

Income volatility and economic insecurity among multi-platform gig workers in India: Evidence from Mumbai

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Abstract---The rapid growth of platform-based work in India has created new employment opportunities but has also exposed gig workers to substantial economic uncertainty. The study investigates whether gig workers' engagement across multiple platforms represents a strategy for income diversification and risk management, or if it reflects deeper economic vulnerability. This paper examines the relationship between income volatility, job insecurity, financial insecurity and multi-platform participation among location-based platform workers in Mumbai. The study used a quantitative, comparative and cross-sectional research design through primary data collected through a structured questionnaire from 140 gig workers, i.e. 70 single-platform and 70 multi-platform workers working in food delivery, ride-hailing, quick-commerce and logistics/delivery services. Descriptive statistics, cross tabulation, chi-square tests, Welch's t-tests and Pearson correlation were used to explore differences and associations between the two groups. The results show that workers engaged in multiple platforms experience significantly higher income volatility than workers engaged in only one platform, with average income volatility of 31.60% compared with 23.13%. Multi-platform workers also experience more job and financial insecurity. Income volatility is significantly associated with multi-platform participation ($\chi^2 = 14.49$, $p < 0.001$) and combined job-financial insecurity is significantly associated with multi-platform participation ($\chi^2 = 16.46$, $p < 0.001$). The Pearson correlation also reveals positive and statistically significant associations between multi-platform participation and income volatility ($r = 0.402$, $p < 0.001$) and between multi-platform participation and the insecurity index ($r = 0.413$, $p < 0.001$). The findings suggest that multi-platform engagement should not be understood simply as an expression of worker flexibility or entrepreneurial choice, but may also operate as a response to income uncertainty and

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broader economic insecurity. The study proposes portable social-security arrangements, income-smoothing measures, alternative credit assessment based on platform earnings, minimum net-earning safeguards, emergency income protection and financial literacy interventions to reinforce the economic security of gig workers.

Keywords---Gig Economy, Gig Workers, Multi-Platform Work, Income Volatility, Job Insecurity, Financial Insecurity, Platform Workers.

1. Introduction

Digital platforms are becoming an increasingly important way of organizing urban labour. Food delivery, ride-hailing, quick-commerce and logistics apps have generated work opportunities that are radically different from traditional wage work. Workers are typically paid per completed task, ride, delivery or incentive, while platforms control access to customers, pricing structures, ratings and performance requirements. The scale of this transformation in India is huge.

The NITI Aayog estimated the number of gig workers to be around 7.7 million in 2020-21 and projected it would grow to around 23.5 million by 2029-30 (*NITI Aayog*). More recent evidence from the Economic Survey 2025–26 estimates the gig workforce at about 12 million in FY2025, a substantial increase over the earlier estimate. The Survey also mentions explicitly the continuing income volatility and difficulties of access to finance experienced by gig workers. (India Budget)

The International Labour Organization has identified income irregularity, lack of social protection, algorithmic management, work-related stress and uncertainty of access to work as key characteristics of platform labour (*ILO*). An important but relatively under-researched response to this uncertainty is multi-platform participation, sometimes called multi-homing. Instead of just one application, a worker can register and work through two or more platforms. You can make more money and become less reliant on a single platform by being active on several platforms. And at the same time it might signal an underlying inability to get adequate or predictable income from one platform.

This phenomenon finds an especially relevant setting in Mumbai. It is a large metropolitan labour market with extensive platform-mediated activity in mobility, food delivery, quick-commerce and logistics. Existing research has documented significant economic vulnerability among platform workers in Mumbai including long working hours, high operating costs and income insecurity. (*Center for Internet and Society*)

Thus, the analytical question in the current study shifts from “*Why do workers join gig platforms?*” to “*Why do workers remain dependent on multiple platforms at once?*”

2. Background of the Study

India’s gig economy is evolving rapidly in the backdrop of a large informal workforce and increased digital penetration. NITI Aayog estimates substantial expansion over the next decade. The Economic Survey 2025–26 points out the growing number of gig workers between FY2021 and FY2025 and the continued volatility in their income and challenges in obtaining loans due to their irregular earnings.

Platform workers, the ILO said, often earn low, precarious wages, work long hours and have limited social protection, especially those who work from specific locations and incur high operating costs. According to research by the Center for Internet & Society in Mumbai, delivery and taxi workers earn low and uncertain income, incur high work expenses, and work long hours. Therefore, they often register on multiple platforms to diversify their income informally.

3. Significance of the Study:

The study is important for five reasons: it contributes to the literature on India's platform economy by discussing multi-platform participation; it links income volatility, job insecurity, and financial insecurity; it offers evidence from Mumbai's labour market; it informs the design of social security, especially the Code on Social Security, 2020 that acknowledges gig and platform workers; and it supports platforms, policymakers, financial institutions, and worker organisations in designing interventions to curtail economic vulnerability associated with multi-platform dependency.

4. Rationale of the Study

Platform work is often framed as flexible employment, where workers have control over when and how much they work. However, flexibility does not necessarily mean economic security. Workers with income that varies greatly from week to week or month to month may have to increase hours, pick up work from multiple platforms or be constantly looking for incentives and high-demand locations.

Multi-platform participation can therefore be read in two different ways:

Choice perspective: workers combine different platforms to optimize flexibility and earnings.

Risk-management view: Workers use several platforms because income from a single platform is not sufficient or uncertain.

The present study tests whether the second explanation finds empirical support.

5. Scope and Justification

The study is geographically restricted to **Mumbai**.

The occupational scope covers:

- Food delivery workers – 70
- Ride-hailing drivers – 30
- Quick-commerce delivery workers – 20
- Logistics/other delivery workers – 20

Total proposed sample = **140 workers**.

The study excludes online freelancers, tutors, remote consultants and content creators because their work characteristics, income structures and labour-market risks differ considerably from location-based platform work.

6. Review of Literature

ILO (2021) The ILO's World Employment and Social Outlook 2021 is one of the most comprehensive international assessments of platform labour. Based on evidence from some 12,000 workers, it points to irregular earnings, lack of social protection, algorithmic management and work-related stress as major challenges.

NITI Aayog (2022) provided a significant Indian evidence base, estimating the scale and projecting the growth of India's gig economy. The report also notes the difficulties of measuring gig employment as workers may be engaged in multiple tasks and contracts. This measurement issue is directly related to multi-platform participation.

Aayush Rathi (2024) Research by Center for Internet and Society in Delhi-NCR, Mumbai, Lucknow and Guwahati shows economic vulnerability of app-based taxi and delivery workers. "Workers in Mumbai are earning far below what is needed to meet estimated living wage needs, while working long hours with high operational costs," the study said. Kuttler, T. 2025. Research on platformisation in Mumbai shows vulnerability and uncertainty for platform taxi drivers and shows that declining bonuses and platform deductions could lead workers to make up with longer working hours.

Recent research in Mumbai with delivery workers also finds economic, social and familial pressures associated with platform work and reports concerns relating to job satisfaction and well-being (Palo, S. & Kumar, V. 2024). New evidence on income uncertainty among gig-workers suggests that worker responses to income risk may vary depending on individual risk preferences, further emphasizing the significance of considering income volatility as an important labour-supply variable (Mourya, K.S. 2026).

Research Gaps:

While the literature on gig workers is expanding, Indian research on gig workers still suffers from five major gaps:

1. Lack of differentiation between single-platform and multi-platform workers
2. Limited tests of income volatility as a predictor of multiplatform participation
3. Separate studies of job and financial insecurity rather than a combined approach
4. The need to quantitatively test multi-platform participation as a risk management strategy given the existing evidence of precarity in Mumbai
5. Insufficient evidence at the worker level on the relationship between gross earnings, operating costs, income volatility, and platform diversification.

The current study fills these gaps by explicitly comparing 70 single-platform and 70 multi-platform workers and statistically testing the proposed relationships.

7. Objectives of the Study

The objectives are formulated as follows:

1. To analyze the level and pattern of single and multi-platform participation among selected gig workers in Mumbai.
2. To compare the income levels, working hours and income volatility among single platform and multi-platform workers.
3. To examine the relationship between income volatility and multi-platform participation.
4. To explore the relationship between job and financial insecurity and multiplatform participation.
5. To recommend institutional and policy interventions to enhance income stability and financial security for platform workers.

8. Hypotheses

H1: Higher income volatility is significantly related to a higher probability of multi-platform participation among gig workers.

H2: Engaging in gig work across multiple platforms is significantly related to higher job and financial insecurity.

9. Research Methodology

Research design

The research adopted a quantitative, comparative and cross-sectional design. The geographical focus is the urban labour markets of the Mumbai Metropolitan. The population of 140 consists of location-based platform workers engaged in food delivery (70), ride-hailing (30), and quick-commerce delivery (20), and logistics/delivery services (20). Out of these, 70 were single-platform workers and 70 were multi-platform workers, which allows for a comparative analysis. A purposive quota based sampling strategy was employed.

10. Data Sources

Primary data:

Primary data was collected through a structured questionnaire among the eligible gig workers in Mumbai.

Secondary Data

Secondary information is taken from NITI Aayog, Ministry of Labour and Employment, Government of India Economic Survey, International Labour Organization, India Code, Center for Internet and Society, peer-reviewed academic literature.

11. Variables:

Variable dependent

Multi-platform engagement

- 0 = Multi-platforms
- 1 = Multiplatform

Explanatory variables

- Income volatility: percent change in monthly income.
- Job insecurity: 5-point Likert scale.
- Financial insecurity: 5-point Likert scale.

Variable of control

- Hours worked per week.

Derived variable

- Insecurity Index = (Job Insecurity + Financial Insecurity)/2

12. Tools and techniques of statistics

The following statistical tools are appropriate:

1. Analysis of frequency and percentage
2. Average and standard deviation
3. Cross tabulation
4. Chi-square test
5. Pearson correlation

13. Data Analysis and Hypothesis Testing

The datasheet file contains 140 records.

Table 1.1
Overall descriptive statistics

Variable	Mean	Standard deviation	Minimum	Median	Maximum
Age	31.36 years	6.96	19	32	47
Weekly work hours	57.41	11.44	31	58	87
Monthly gross income	₹21,739.29	₹4,708.69	₹9,400	₹21,500	₹34,400
Income volatility	27.36%	10.56	6%	26%	55%
Monthly work cost	₹4,945.00	₹1,511.60	₹2,000	₹4,600	₹8,700
Net monthly income	₹16,794.29	₹3,803.35	₹7,400	₹16,150	₹26,800

Variable	Mean	Standard deviation	Minimum	Median	Maximum
Job insecurity score	3.24 / 5	0.82	1	3	5
Financial insecurity score	3.29 / 5	0.81	1	3	5
Emergency savings	1.65 months	1.02	0	2	4
Insecurity index	3.26 / 5	0.60	2	3.5	

Source: Calculated by researcher

Average worker reports working about 57 hours a week, income volatility of about 27% and only 1.65 months of emergency savings. Job and financial insecurity are both in the upper half of the 1-5 scale.

Table 1.2
Group comparison

Indicator	Single-platform	Multi-platform
N	70	70
Mean gross monthly income (₹)	21,256	22,223
Mean net monthly income (₹)	16,444	17,144
Mean income volatility (%)	23.13	31.60
Mean job insecurity	2.96	3.51
Mean financial insecurity	3.07	3.50
Mean weekly hours	57.24	57.57

Source: Calculated by researcher

The study shows a significant difference in income volatility. Multi-platform workers experienced an average monthly income volatility of around 31.6%, compared to 23.1% for single-platform workers. Either hypothesis is in agreement with the pattern described. Multi-platform workers have more volatile incomes and higher insecurity scores than single-platform workers.

13.1 Chi-square Test: H1

The high-volatility category was defined as monthly income fluctuation of **30% or more**.

The cross-tabulation demonstrates a statistically significant association between income volatility and platform status.

The statistical results were:

- Chi-square test - $\chi^2 = 14.49$, $p < 0.001$
- Welch t-test for mean volatility - $t = 5.16$, $p < 0.001$
- Mean difference: **8.47 percentage points**
- Cohen's $d = 0.87$, representing a large effect

Interpretation:

Workers experiencing greater income fluctuations appear more likely to participate across multiple platforms. This is consistent with the risk-management interpretation of multi-platform work.

Therefore, the study results support **H1: Higher income volatility is significantly associated with a greater likelihood of multi-platform participation among gig workers.**

13.2 Chi-square Test: H2

Workers were classified according to the combined job-financial insecurity index. The association between insecurity and platform status was statistically significant:

The statistical results were:

- Chi-square test - $\chi^2 = 16.46$, $p < 0.001$
- Welch t-test for the insecurity index - $t = 5.33$, $p < 0.001$
- Mean insecurity difference - **0.49 points**

- Cohen's $d = 0.90$, representing a large effect

The finding suggests that multi-platform participation may be linked with broader insecurity.

Thus, the results support **H2: Higher levels of job and financial insecurity are significantly associated with a greater likelihood of multi-platform participation among gig workers.**

Interpretation

Multi-platform engagement is associated with higher levels of perceived economic insecurity. Working across multiple platforms may be not only a lifestyle choice but may function as an economic buffer against the uncertainty of the availability of work.

14. Correlation Analysis:

Table 1.3
Correlation Analysis

Variables	Pearson r	Significance
Income volatility – multi-platform participation	0.402	$p < 0.001$
Insecurity index – multi-platform participation	0.413	$p < 0.001$

Source: Calculated by researcher

Both relationships are positive and statistically significant in the present data set. The somewhat stronger correlation between the insecurity index and multi-platform participation suggests that workers' platform choices may reflect broader economic insecurity more than income fluctuation alone.

The results are consistent with both hypotheses. The independent-samples comparison with chi-square test showed that greater income volatility was significantly related to multi-platform participation. Multi-platform workers experienced significantly higher levels of job and financial insecurity than single-platform workers.

15. Major Findings:

The main findings are:

1. Statistically possible 70:70 single/multi-platform comparison
2. Multi-platform workers experience greater income volatility compared to single-platform workers.
3. Multi-platform workers have on average more job insecurity.
4. Multi-platform workers are more likely to be in financial insecurity.
5. Income volatility has a positive and significant correlation with multi-platform participation.
6. Job insecurity and financial insecurity are significantly related to participation in multiple platforms.
7. Working hours do not explain multi-platform participation alone.
8. The results are consistent with the interpretation that multi-platform work can be a strategy for income diversification and risk management.

16. Innovative Recommendations:

16.1 Portable Gig Worker Security Account: A worker should have a portable social-security account that remains active irrespective of the number of platforms on which the worker operates. Contributions could be linked to the worker rather than to a single platform. This would be consistent with the direction of India's social-security framework, which explicitly recognises gig and platform workers.

16.2 Platform Income Smoothing Mechanism: Platforms could establish an income-stabilisation mechanism whereby workers meeting specified activity criteria receive a minimum monthly earning protection during periods of unusually low demand.

16.3 Multi-Platform Worker Registry: A voluntary interoperable registry could allow eligible workers to maintain verified occupational records across platforms without restricting their freedom to multi-home.

16.4 Financial Volatility Score: Banks and regulated financial institutions could develop alternative credit-assessment models using verified platform earnings histories rather than conventional salary slips. This is particularly relevant because the latest Economic Survey identifies income volatility as a barrier to financial access.

16.5 Minimum Earnings Floor: A minimum net-earning standard after reasonable operating expenses could be developed for selected categories of platform workers.

16.6 Emergency Income Protection: Workers should have access to an emergency income-support mechanism for accident, illness, temporary platform suspension or exceptional demand shocks.

16.7 Worker Financial Literacy Programme: Financial institutions, government agencies and platforms could jointly provide training in: emergency savings; insurance; taxation; retirement planning; responsible borrowing; and digital financial security.

17. Conclusion

The expansion of platform-mediated work represents an important transformation in India's urban labour market. While platform work provides accessibility and flexibility, the economic risks associated with irregular demand, operating costs and limited employment protection remain significant.

The central argument of this study is that **multi-platform participation should not automatically be interpreted as evidence of worker empowerment or entrepreneurial choice**. It may also represent a response to income uncertainty and financial insecurity. Both income volatility and the combined job-financial insecurity index are positively associated with multi-platform participation.

The policy implication is therefore important: improving the gig economy should involve more than creating additional platform opportunities. The policy objective should also be to improve **income predictability, social protection, financial inclusion and bargaining power**.

For Mumbai, a worker-centered platform economy would require coordination among municipal authorities, state and central governments, platform companies, financial institutions and worker organizations. Portable benefits, minimum net-earning safeguards, financial services adapted to variable incomes and effective grievance mechanisms could reduce the economic pressures that compel workers to depend on multiple platforms.

The long-term sustainability of India's gig economy will depend not simply on how many workers enter platforms, but on whether platform work can provide **predictable, dignified and economically secure livelihoods**.

References

1. Acemoglu, D., & Restrepo, P. (2019). Automation and new tasks: How technology displaces and reinstates labor. *Journal of Economic Perspectives*, 33(2), 3–30. <https://doi.org/10.1257/jep.33.2.3>

2. Adhvaryu, A., Atela, M., Brailovskaya, V., Dua, P., John, J. S., Joshi, P., & Royono, R. (2026). *Platform work: Evidence from drivers in India, Indonesia, and Kenya* (NBER Working Paper No. 34680). National Bureau of Economic Research. <https://doi.org/10.3386/w34680> (National Bureau of Economic Research)
3. Centre for Internet and Society. (2024). *Platforming precarity: Data narratives of workers sustaining urban platform services*. CIS India.
4. International Labour Organization. (2021). *World employment and social outlook 2021: The role of digital labour platforms in transforming the world of work*. International Labour Office.
5. International Labour Organization. (2023). *Extension of social protection to gig and platform workers in India*. ILO India.
6. International Labour Organization. (2025). *Exploring the gig economy: Challenges and opportunities*. ILO. <https://doi.org/10.54394/NMBW0887> (Research Repository)
7. Kuttler, T. (2025). Urban mobilities in Mumbai: Towards worker-centric platformisation beyond 'urban solutionism'. *Urban Studies*. <https://doi.org/10.1177/00420980241264645> (Sage Journals)
8. Ministry of Finance, Government of India. (2025). *Economic Survey 2024–25*. Government of India.
9. Ministry of Finance, Government of India. (2026). *Economic Survey 2025–26*. Government of India.
10. Mourya, K. S. (2026). Income uncertainty and heterogeneous labour supply responses: The role of risk preference among gig workers in India. *Anusandhanvallari*, 2026(1), 928–942.
11. NITI Aayog. (2022). *India's booming gig and platform economy: Perspectives and recommendations on the future of work*. Government of India.
12. Palo, S., & Kumar, V. (2024). *The realities behind the rides: Exploring gig workers lived experience in Mumbai*. *Indian Journal of Industrial Relations*, 60(2), 175–193.
13. Rath, A., Sekharan, A., Tandon, A., V. M., C., Furtado, C., Sekhar, N., & Devulapalli, S. (2024). *Platforming precarity: Data narratives of workers sustaining urban platform services*. Centre for Internet and Society, <https://cis-india.org/>