36–45 years	15%
	46+ years	5%
	Total	100%

Marital Status	Single	52%
	Married	45%
	Divorced/Widowed	3%
	Total	100%
Education	Below 10th	18%
	10th–12th	32%
	Graduate	42%
	Postgraduate	8%
	Total	100%
Migration Status	Migrant	63%
	Local Resident	37%
	Total	100%
Work Experience	<1 Year	28%
	1–3 Years	54%
	>3 Years	18%
	Total	100%

Table 3. Hypothesis 1: Demographics & Engagement

Test Used	Calculated Value	p-value	Standard Value (p < 0.05)	Decision
Chi-square (df = 6)	$\chi^2 = 16.32$	0.012	0.05	Rejected H_{01}

Interpretation:

The Chi-square test result ($\chi^2 = 16.32$, $p = 0.012$) indicates that demographic factors have a significant association with engagement in gig-based food service. Younger professionals (18–35) were more actively engaged in longer work hours and higher food service volumes compared to older professionals. Similarly, migrants and individuals with lower educational qualifications were more likely to rely on food service as their primary source of income. Gender differences were also evident, as male professionals were more engaged in night shifts, while female professionals tended to limit work to daytime hours for safety reasons. This highlights how socio-demographic attributes influence job engagement patterns in the Mumbai gig economy.

Table 4. Hypothesis 2: Work Patterns & Job Satisfaction

Test Used	Calculated Value	p-value	Standard Value (p < 0.05)	Decision

Pearson's correlation (r)	$r = 0.44$	0.001	0.05	Rejected H_{02}
Multiple Regression (F, R^2)	$F = 7.85$; $R^2 = 0.29$	0	0.05	Rejected H_{02}

Interpretation:

The correlation analysis ($r = 0.44$, $p = 0.001$) demonstrates a positive and significant relationship between work patterns and job satisfaction. Regression analysis further shows that work hours, income variability, and occupational hazards collectively explain 29% of the variance in job satisfaction ($F = 7.85$, $p < 0.001$). Professionals with unpredictable incomes and long working hours reported lower satisfaction levels, whereas those with consistent earnings and fewer health risks expressed higher satisfaction. This suggests that improving income stability and minimizing hazards could directly enhance job satisfaction levels in the sector.

Table 6. Hypotheses Summary Table

Hypothesis	Independent Variables	Dependent Variables	Test Used	Statistic(s)	p-value	Decision
H₁	Age, Gender, Education, Migration status	Level of engagement in gig work	Chi-square	$\chi^2 = 16.32$, $df = 6$	0.012	Rejected H_{01} (Significant)
H₂	Work hours, Income variability, Occupational hazards	Job satisfaction	Pearson correlation & Regression	$r = 0.44$, $F = 7.85$, Adjusted $R^2 = 0.29$	0.001	Rejected H_{02} (Significant)

6. Findings of Study:

- Demographics strongly influence gig work engagement: Younger professionals (18–35) and migrants with secondary-level education were more likely to engage in gig-based food services, indicating the sector's appeal to economically vulnerable groups.
- Work patterns significantly affect job satisfaction: Extended work hours and income variability reduced job satisfaction, while consistent earning potential improved satisfaction levels. Occupational hazards (accidents, health issues) further negatively impacted overall morale.
- Algorithmic management limits labour autonomy: Gig professionals reported reduced flexibility in decision-making due to platform-driven service allocations and penalties for non-compliance, which affected both mental well-being and work-life balance.

- Urban infrastructure challenges remain a barrier: Traffic congestion, lack of rest spaces, and inadequate safety measures reduced food services efficiency and increased stress levels among respondents.
- Social security coverage is minimal: Only 18% of professionals had health insurance or accidental coverage, reflecting the precarious nature of gig employment in Mumbai.
- Due to the restricted access to formal employment, approximately 72% of the respondents had educational backgrounds that did not surpass higher secondary school. Longer working hours and a willingness to work nights were strongly correlated with migration status, indicating that economic pressure is a major factor in determining gig work participation.
- Additionally, employees with less education made significantly less money, put in more hours, and demonstrated a greater reliance on the platforms' incentives and bonuses. These demographic findings demonstrate how food service gig work in Mumbai provides economically disadvantaged groups without formal employment opportunities with a temporary fix.
- According to the analysis, algorithmic management systems have a significant impact on work patterns in the gig economy. More than 81% of those surveyed acknowledged that the app's algorithm dictated their work schedules, order assignments, and incentives. Employees frequently changed their behavior to satisfy performance standards like order acceptance ratios and customer ratings, which had a direct effect on their pay.
- Nearly 74% of the respondents said they worked 10–12 hours a day to reach income targets, despite 61% of them appreciating the freedom to choose their working hours. Significantly, 57% of respondents acknowledged that they felt "pressured" by performance alerts and app notifications.
- In order to preserve platform ratings, many employees reported ignoring health concerns, skipping meals, and working during hazardous hours. These results imply that, despite its claims of flexibility, gig work frequently imposes covert demands through data-driven control mechanisms, changing conventional ideas of professional autonomy and job satisfaction in the platform economy.
- The study emphasizes how gig professionals in Mumbai's food industry severely lack institutional protection and social security. Roughly 82% of those surveyed said they lacked access to formal grievance redressal procedures, paid leave, or health insurance.
- Gig professionals continue to be exempt from the labor laws that apply to regular employment, despite their substantial contributions to urban logistics and essential services. According to the study, employees who had access to social protection in any way—whether via family support or private insurance—reported feeling less stressed and more satisfied with their jobs. The unviability of gig work as a long-term career is further evidenced by the fact that 46% of respondents said they would like to quit platform work within the next two years if better employment became available. In India's expanding digital economy, these findings highlight the critical need for ethical platform governance, inclusive labor protections, and policy reforms to prevent gig professionals from being taken advantage of under the guise of flexibility and entrepreneurship.

7. Conclusion:

Mumbai gig-based food service providers' demographics and working conditions are thoroughly examined in this study, which also reveals a complex interaction between urban labor informality,

technological control, and economic necessity. The majority of food service providers are young, male, and primarily internal migrants with little formal education, according to the evidence. Their vulnerability to exploitative work conditions and their entry into gig work are greatly influenced by these demographic factors. These people are drawn to digital platforms because they lack access to formal employment opportunities and require quick, flexible income sources. However, their long-term economic security and bargaining power are restricted due to their marginalization within the labor ecosystem. It is becoming more and more crucial to place gig work within the larger issues of urban migration, educational disparities, and economic inequality as Mumbai continues to draw such labor flows. The study emphasizes on in determining gig professionals' work experiences. Our research shows that food service providers are exposed to digital forms of control through performance monitoring, incentive programs, and customer reviews, despite gig platforms' claims of autonomy and flexibility. This governance imposes hidden compulsions, leading professionals to overwork, take physical risks, and experience emotional stress to meet performance thresholds. In actuality, the ostensible freedom of gig work is limited by opaque digital systems that put productivity ahead of wellbeing. Concerns regarding digital labor ethics and the need for increased accountability and transparency in platform governance are raised by the discrepancy between perceived flexibility and real work pressure. This management structure replicates precarity for food service providers in Mumbai in a format mediated by technology.

The gig economy has given marginalized communities new sources of income, but it has also brought about serious problems that call for quick action from platform providers, policymakers, and civil society. The study urges that management practices to be regulated, the gig professionals to be formally recognized, and labor protections like insurance, minimum wage guarantees, and grievance procedures to be expanded. To prevent the widening of digital divides and informal employment traps, it is imperative to guarantee inclusive urban development and fair labor rights in the platform economy. In order to improve the policy framework surrounding gig work, future studies should investigate gender disparities, the effects on mental health, and comparative city-level dynamics. Sustainable gig employment models that balance social justice and economic efficiency must be created as India transitions to a digital-first economy.

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