IJARCCE ISSN (O) 2278-1021, ISSN (P) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

Impact Factor 8.471 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 15, Issue 8, August 2026

DOI: 10.17148/IJARCCE.2026.15829

ARTIFICIAL INTELLIGENCE IN TRANSFORMING THE GIG ECONOMY

Case Study of Uber, Zomato and Upwork in India

Chandrakala G S

Assistant Professor, Department of Commerce, Rural college, Kanakapura, India

Abstract: Digital platforms have changed the way short-term work is organised, and artificial intelligence has become an important mechanism behind this transformation. This paper studies how AI is used in India's gig economy for assigning work, adjusting prices, evaluating performance and identifying fraud. The discussion uses Uber, Zomato and Upwork as representative platform examples and draws on secondary information from the sources listed in the study. The analysis shows that AI helps platforms coordinate large numbers of workers and customers, reduce operational delays, personalise opportunities, and strengthen platform security. At the same time, automated decisions can create concerns relating to fairness, explainability, employment stability and privacy. The paper therefore argues that technological efficiency alone is not sufficient for sustainable platform growth. Transparent decision systems, regular algorithmic checks, human review of adverse decisions and responsible handling of worker data are needed to build greater trust. The study concludes that AI should be developed as a worker-supporting technology rather than only as an instrument for platform control.

Keywords: Artificial Intelligence, Gig Economy, Platform Work, Algorithmic Management, Job Matching, Dynamic Pricing, Fraud Detection, Uber, Zomato, Upwork, India

I. INTRODUCTION

The expansion of app-based services has created a labour environment in which many individuals earn income by completing separate assignments rather than by holding conventional long-term jobs. This model is commonly described as the gig economy. Digital platforms connect customers and workers, while artificial intelligence helps these platforms process large amounts of information and make decisions quickly. In this environment, AI is increasingly involved in allocation, pricing, monitoring and risk management. The present study examines these functions with particular attention to major gig platforms operating in India.

II. OVERVIEW OF THE GIG ECONOMY

Gig work is characterised by short-duration tasks, flexible participation and digital coordination. Instead of a conventional employment structure, workers generally receive payment for individual jobs or assignments. Major segments include ride-hailing, food and parcel delivery, online freelancing, home services and e-commerce support. In India, platforms such as Uber, Ola, Zomato, Swiggy, Urban Company and Upwork illustrate different forms of platform-mediated work. Ratings, availability, location and task completion are important elements in the operation of these services.

III. LITERATURE REVIEW

Research on artificial intelligence and the gig economy has developed around the growing use of algorithmic systems to coordinate platform work. Existing studies broadly examine how digital platforms use algorithms for allocating tasks, evaluating performance, determining incentives and managing worker behaviour. The literature also identifies a continuing tension between the efficiency created by automation and the need for worker autonomy, transparency and fair treatment.

NITI Aayog's report, India’s Booming Gig and Platform Economy: Perspectives and Recommendations on the Future of Work (2022), provides an important foundation for understanding the Indian platform-work context. The report describes gig and platform work as an emerging employment segment with substantial potential for growth and employment generation. It also highlights the importance of policy support and social-security measures as the sector expands. cite turn0search0 turn0search25

Rosenblat and Stark (2016) examined information asymmetry in platform-mediated labour and showed why workers can have limited knowledge about the systems that influence their work. Their work is important for the present study because AI-based allocation and pricing can increase the information gap between platform operators and workers. This perspective helps explain why transparency has become a major issue in discussions of algorithmic management.

 This work is licensed under a Creative Commons Attribution 4.0 International License

International Journal of Advanced Research in Computer and Communication Engineering
Impact Factor 8.471 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 15, Issue 8, August 2026
DOI: 10.17148/IJARCCE.2026.15829

Duggan et al. (2020) examined algorithmic management in app-based work and highlighted how platforms can use automated systems to organise, monitor and evaluate workers. Their research is relevant to the present study's discussion of performance monitoring because the algorithm can effectively perform managerial functions that were traditionally carried out by human supervisors.

Kadolkar, Kepes and Subramony conducted a systematic review of algorithmic management in the gig economy. Their review integrates research across multiple disciplines and treats algorithmic management as a central feature of modern platform work. The study strengthens the argument that AI in the gig economy should not be examined only as a technical tool; it must also be considered as an organisational and employment-management mechanism. cite turn0search5 turn0search1

Recent research has further focused on the relationship between algorithmic control and worker well-being. A 2026 systematic review of 103 scholarly sources describes algorithmic management as a defining feature of the global gig and platform economy and examines how it is discussed across different regions and disciplines. This newer literature reinforces the need to consider worker experience, governance and fairness alongside platform efficiency. cite turn0search2

Research specifically concerned with India also points to a socio-technical dimension. Recent work on India's gig economy examines AI-enabled task allocation, performance management, wages and grievance redressal, suggesting that the effects of algorithmic management depend not only on the technology but also on institutional safeguards and the ability of workers to understand or challenge decisions.

The literature therefore reveals four major themes: first, AI improves the scale and speed of platform coordination; second, algorithms increasingly perform managerial functions; third, information asymmetry, bias, privacy and employment insecurity remain important concerns; and fourth, transparent and human-centred governance is needed. A research gap remains in connecting these themes with a comparative view of major Indian gig platforms such as Uber, Zomato and Upwork. The present study addresses this gap by examining the principal AI applications, benefits and challenges across these platform models.

Table 1. Summary of selected literature

Author / Source	Main focus	Relevance to present study
NITI Aayog (2022)	Indian gig and platform economy	Growth, employment and policy context
Rosenblat & Stark (2016)	Information asymmetry in platform labour	Transparency and worker knowledge
Duggan et al. (2020)	Algorithmic management in app-work	Automated monitoring and management
Kadolkar et al. (2025)	Systematic review of algorithmic management	Research themes and interdisciplinary evidence
Chigbu (2026)	Global systematic literature review	Worker-centred governance and algorithmic control

IV. ROLE OF AI IN GIG PLATFORMS

A. AI-BASED JOB MATCHING

One of the most important applications of AI is the automated allocation of work. Platform systems can examine a worker's location, skills, availability, previous performance and other relevant inputs before selecting a suitable assignment. For delivery and ride-hailing services, this can shorten customer waiting periods and reduce unproductive travel. In online freelancing, recommendation systems can connect projects with workers whose skills and previous work are relevant. However, repeated preference for highly rated workers may concentrate opportunities among a smaller group.

B. DYNAMIC PRICING

AI-supported pricing systems respond to changes in demand and the available supply of workers. Time, traffic, weather, local events and demand levels can influence the price presented to customers or the incentive offered to workers. Such systems can help platforms maintain service availability during busy periods. The major concern is that workers and customers may have limited information about the factors behind an automated price, which can create perceptions of unfairness.

C. PERFORMANCE MONITORING

Automated monitoring allows platforms to evaluate operational indicators such as completion time, cancellation behaviour, customer ratings and route performance. Location information can also be used to understand movement and

 This work is licensed under a Creative Commons Attribution 4.0 International License

International Journal of Advanced Research in Computer and Communication Engineering
Impact Factor 8.471 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 15, Issue 8, August 2026
DOI: 10.17148/IJARCCE.2026.15829

service efficiency. Although such monitoring can improve service standards, continuous algorithmic evaluation may increase pressure on workers and can influence access to future assignments.

D. FRAUD DETECTION

Fraud prevention is another important use of AI. Platforms can analyse unusual account activity, location inconsistencies, identity information and payment behaviour to identify suspicious transactions. Automated verification can also help detect duplicate or false accounts. These measures can protect both platforms and legitimate workers, although strong safeguards are required when biometric and location information are processed.

V. BENEFITS OF AI IN THE GIG ECONOMY

Operational efficiency: automated systems can coordinate very large numbers of transactions quickly.
Scalability: platform services can expand across locations without requiring the same increase in manual administration.
Personalised opportunities: recommendation systems can identify tasks that may suit a worker's skills, location or availability.
Improved safety and security: tracking, verification and fraud-alert mechanisms can support safer platform operations.

VI. CHALLENGES OF AI IN THE GIG ECONOMY

Algorithmic bias: automated models may reproduce or amplify unequal patterns present in platform data.
Limited explainability: workers may find it difficult to understand why an assignment, incentive or account decision was made.
Employment uncertainty: automated suspension or deactivation can affect income immediately when an effective human appeal process is absent.
Privacy risks: continuous collection of location, behaviour and performance information raises concerns about responsible data use.

VII. CASE STUDIES: INDIA

A. ZOMATO AND SWIGGY

Food-delivery platforms use AI-supported systems to estimate delivery time and allocate orders to delivery partners. These systems can consider distance, traffic, availability and previous operational performance. The supplied study reports improvements in delivery efficiency associated with these applications.

B. OLA AND UBER

Ride-hailing platforms combine route optimisation with demand-responsive pricing. AI can estimate travel conditions, identify efficient routes and adjust platform prices or incentives as demand changes. These functions are intended to improve vehicle utilisation and service availability.

C. URBAN COMPANY

Urban Company represents the home-service segment of the gig economy. AI-supported ranking and demand forecasting can help the platform identify suitable professionals and anticipate service requirements in different localities.

D. UPWORK AND FIVERR

Freelancing platforms use recommendation and matching mechanisms to connect clients with professionals. Skill information, portfolios, previous work and project requirements can be used to suggest relevant opportunities and improve the search process.

VIII. DATA ANALYSIS AND DISCUSSION

Indicator	Reported value	Source / description
Global gig workforce	1.57 billion	Approximately 20% of the global workforce
India gig workforce	2.35–2.50 crore	NITI Aayog 2024–25; projected 3.5 crore by 2030
Indian gig economy market	$455 billion by 2030	Study data; approximately $350 billion in 2024
AI-managed transactions	95%+	Reported platform-level automation

 This work is licensed under a Creative Commons Attribution 4.0 International License

IJARCCE ISSN (O) 2278-1021, ISSN (P) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

Impact Factor 8.471 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 15, Issue 8, August 2026

DOI: 10.17148/IJARCCE.2026.15829

Main AI applications	Matching 40%; Pricing 25%; Fraud 20%; Monitoring 15%	Platform data in supplied study
Workers viewing AI as unfair/untransparent	58%	Gig worker survey cited in supplied study

Table 1. Selected indicators of AI and the gig economy.

Year	Gig workforce in India
2020	77 lakh
2023	1.5 crore
2025	2.35 crore
2030E	3.5 crore

Table 2. Reported growth of India's gig workforce. Source: NITI Aayog.

The data presented in the supplied study indicate a strong expansion of India's gig workforce. The growth trend suggests that platform systems will need to coordinate an increasingly large number of workers and transactions. This provides an important reason for platforms to invest in AI-enabled allocation and forecasting. At the same time, rapid automation increases the importance of transparent and accountable decision-making.

Positive effect	Reported %	Concern	Reported %
Efficiency	+45%	Lack of transparency	-62%
Flexible hours	+38%	Job insecurity	-55%
Higher earning potential	+30%	Algorithmic bias	-48%

Table 3. Reported benefits and challenges for gig workers.

The comparison demonstrates a clear trust issue. Workers may appreciate the practical advantages of automation while remaining concerned about decisions that directly affect their income. This suggests that the success of AI in the gig economy should be evaluated not only through speed and efficiency, but also through fairness, transparency and worker confidence.

Platform group	Main AI application
Uber / Ola	Demand-responsive pricing and route optimisation
Zomato / Swiggy	Delivery-time estimation and rider allocation
Urban Company	Professional ranking and locality-level demand forecasting
Upwork / Fiverr	Skill matching and bid or project recommendations

Table 4. Major AI applications across selected Indian gig platforms.

VIII-A. VISUAL DATA ANALYSIS

The following diagrams convert the numerical information already presented in Tables 1–4 into visual form. They are intended to make the reported trends, AI application shares, worker outcomes and platform-level uses easier to interpret.

 This work is licensed under a Creative Commons Attribution 4.0 International License

IJARCCE ISSN (O) 2278-1021, ISSN (P) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

Impact Factor 8.471 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 15, Issue 8, August 2026

DOI: 10.17148/IJARCCE.2026.15829

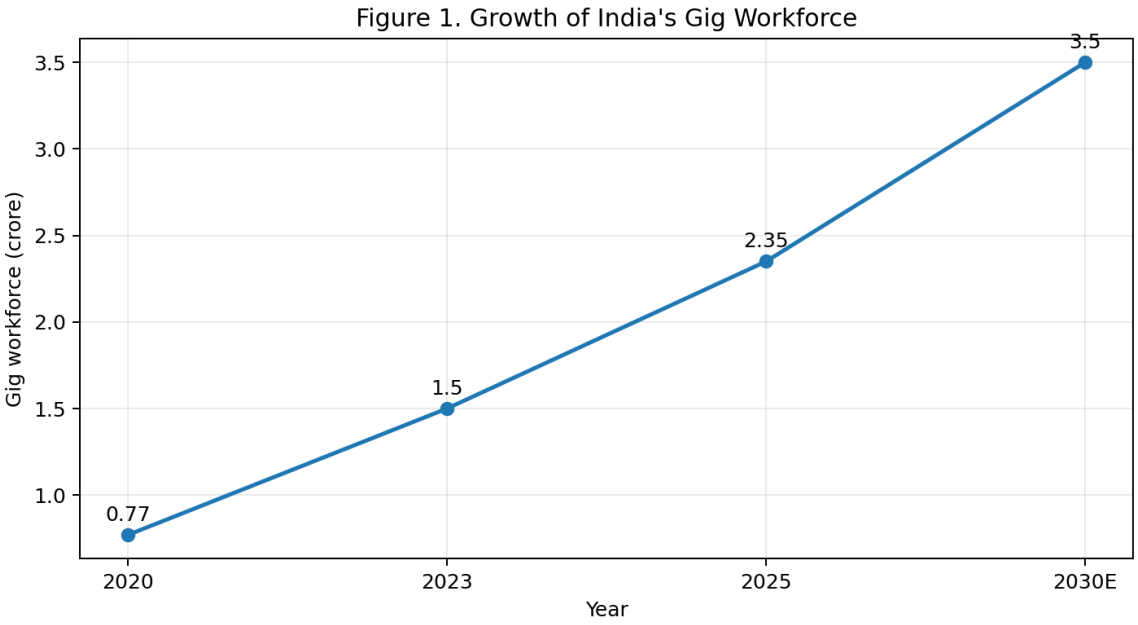

Figure 1. Growth of India's Gig Workforce (based on Table 2)

.

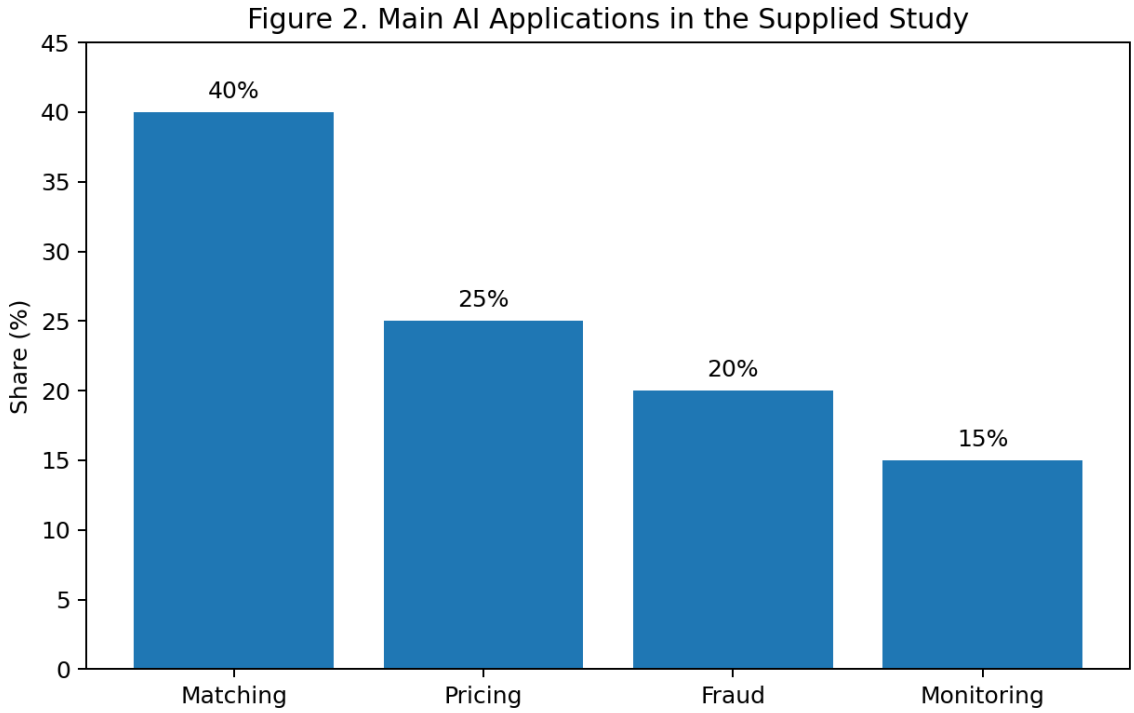

Figure 2. Main AI Applications in the Supplied Study (based on Table 1).

IJARCCE ISSN (O) 2278-1021, ISSN (P) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

Impact Factor 8.471 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 15, Issue 8, August 2026

DOI: 10.17148/IJARCCE.2026.15829

Figure 3. Reported Benefits and Challenges for Gig Workers

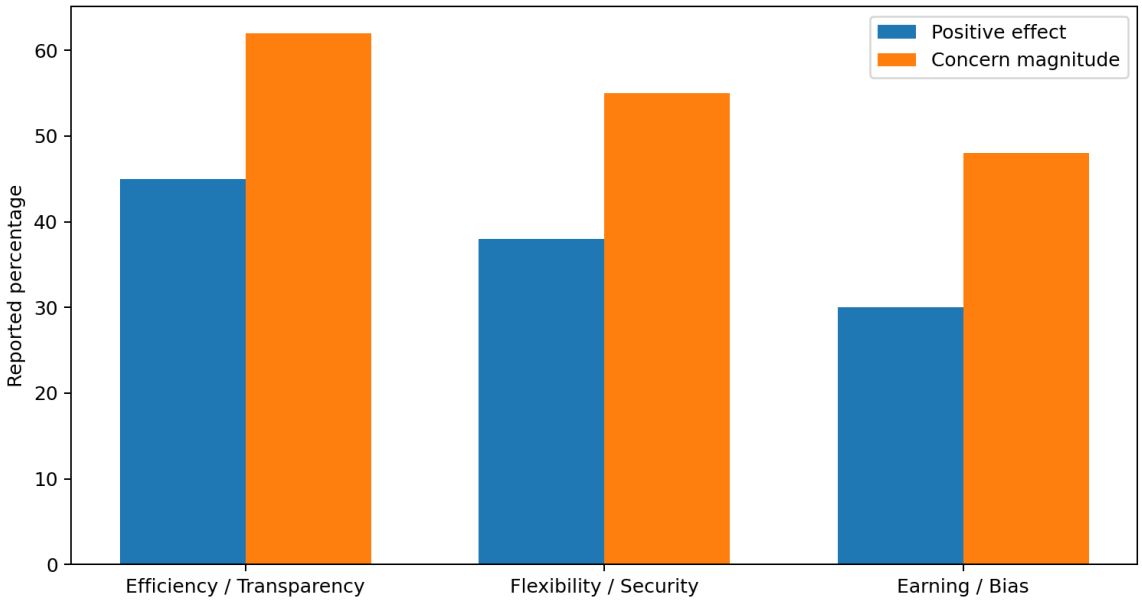

Figure 3. Reported Benefits and Challenges for Gig Workers (based on Table 3).

Figure 4. AI-Enabled Gig Platform Decision Flow

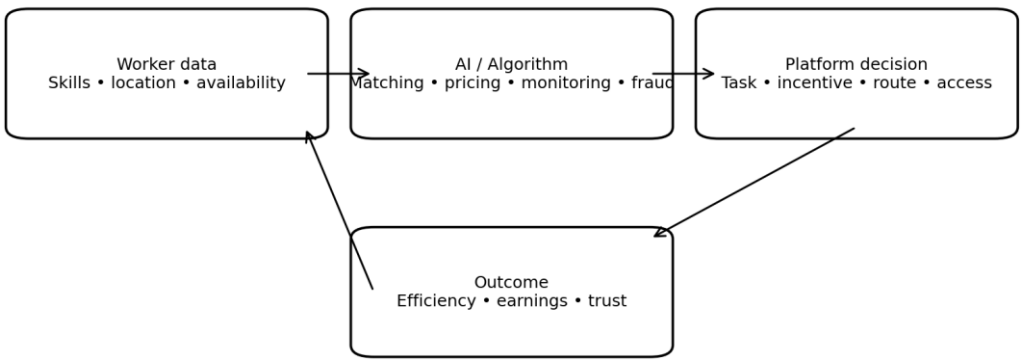

Figure 4. AI-Enabled Gig Platform Decision Flow (derived from the AI applications discussed in the study).

IX. FUTURE TRENDS

AI work assistants may advise workers about suitable working periods, locations and opportunities. Explainable AI may allow workers to receive understandable reasons for important automated decisions. AI-based learning recommendations may help workers develop skills and improve their professional profiles. Robotics, autonomous vehicles and drone-based delivery may create new platform-work models. Blockchain combined with AI may support alternative platform structures with fewer intermediaries. Ethical AI is likely to become more important as automated systems increasingly influence worker income and access to jobs.

X. RECOMMENDATIONS

Introduce clear AI decision explanations so workers can understand major allocation, ranking and account decisions. Conduct periodic independent reviews of algorithms to identify discriminatory or unfair outcomes. Provide human-assisted grievance procedures for suspension, deactivation and other high-impact decisions. Strengthen privacy controls and align platform data practices with the Digital Personal Data Protection Act, 2023.

 This work is licensed under a Creative Commons Attribution 4.0 International License

International Journal of Advanced Research in Computer and Communication Engineering
Impact Factor 8.471 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 15, Issue 8, August 2026
DOI: 10.17148/IJARCCE.2026.15829

XI. OUTPUT REPORT

The study output indicates that AI is becoming an important coordination mechanism in India's gig economy. The reported workforce figures show expansion from 77 lakh in 2020 to an estimated 3.5 crore by 2030, increasing the need for scalable platform coordination.

The major reported AI applications are job matching (40%), dynamic pricing (25%), fraud detection (20%) and performance monitoring (15%). Across the selected platform examples, AI is used for route optimisation, demand-responsive pricing, delivery-time estimation, rider allocation, professional ranking, demand forecasting and skill matching.

The reported worker outcomes show a mixed picture: efficiency (+45%), flexible hours (+38%) and higher earning potential (+30%) are identified as positive effects, while lack of transparency (-62%), job insecurity (-55%) and algorithmic bias (-48%) remain major concerns.

Overall finding: AI can improve efficiency and scalability, but sustainable growth requires transparent decision explanations, independent algorithmic review, human-assisted grievance mechanisms and responsible handling of worker data.

XII. CONCLUSION

Artificial intelligence is becoming a central component of the gig economy because it enables digital platforms to coordinate workers, customers and transactions at a large scale. Its applications in matching, pricing, monitoring and fraud prevention can improve operational performance and service quality. Nevertheless, automation can also create serious concerns when workers cannot understand or challenge decisions that affect their livelihoods. The Indian experience therefore shows the need for a balanced approach in which efficiency is accompanied by transparency, human oversight and responsible data governance. The long-term sustainability of the gig economy will depend not simply on how much AI is deployed, but on how fairly and responsibly it is used.

REFERENCES

[1] NITI Aayog. (2022). India’s Booming Gig and Platform Economy: Perspectives and Recommendations on the Future of Work. Government of India.
[2] Rosenblat, A., & Stark, L. (2016). Algorithmic labor and information asymmetries. International Journal of Communication, 10, 3758–3784.
[3] Duggan, J., Sherman, U., Carbery, R., & McDonnell, A. (2020). Algorithmic management and app-work in the gig economy. Human Resource Management Journal, 30(1), 114–132.
[4] Kadolkar, I., Kepes, S., & Subramony, M. (2025). Algorithmic management in the gig economy: A systematic review and research integration. Journal of Organizational Behavior, 46(7), 1057–1080.
[5] Chigbu, B. I. (2026). Algorithmic management in the global gig economy: An interdisciplinary systematic literature review and critical discourse analysis. Frontiers in Sociology.
[1] NITI Aayog. (2024). India's booming gig and platform economy. Government of India.
[2] International Labour Organization. (2025). World employment and social outlook.
[3] Boston Consulting Group & Google. (2023). Unlocking the $455 billion gig economy in India.
[4] Duggan, J., Sherman, U., Carbery, R., & McDonnell, A. (2020). Algorithmic management and app-work in the gig economy. Human Resource Management Journal, 30(1), 114–132.
[5] Kelly, J. (2024, February 10). How AI and dynamic pricing run the gig economy. Forbes.
[6] Rosenblat, A., & Stark, L. (2016). Algorithmic labor and information asymmetries. International Journal of Communication, 10, 3758–3784.
[7] Sharma, R. (2025, March 3). Zomato, Swiggy use AI to cut delivery time. Business Standard.
[8] Uber Technologies Inc. (2024). Uber AI and safety transparency report.
[9] Wood, A. J., Graham, M., Lehdonvirta, V., & Hjorth, I. (2019). Good gig, bad gig. Work, Employment and Society, 33(1), 56–75.
[10] World Economic Forum. (2025). The future of jobs report 2025.

 This work is licensed under a Creative Commons Attribution 4.0 International License