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# ALGORITHMIC MANAGEMENT IN THE GIG ECONOMY: CHALLENGES TO LABOUR RIGHTS IN INDIA

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## I. ABSTRACT

*The gig economy has rapidly expanded in India due to the growth of digital platforms such as Uber, Ola, Swiggy, and Zomato. These platforms have created new earning opportunities by connecting workers and customers through mobile applications and digital technologies. Although gig work is often presented as flexible and independent, it has also created serious concerns regarding labour rights and worker protection. One of the most important developments in this sector is algorithmic management, where digital systems and automated technologies are used to supervise workers, assign tasks, monitor performance, determine earnings, and evaluate productivity. This paper examines how algorithmic management affects labour rights in India's gig economy. It analyses issues such as worker surveillance, income instability, lack of social security, weak bargaining power, legal uncertainty, and absence of collective representation. The study also looks at how effective the Code on Social Security, 2020 is in protecting the rights and welfare of gig and platform workers in India. The research is based on a doctrinal and analytical approach using secondary sources such as books, research articles, government reports, and legal documents. It studies how digital platforms and technology are changing the nature of employment and labour relations in the modern economy. The paper finds that while the gig economy has created new job opportunities and supported the growth of India's digital economy, it has also increased problems such as job insecurity, irregular income, and lack of proper labour protection. Many gig workers continue to work without basic benefits like social security, health insurance, paid leave, or stable working conditions. The study further observes that existing labour laws are still not fully equipped to deal with the challenges created by platform-based work and algorithmic management systems. Therefore, the research highlights the need for stronger labour regulations and better implementation of social security measures for gig workers. It also stresses*

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*the importance of making algorithmic systems more transparent so that workers can better understand how decisions related to wages, ratings, incentives, and work allocation are made. Overall, the study argues that the future of platform-based work in India should not focus only on technology and economic growth, but also on fairness, worker dignity, accountability, and social justice.*

## II. KEYWORDS

Algorithmic Management, Gig Economy, Labour Rights, Code on Social Security, Platform Workers.

## III. INTRODUCTION

The nature of employment in India has undergone a major transformation in recent years, driven largely by the rapid growth of digital technology and platform-based businesses. Today, millions of people earn their livelihood through app-based platforms such as Uber, Swiggy, Zomato, and Urban Company. These digital platforms act as intermediaries, connecting workers directly with customers while offering flexible earning opportunities that differ significantly from traditional forms of employment.<sup>2</sup>

Gig work generally refers to short-term, task-oriented, or freelance employment in which individuals are paid for specific services rather than receiving fixed monthly salaries. In India, the expansion of affordable smartphones, widespread internet connectivity, digital payment systems, and the rapid rise of e-commerce have all contributed to the growth of the gig economy. For many workers, especially young people and migrants in urban areas, platform-based work has become an accessible source of income that requires relatively low entry barriers.<sup>3</sup>

The COVID-19 pandemic further accelerated this shift. During lockdowns and restrictions, online delivery services, ride-hailing applications, and home-service platforms became essential to everyday life. Delivery partners, drivers, and service

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<sup>2</sup> Woodcock, J., & Graham, M. (2019).

<sup>3</sup> NITI Aayog. (2022).

providers played a crucial role in ensuring access to food, medicines, transport, and household services when much of the economy had come to a standstill. As a result, platform labour emerged as a central component of India's urban economy and digital marketplace.<sup>4</sup>

While the gig economy has undoubtedly created new employment opportunities, it has also raised serious concerns regarding labour rights and social protection. Most gig workers are not recognised as formal employees by the platforms for which they work. Instead, they are classified as "independent contractors" or "partners." This classification allows companies to avoid many legal obligations associated with traditional employment relationships. Consequently, gig workers often do not receive benefits such as minimum wages, paid leave, health insurance, provident fund contributions, pensions, or job security. Their earnings are also highly uncertain, as income depends on factors such as demand fluctuations, customer ratings, and platform incentives.<sup>5</sup>

Another important feature of platform-based work is the increasing use of algorithmic management. Digital platforms now rely heavily on algorithms to perform tasks that were traditionally handled by human supervisors or managers. These systems allocate work, calculate wages, monitor worker performance, track location and productivity, analyse customer feedback, and even determine penalties or incentives. Workers are therefore managed through automated systems that operate with little transparency.<sup>6</sup>

This form of management has significantly changed the experience of work. Gig workers often face constant digital surveillance, pressure to maintain high ratings, and uncertainty regarding how decisions affecting their income are made. Since algorithms determine access to tasks and incentives, workers have limited control over their working conditions and little opportunity to challenge unfair decisions. Many workers also report long working hours and intense competition in order to secure adequate earnings.<sup>7</sup>

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<sup>4</sup> International Labour Organization. (2021).

<sup>5</sup> De Stefano, V. (2016). *Comparative Labor Law & Policy Journal*, 37(3), 471-504.

<sup>6</sup> Rosenblat, A. (2018).

<sup>7</sup> Srnicek, N. (2017).

Thus, although the gig economy represents a new and expanding source of employment in India's digital age, it also highlights the growing tension between technological innovation and labour protection. The challenge for policymakers is to ensure that flexibility and innovation do not come at the cost of workers' dignity, rights, and economic security.<sup>8</sup>

### **A. Research Objectives**

This research aims to study how algorithmic management is affecting labour rights in India's growing gig economy. In recent years, digital platforms have become an important source of employment for many people, especially in urban areas. Companies such as Uber, Swiggy, Zomato, and Urban Company use technology and mobile applications to manage workers and provide services to customers. Unlike traditional workplaces where managers directly supervise employees, these platforms depend heavily on algorithms and automated systems to control and monitor workers.

The study focuses on understanding how these digital systems influence the daily working lives of gig workers. Algorithms are now used to assign tasks, calculate payments, track workers' locations, monitor performance, and analyse customer ratings. Many workers do not fully understand how these systems function or how decisions regarding incentives, penalties, or work allocation are made. Because of this, workers often feel that they have very little control over their jobs and working conditions. This research therefore seeks to examine whether algorithmic management creates pressure, uncertainty, and unfair treatment for workers in the gig economy.

Another important objective of the study is to analyse how these practices affect wages, working conditions, and worker autonomy. Gig workers usually work for long hours to earn a stable income, but their earnings can change depending on demand, customer ratings, and platform policies. Since most workers are treated as independent contractors rather than employees, they are generally denied benefits such as minimum wages, paid

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<sup>8</sup> International Labour Organization. (2021).

leave, health insurance, provident funds, and job security. The research will explore how the absence of these protections impacts the economic and social well-being of workers.

The study also examines the issue of social security and legal protection for gig workers in India. Although the gig economy has created new employment opportunities, labour laws in India were originally designed for traditional employer–employee relationships. As a result, many existing laws do not fully address the challenges faced by platform workers. The research will therefore analyse important legal developments, including the Code on Social Security, 2020, which recognises gig and platform workers under Indian law. It will evaluate whether current labour laws and government policies are strong enough to protect workers from exploitation and ensure fair working conditions.

Overall, this research aims to understand the relationship between technology, platform work, and labour rights in India. It seeks to highlight the challenges faced by gig workers in an increasingly digital economy and to examine whether there is a need for stronger legal protections and more transparent platform practices. The study hopes to contribute to discussions on creating a fair balance between technological innovation, business growth, and the rights and dignity of workers.

## **B. Research Questions**

1. Does algorithmic management by digital platform companies constitute a sufficient degree of control to establish an employer–employee relationship under Indian labour law?
2. How does algorithmic management affect the labour rights of gig workers in India, particularly with respect to wages, working conditions, autonomy, and protection from arbitrary deactivation?
3. Is the legal framework under the Code on Social Security, 2020 adequate to address the social security and welfare needs of gig and platform workers in India?

4. What regulatory and policy reforms are necessary to ensure transparency, accountability, and fairness in the operation of algorithmic management systems in the gig economy?

### **C. Research Methodology**

This study follows a doctrinal and analytical methodology based mainly on secondary sources. The research analyses labour laws, government reports, judicial decisions, academic literature, and policy documents relating to the gig economy and algorithmic management.

The study particularly focuses on sectors such as ride-hailing services, food delivery platforms, home-based services, and online service-based work in India. Comparative references from international legal developments have also been used to understand global approaches toward regulating platform labour.

### **D. Literature Review**

Existing literature on the gig economy highlights both opportunities and challenges associated with platform work. Early studies viewed the gig economy as a flexible employment model capable of generating income and increasing labour market participation. However, recent research increasingly focuses on worker insecurity, algorithmic control, and labour precarity.<sup>9</sup>

Scholars such as Jamie Woodcock and Mark Graham argue that flexibility in gig work is often misleading because workers remain dependent on platforms for income and work opportunities.<sup>10</sup> Research by the International Labour Organization also shows that digital platforms create unequal power relationships through data collection and automated monitoring systems.<sup>11</sup>

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<sup>9</sup> Vijeta Banwari, *Gig Economy: Challenges and Opportunities in India* (2018).

<sup>10</sup> Jamie Woodcock & Mark Graham, *The Gig Economy: A Critical Introduction* (Polity 2019).

<sup>11</sup> International Labour Organization, *Digital Labour Platforms and the Future of Work* (2018).

Studies on algorithmic management explain how platforms use technology to monitor workers, calculate wages, and evaluate performance. Workers usually have limited information regarding how these systems function, which weakens transparency and accountability.<sup>12</sup>

In India, reports by NITI Aayog and Fairwork India have highlighted issues such as declining incentives, long working hours, lack of social security, and weak legal protection for platform workers.<sup>13</sup> Legal scholars have also debated whether gig workers should be treated as employees because platforms exercise significant control over their labour processes.

#### **IV. CONCEPTUALIZATION OF LABOUR RIGHTS IN THE GIG ECONOMY**

Labour rights refer to the legal and social protections available to workers to ensure fair treatment, safe working conditions, and economic security. Traditionally, labour laws were designed around formal employer-employee relationships where employers were responsible for providing wages, welfare benefits, and workplace protections.<sup>14</sup>

However, the rise of the gig economy has challenged this traditional framework. Digital platforms argue that gig workers are independent and free to choose their working hours. Yet, in practice, platforms exercise considerable control through ratings, incentives, penalties, GPS tracking, and automated systems.<sup>15</sup>

This creates a contradiction in labour relations. Gig workers are treated like employees in terms of supervision and control, but legally they are classified as independent contractors. Consequently, they remain outside the protection of many labour laws and

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<sup>12</sup> Yudina, "Algorithmic Management in the Sociology of Technology" (2024).

<sup>13</sup> NITI Aayog, India's Booming Gig and Platform Economy (2022).

<sup>14</sup> International Labour Organization, Digital Labour Platforms and the Future of Work (2018).

<sup>15</sup> Jamie Woodcock & Mark Graham, The Gig Economy: A Critical Introduction (Polity 2019).

social security schemes. This legal ambiguity weakens worker bargaining power and increases economic insecurity.<sup>16</sup>

## V. RESEARCH AND ANALYSIS

### A. Algorithmic Control and Power Asymmetry

The growth of the gig economy has significantly transformed labour relations in India. Traditional employment relationships based on fixed salaries and long-term contracts are increasingly being replaced by platform-based work arrangements. Digital platforms now use technology not only to connect workers and customers but also to supervise and control labour processes.

Algorithmic management has become one of the defining features of platform work. Algorithms allocate tasks, track worker movement, determine incentives, monitor productivity, and evaluate customer ratings through large-scale data collection systems. Workers interact mainly with applications instead of human supervisors. As a result, decisions regarding earnings, penalties, and deactivation are often made automatically without proper explanation.<sup>17</sup>

This system creates an imbalance of power between platforms and workers. Platforms possess extensive data about workers, while workers have little understanding of how algorithmic decisions are made. The lack of transparency increases worker insecurity and dependence on digital systems.

### B. Income Instability and Digital Surveillance

Although platforms promote flexibility as a major benefit of gig work, this flexibility is often limited in practice. Workers may choose when to log in, but economic pressure and

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<sup>16</sup> Aditi Bagchi, 'The Legal Status of Gig Workers and the Future of Labour Protection' (2021) *Indian Journal of Labour Economics* 64(4): 915–930.

<sup>17</sup> Baiocco & Fernández-Macías, *Algorithmic Management: A Basic Compass* (2022).

incentive structures force them to work for long hours. Failure to maintain performance standards may reduce future work opportunities or affect ratings.<sup>18</sup>

Economic insecurity remains a major challenge in the gig economy. Gig workers are usually paid per task rather than receiving stable monthly salaries. Earnings fluctuate depending on demand, customer ratings, and algorithmic pricing systems. Workers also bear operational costs such as fuel, vehicle maintenance, and internet expenses. This creates unstable income conditions and financial uncertainty.

Another important concern is digital surveillance. Platforms continuously monitor worker location, speed, efficiency, and customer interaction through GPS tracking and mobile applications. Customer rating systems further increase psychological pressure because low ratings may affect future earnings and work allocation.<sup>19</sup>

### **C. Worker Classification and Legal Uncertainty**

The legal position of gig workers also remains uncertain. Platforms claim that they are technology companies rather than employers. However, many scholars argue that platforms exercise substantial control over workers through algorithms and contractual rules. This raises important questions regarding worker classification and labour rights.

### **D. Code on Social Security, 2020: An Assessment**

The Code on Social Security, 2020 represents a significant development in Indian labour law and has been in force since 21 November 2025. It formally recognises gig and platform workers, establishes a Social Security Fund, and requires aggregators to contribute between 1 and 2 per cent of their annual turnover, subject to the statutory cap. Gig workers are also eligible to register on the e-Shram portal to access welfare schemes. However, the Code does not confer full employment protections or automatically guarantee effective social security benefits in practice. Its impact continues to depend on

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<sup>18</sup> Koutsimpogiorgos et al., "Conceptualizing the Gig Economy and Regulatory Challenges" (2020).

<sup>19</sup> Fairwork India Reports (2023–2024).

the timely implementation of schemes, registration of workers, compliance by aggregators, and effective administrative enforcement.<sup>20</sup>

### **E. Comparative Perspectives: The EU Platform Work Directive**

International developments demonstrate a growing trend toward stronger regulations of platform work. Courts and legislatures in jurisdictions such as the United Kingdom and Spain have increasingly recognised that gig workers require labour protections despite being classified as independent contractors. A particularly significant development is Directive (EU) 2024/2831 of the European Parliament and of the Council of 23 October 2024 on improving working conditions in platform work, published in the Official Journal of the European Union on 11 November 2024.

The Directive is the first comprehensive supranational legislation specifically regulating algorithmic management in the workplace. It introduces a rebuttable legal presumption of employment where platform companies exercise control over workers, thereby shifting the burden to platforms to demonstrate genuine self-employment. It also requires algorithmic transparency, meaningful human oversight of automated decision-making systems, and grants platform workers the right to obtain explanations and contest decisions relating to task allocation, ratings, suspension, and deactivation. Member States are required to transpose the Directive into national law by 2 December 2026.

The EU framework provides an important comparative model for India. Its emphasis on employment classification, transparency, and procedural safeguards directly addresses many of the concerns identified in this study regarding opaque algorithmic control and the absence of effective remedies for gig workers. These developments illustrate how legal systems can balance technological innovation with worker protection by imposing accountability obligations on digital platforms.

### **F. State-Level Legislative Developments in India**

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<sup>20</sup> Code on Social Security, 2020.

In addition to the Code on Social Security, 2020, several Indian states have introduced specialised legislation to address the welfare of gig and platform workers. The most significant development is the Rajasthan Platform-Based Gig Workers (Registration and Welfare) Act, 2023, which was the first law in India enacted specifically for the protection of gig workers. The Act provides for the mandatory registration of gig workers and aggregators, establishes a Platform-Based Gig Workers Welfare Board, creates a dedicated Social Security and Welfare Fund financed through a transaction-based welfare fee imposed on aggregators, and introduces a grievance redressal mechanism for workers.

The Rajasthan legislation has been widely recognised as a pioneering model for state-level regulation of platform labour. Building upon this framework, Karnataka, Bihar, and Jharkhand enacted similar legislation in 2025 to strengthen welfare protections for gig workers within their respective jurisdictions. These developments demonstrate that India's regulatory response to platform work is evolving not only at the central level but also through innovative state-led initiatives. Collectively, these laws reflect a growing recognition that gig workers require targeted legal protections, institutional support, and enforceable welfare mechanisms to address the unique challenges posed by algorithmic management and non-standard employment arrangements.

## **VI. SUGGESTIONS AND RECOMMENDATIONS**

In light of the findings of this study, there is a clear need for a balanced and effective regulatory framework in India that protects gig workers while also supporting innovation and technological growth.

1. The government should introduce stronger legal safeguards specifically designed for gig and platform workers. Labour laws should ensure fair wages, reasonable working hours, social security benefits, and accessible grievance redressal mechanisms.

2. Although the Code on Social Security, 2020 is now operational, its practical effectiveness depends on robust implementation and enforcement. The government should ensure that welfare schemes are fully operational, workers are widely registered on the e-Shram portal, and aggregators comply with their statutory contribution obligations so that gig workers can receive meaningful social protection in practice.
3. Digital platforms should also be made more accountable and transparent in their use of algorithms.
4. Workers should have the right to know how ratings, incentives, penalties, and task allocation systems operate. Platforms must ensure that algorithmic decisions are fair, explainable, and free from discrimination.
5. Safeguards should be introduced to prevent arbitrary suspension or deactivation and to guarantee workers an opportunity to challenge adverse decisions.
6. At the same time, gig workers should be encouraged and supported in forming associations or unions capable of collectively representing their interests. Stronger collective representation can help workers negotiate improved working conditions and protect their rights more effectively.
7. Public awareness of the contribution made by platform workers should also be increased so that the importance of their labour is adequately recognised in the broader economy.

## **VII. CONCLUSION**

The gig economy has become one of the fastest-growing sources of employment in India and has played an important role in the country's digital and economic development. Digital platforms such as Uber, Swiggy, Zomato, and Urban Company have created opportunities for millions of people, especially young workers, migrants, and individuals who may not have access to regular formal employment. The flexibility offered by gig work has attracted many workers because it allows them to choose their working hours

and earn income through digital platforms. In many cities, platform-based services have also become an essential part of everyday life.

However, this research shows that behind the convenience and growth of the gig economy, there are several serious concerns related to labour rights and worker welfare. Although digital platforms present gig workers as “independent partners,” in reality, workers are heavily controlled through algorithmic management systems. These systems decide how tasks are assigned, how much workers are paid, how performance is measured, and whether workers receive incentives or penalties. As a result, workers often have very little control over their working conditions despite being labelled as independent contractors.

One of the major findings of this study is that algorithmic management has created a new form of workplace control based on technology and digital surveillance. Gig workers are constantly monitored through mobile applications, GPS tracking, customer ratings, and automated performance systems. Many workers do not clearly understand how platform algorithm’s function or why certain decisions affecting their income are made. This lack of transparency creates uncertainty and stress among workers, as their earnings and opportunities can change without proper explanation. The pressure to maintain high ratings and complete more tasks often forces workers to work for long hours under difficult conditions.

The research also highlights that gig workers continue to face several economic and social insecurities. Income instability remains one of the biggest problems in platform-based work. Workers’ earnings depend on demand, customer behaviour, incentives, and platform policies, all of which can change frequently. In addition, most gig workers do not receive important employment benefits such as minimum wage protection, health insurance, paid leave, provident funds, pension benefits, or job security. Since they are not formally recognised as employees, they remain outside many traditional labour protections available under Indian labour law.

Another important issue is the weak bargaining power of gig workers. Most workers negotiate individually with large digital platforms that have greater economic and technological power. Workers also face the risk of sudden suspension or deactivation from platforms without proper notice or an opportunity to challenge the decision. This creates legal uncertainty and makes workers financially vulnerable, especially when platform work is their primary source of income. The study therefore shows that existing labour laws in India are still not fully prepared to address the challenges created by platform-based employment and algorithmic management.

In light of these findings, there is a clear need for a balanced and effective regulatory framework in India that protects workers while also supporting innovation and technological growth. The government should introduce stronger legal safeguards specifically designed for gig and platform workers. Labour laws should ensure that workers receive fair wages, reasonable working hours, social security benefits, and access to grievance redressal mechanisms. The implementation of the Code on Social Security, 2020 should be strengthened so that gig workers can actually benefit from social protection schemes in practice.

Digital platforms should also be made more accountable and transparent in their use of algorithms. Workers should have the right to know how ratings, incentives, penalties, and task allocation systems operate. Platforms must ensure that algorithmic decisions are fair and free from discrimination. There should also be safeguards against arbitrary deactivation so that workers are not removed from platforms without valid reasons or proper procedures.

At the same time, gig workers should be encouraged and supported in forming associations or unions that can collectively represent their interests. Stronger collective representation can help workers negotiate better working conditions and protect their rights more effectively. Public awareness regarding the rights of platform workers should also be increased so that society recognises the contribution made by gig workers to the economy.

In conclusion, the future of work in India cannot be shaped only by technological efficiency and digital innovation. Economic growth must go hand in hand with fairness, dignity, and social justice. As the gig economy continues to expand, it is important to ensure that workers are treated not merely as data points within algorithms, but as human beings whose labour, rights, and well-being deserve protection and respect.

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