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GIG WORKERS AND ALGORITHMIC LABOUR CONTROL: A SOCIO-LEGAL ANALYSIS OF INDIA'S EMERGING REGULATORY FRAMEWORK

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Abstract

The gig economy has significantly reshaped labour markets by creating platform-based employment with the assistance of digital technologies and algorithmic management. This paper explores the phenomenon of algorithmic labour control from a socio-legal perspective, deconstructing the nature of the new working relationship that arises with the introduction of algorithms and examining the need to reassess how the current labour law frameworks are being adapted to this new mode of management. The study also highlights other comparative trends that can be seen from the European Union Platform Work Directive, the U.K. Supreme Court's case of Uber BV v. Aslam, and California's Assembly Bill 5, each of which establishes a new international precedent for regulating platform work and algorithmic management. The paper takes a doctrinal and socio-legal approach and holds that the current Indian laws are inadequate and fragmented to deal with the realities of digitally-managed work. It ends with a call for reforms focused on algorithmic transparency, the right to explanation, the collective bargaining rights of both employees and self-employed persons, and increased accountability of platforms in relation to technological innovation, so as to make sure that it develops in line with labour justice, procedural fairness and the constitutionally guaranteed values of dignity and social protection within the framework of the digital economy.

Keywords: Gig economy, Algorithmic management, Algorithmic labour control, Gig workers, Platform work, Platform accountability

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Introduction

The digital economy[2] has led to the shifts in the nature of work around the world, and the establishment of new employment relationships, that are mediated by digital platforms. Platform-based work has become a major livelihood option for millions of people in India[3], including those in the ride-hailing, food delivery, e-commerce logistics, domestic service, and freelance digital content creation industries. Uber, Ola, Swiggy and Zomato are among the key players in the gig economy which provide flexible earning opportunities and have also changed traditional employment relations. Platform work is fundamentally different from traditional work, where workers are directly monitored and regulated by their employers, in that they are monitored and regulated by technological infrastructures and a web-based platform that coordinates and evaluates their activity. This transformation has led to a lot of socio-legal discussion about the rights of labour, the security of the job, social protection, the governance of managerial control over technologies[4].

The gig economy of the present is characterized by algorithmic management, a system that uses algorithms to replace human managers. Algorithmic Management is the application of automated decision-making systems, data analytics and artificial intelligence technologies to allocate work, track performance, assess productivity, set pay rates, and discipline workers. Digital platforms use high-tech processes to have considerable control over workers, and frequently treat gig workers as independent contractors, not employees[5]. This is a paradox in itself: workers have a certain flexibility in their working hours, but many details about their work are managed by less-than-transparent technological systems, with which the workers have no understanding, or have little influence.

In an era of algorithmic management[6], key questions about power, accountability, and fairness in digital labour markets have emerged. This research aims to analyse the regulation and control of gig workers in algorithmic systems, the consequences of this regulation for labour rights and

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[2] International Labour Organization, *World Employment and Social Outlook 2021: The Role of Digital Labour Platforms in Transforming the World of Work* (ILO 2021)
[3] NITI Aayog, *India's Booming Gig and Platform Economy: Perspectives and Recommendations on the Future of Work* (2022).
[4] Valerio De Stefano, *The Rise of the "Just-in-Time Workforce": On-Demand Work, Crowdwork and Labour Protection in the Gig Economy*, International Labour Office (2016).
[5] Antonio Aloisi, "Commoditized Workers: Case Study Research on Labour Law Issues Arising from a Set of On-Demand/Gig Economy Platforms", (2016) 37 *Comparative Labor Law & Policy Journal*.
[6] Alex Rosenblat & Luke Stark, "Algorithmic Labor and Information Asymmetries: A Case Study of Uber's Drivers", *International Journal of Communication* Vol. 10 (2016).

workers' autonomy, and the current state of the law in responding to this. The use of a socio-legal approach allows for a study to go beyond doctrinal legal analysis and examine the interplay between law, technology and social realities. It seeks to determine if current labor laws adequately provide gig workers with protection from arbitrary algorithmic decision-making and if additional legal protections are necessary to create transparency, accountability, and procedural fairness for gig workers. The research is mainly doctrinal and involves a detailed analysis of relevant legislation, case law, policy literature and the scholarly literature, as well as the analysis of interdisciplinary research on technology and labour relations.

The key element of algorithmic labour control is the mass of data collected and processed about workers. Gig platforms constantly collect data on the workers' location, acceptance rate, customer interactions, delivery time, earnings, and behaviour[7]. AI and data analytics turn this data into actionable information, directly impacting workers' opportunities for jobs and earnings. Automated task allocation is one of the most notable forms of algorithmic control[8]. Instead of workers being assigned tasks by supervisors, algorithms distribute a ride request or delivery order or service assignment to the worker whose parameters match the conditions that best suit the job based on a number of parameters, including proximity, rating, past performance and predicted availability. These systems are frequently touted as unbiased and data-driven, but such systems are frequently shrouded in opacity and lack accountability since workers are not usually aware of how they work.

One more critical aspect of algorithmic trading is rating and reputation. There is often a need for customers to rate workers following the service, and this rating can significantly affect opportunities for workers in the future. Poor ratings may lead to fewer access opportunities to assignments, lower rewards, or even suspension or removal from the platform. In addition, the performance is monitored as it's happening using GPS tracking, productivity parameters, response times, and acceptance rates. With such continuous monitoring, platforms can have a high level of control over the activity of their workers without having to be physically present. As such, algorithmic management marks a new governance model of the workplace where the governance of labour relations is increasingly governed by technological systems, thereby highlighting the socio-legal issues of fairness, autonomy of labour, due process, and the future

[7] European Commission, Proposal for a Directive on Improving Working Conditions in Platform Work (COM/2021/762 final).
[8] OECD, *The Role of Artificial Intelligence in the Labour Market* (2023).

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of labour rights in the digital era.

The Legal Status of Gig Workers in India: Classification and Regulatory Challenges

The surge in platform-based employment in India has ushered in considerable uncertainty about the position of gig workers and the kind of employment they are. The labour law protections have traditionally been based upon the existence of an employer-employee relationship, which includes a situation where the employer exercises control over the worker[9], and therefore is entitled to provide the worker with benefits including minimum wage, social security benefits, workplace safety and protection from arbitrary dismissal. Gig platforms, on the other hand, typically categorize their workforce as independent contractors instead of workers. This classification will enable platforms to not be subject to most of the obligations in labour law and at the same time affirm that labour is flexible and autonomous in terms of when and how it is provided. The main legal question is whether gig workers are truly self-employed[10] and, therefore, entrepreneurs who use the digital platforms for hiring their services or workers who are heavily controlled by the platforms.

But this classification is complicated by the nature of gig work. Gig workers usually have some flexibility in how much they work and might say no to some tasks as well. They don't always come equipped with a laptop computer, smart phones, or even a vehicle as most traditional workers do and are often paid by the job. But, the signs of independence are often accompanied by a high degree of control over key stages of work that is exercised by the platform. Platforms set terms and conditions of engagement, establish performance standards, regulate access to customers, dictate payment structures and control the conduct of workers via digital systems. This means that the line between the employee and independent contractor is further blurred in the new paradigm of platform labour.

A lack of clarity in the law is a major factor in their precarious status. The majority of gig workers have no access to labour protections that are common among employees[11]. They are often subject to unstable income, unstable working conditions and lack of social security

[9] International Labour Organization, *World Employment and Social Outlook 2021: The Role of Digital Labour Platforms in Transforming the World of Work* (2021).
[10] Uber BV v. Aslam [2021] UKSC 5.
[11] Code on Social Security, 2020, §§ 2(35), 2(60), 109–114.

coverage. Workers' earnings can vary significantly based on shifts in demand, platform policies, or algorithmic decisions, which are beyond their control and often not fully understood. Furthermore, because there is no collective bargaining system[12], employees may have only a weak position when it comes to negotiating terms or contesting bad decisions. Though formally classified as an independent contractor, many platform workers are economically reliant on a single platform for their livelihood. This reliance leads to a power dynamic whereby workers face different forms of exploitation, and have fewer legal avenues for recourse. Gig workers' vulnerability was especially pronounced in times of economic disruption and public emergencies, when their income has declined and they became more insecure, without any suitable social protection systems in place.

One of the major drivers of these fragilities is the proliferation of algorithmic control in platform-based labour systems. Digital platforms differ from traditional workplaces where managers are directly overseeing their employees, in that they are instead using algorithms to coordinate and regulate work. Automated task allocation[13] is one of the most crucial of the methods of control. The algorithms are used to calculate several factors such as the geographical location, past performance, acceptance rates, customer ratings and the predicted efficiency of the worker assigned to a certain task. While platforms may present them as objective and effective, in practice, workers tend to know little about the principles behind allocation. This leaves access to jobs and employment opportunities tied to opaque technological processes, with the potential to impact earnings and employment opportunities to a disproportionate degree.

Dynamic pricing and surge algorithms are also crucial to algorithmic control. Prices are often dynamic and change depending on market demand and supply, traffic volume, weather, and user behavior on the platforms. The benefits of surge pricing can raise wages during high-demand periods, but it also can lead to uncertainty and a tendency for workers to adjust their behavior based on the algorithms. In order to maximise income, workers are often forced to work during periods of peak demand, be sent to specific locations, or have to be 'on call' for longer periods. The algorithm, in other words, indirectly defines the form of labour and affects workers' economic choices.

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[12] International Labour Organization, *Care at Work: Investing in Care Leave and Services for a More Gender Equal World of Work* (discussion on collective labour rights in non-standard employment).
[13] *Supra* at 8.

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Also important are rating and reputation systems that can act as effective instruments of behavioural control. Customer ratings are employed to gauge worker efficiency and can influence their eligibility for more tasks, incentives, and involvement in the platform. These systems can leave workers vulnerable to arbitrary or biased assessments given by customers, however, because they have little control over these evaluations. If the rating is bad or if there is supposed to have been a violation of the policy, the account may be deactivated or suspended in most instances. This deactivation is frequently done automatically and without opportunities to explain, appeal, or be reviewed by a human. Platform income is the main source of livelihood for many workers, and the cancellation can have serious economic repercussions. This has led to algorithmic management becoming a potent form of monitoring and management of labour, and one that has had a significant impact upon the experience, opportunities and vulnerabilities of gig workers in the modern digital economy.

Socio-Legal Implications of Algorithmic Labour Control

This growing algorithmic dependence in the gig economy has left a significant socio-legal impact on workers' relationships, forcing a reorganization of old labour relations and a new form of vulnerability[14]. Gig work is frequently marketed as a way to have flexibility and entrepreneurial opportunity on digital platforms, but for many workers, it is a situation of uncertainty, dependence and a lack of legal protection. The lack of a formal employment status and the significant technological control have raised concerns about the economic security of workers, mental health, privacy, bargaining power, etc. In India, millions of people have jobs that are based on the platforms, making these concerns even more important[15].

Job insecurity is one of the most important impacts of platform jobs. Gig workers do not typically have the benefits of a traditional worker, meaning they do not have contractual protections or safeguards against arbitrary dismissal that give them more notice to quit. Access to work is 100% dependent on digital applications, and these can cause a worker to lose their income by suspension of their account or low ratings, or due to the algorithmic decision, which is often not easy to appeal. It is not clear what is being decided, which adds to uncertainty and insecurity. Many employees still don't know what causes them to be given assignments or not, and they worry that one bad event might lead to fewer opportunities or being outright banned

[14] International Labour Organization, *World Employment and Social Outlook 2021: The Role of Digital Labour Platforms in Transforming the World of Work* (International Labour Office, Geneva, 2021).
[15] *Supra* at 3.

from assignment opportunities.

Income uncertainty is very closely tied to job insecurity. Most gig workers are paid for individual jobs, so their income is variable based on the changes in demand, customer habits and algorithms for pricing. Dynamic pricing models and incentives can have a huge impact on daily income, but will not always be explained or be apparent in advance. Employees can have wide fluctuations in pay when they put in the same amount of effort and hard work. Moreover, platforms often continuously and frequently change payment structures, fees, and bonus programs, with little input for the workers and thus little control over their financial security. This volatility makes long-term planning for finances challenging and makes them more vulnerable economically, especially if their only income is through gigs.

There are also significant socio-legal issues where surveillance technologies are being widely used. The platform operators monitor platform workers continuously via GPS tracking, productivity measurements, response times, customer ratings and behaviour analysis. Algorithm systems can be applied to record, analyse and evaluate all movements and interactions. This monitoring may be seen as essential for efficiency and service quality but it can generate a lot of psychological stress. Employees often are under pressure to be available at all times, complete work assignments promptly and keep their performance high in order to prevent penalties. This constant supervision may lead to anxiety, stress, fatigue and a lack of autonomy. When it comes to the algorithmic assessment[16], its inability to grasp or argue with it adds to these mental strains.

Such difficulties are compounded by a significant differential in power between the platform companies and the workers. The digital platforms have control over the technological infrastructure, access to customers, data collection, pricing mechanisms and disciplining, whereas workers have limited leeway to influence the rules of the game. The rules of the platform are generally given ‘take it or leave it' and are seldom negotiable. Gig work is also not always organized and/or unionized, which makes it harder for workers to express their voices for better working conditions. This means that in relation to the use of algorithmic labour control, platforms have a great deal of power, but very few of the traditional duties and liabilities that are part of an employment relationship. This imbalance has raised serious

[16] Justice K.S. Puttaswamy (Retd.) v. Union of India (2017) 10 SCC 1.

concerns on the topic of fairness, accountability and the effectiveness of the current labour legislation in terms of workers' protection in the changing labour market of the digital economy.

Comparative Regulatory Approaches

Other jurisdictions' experiences offer a useful guide on how gig work and algorithmic labour control work is regulated[17]. The proliferation of digital platforms has brought governments and courts new challenges about the nature of platform workers' employment, the responsibility of algorithmic systems for their management, and the effectiveness of current labor laws and protections. The regulatory response to gig work is still being worked out in India[18], but a few models from other countries illustrate the various approaches for tackling challenges of platform-based work. The experiences of the European Union and the United Kingdom in the United States and of the State of California shows a shift in attempts to reconcile technological innovation with efforts to protect workers' rights.

The European Union Platform Work Directive is just one of the most recent initiatives aimed at enhancing working conditions for those who work through platforms in the EU member states. The Directive[19] addresses the worries about many platform workers being classified as self-employed while being heavily controlled by the platform. One of the main aspects of the Directive is the establishment of a legal presumption of control in the presence of specific factors. This puts the onus on platforms to prove that their workers are indeed self-employed. The Directive also addresses the increasing impact of algorithmic trading, with increased transparency on algorithmic decision-making systems. Platform workers have the right to access information[20] regarding the impact of algorithms on the allocation of tasks, performance measurement, compensation, and disciplinary action. Moreover, the Directive requires human intervention for important automated decisions, which helps mitigate the dangers of completely black-boxed algorithmic decision-making. The European approach is to show a new awareness that technological management should not be outside the scope of protection of labour law and fundamental rights.

In the United Kingdom, a significant judicial advancement can be noted in the Uber BV v.

[17] *Supra* at 2.
[18] *Supra* at 3.
[19] Directive (EU) 2024/2831, Chapter III.
[20] Directive (EU) 2024/2831, Articles 9–14.

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Aslam[21] case. In the present case, the Supreme Court of the United Kingdom ruled that Uber drivers were not independent contractors, but were in fact considered "workers" for the purposes of British employment law. The Court noted that the "labels" assigned by the platform did not constitute the key element in determining the nature of the relationship. Factors that impacted the decision were Uber's control over fares, contractual terms, performance monitoring, and access to customers[22]. Although technically they were said to be self-employed, the Court noted that drivers were under the control of both the public and their employers. Consequently, Uber drivers now have entitlement to significant labor rights, such as minimum wage, paid annual leave, and other statutory benefits. In the international context, the judgment is relevant for its recognition of the potential for the creation of 'employment-like' relationships in relation to digitally mediated employment.

A model that has been influential is California's Assembly Bill 5 (AB-5), which was enacted in 2019 to combat worker misclassification in the gig economy. This law included the concept of the "ABC Test"[23] which assumes a worker is an employee unless the business can prove certain criteria which prove independence. In this model, the company would have the burden of demonstrating that the worker is not under the company's control and the work is outside of the company's normal course of business[24]. This law was generally interpreted as an effort to bring gig workers under the umbrella of employment rights, like those of Uber and Lyft. But AB-5 triggered significant controversy and sparked political and legal debate regarding its scope and application[25]. However, the California model is important as one of the most ambitious attempts in the world to reclassify workers who use platforms and secure traditional labour rights.

These comparisons help to identify the international trend of strengthened scrutiny of platform business models and algorithmic management practices[26]. Although they take various forms, they all have the same goal, which is to prevent the loss of labour rights due to technological innovations and to ensure appropriate protection for workers in a digital economy. This kind of experience can be useful for India to create a more robust legal structure for gig workers as

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[21] *Supra* at 10.
[22] I*d* at paras. 90–101.
[23] Dynamex Operations West, Inc. v. Superior Court, 4 Cal.5th 903 (2018).
[24] California Labor Code § 2775.
[25] California Proposition 22 (2020).
[26] *Supra* at 3.

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well as the algorithmic regulation of labour.

Recommendations: Towards a Fair and Accountable Regulatory Framework

Algorithmic management is becoming increasingly prevalent in digital platforms, raising the question of how it will affect the nature of labour relations and the regulatory gaps within the existing legal frameworks. Technological innovation has facilitated increased efficiency and broadened economic possibilities, but also introduced new dimensions of control, which may be more or less transparent and accountable. Gig workers are becoming more and more reliant on gig job platforms, and there is an urgent need for laws and policies to better safeguard their rights against unfair discretion while maintaining the advantages of technological progress. Regulatory efforts should strive to achieve a balance between innovation and fairness, so that algorithmic systems are designed in a way that respects labour justice, human dignity and due process[27].

Algorithm transparency obligations are one of the most critical reforms needed. In the current context, many platform workers are not well aware of how the algorithms are used to allocate tasks, prices, performance assessments, incentives or disciplinary actions[28]. The criteria these systems can use are frequently considered proprietary, and are inaccessible to those whose jobs rely on these systems. This opacity makes uncertainty and hampers workers' ability to understand and question decisions that have a major impact on their wages and job prospects. Platforms should thus be mandated to provide key information on the functioning of algorithmic systems, especially if they have an impact on access to employment, wages, ratings, or disciplinary measures, among other things. Transparency does not always mean giving out trade secrets or source codes, but rather presenting useful information on the factors, criteria and logic that influence the key factors of the decisions[29]. A more transparent environment would boost trust, decrease information asymmetry, and increase accountability in the digital labour markets.

This is related to transparency, and the principle of a worker's right to explanation is also

[27] Organisation for Economic Co-operation and Development, *OECD Principles on Artificial Intelligence* (2019, updated 2024).
[28] *Supra* at 6.
[29] European Commission, Proposal for a Directive on Improving Working Conditions in Platform Work, COM(2021) 762 final.

recognized. The automated decision making systems make decisions that can have a significant impact on the worker such as limiting task assignments, decreasing incentives, suspending or even terminating accounts. Workers are often not told why these decisions are made and have limited right to challenge the decision. This situation brings forth concerns over procedural fairness and natural justice. A right to explanation would mean platforms would be obliged to explain, in an understandable manner, why they have made the decisions made by their algorithms where they have a significant impact on the interests of a worker. Effective grievance redressal systems should be in place and opportunities for human review of contested decisions should be available for the workers. These protections would prevent arbitrary outcomes and protect workers from digital governance that is unclear, transparent, opaque, and without recourse and remedy.

Collective bargaining rights for gig workers is another key space of reform. Platform working can be individual and dispersed, making collective action difficult, and giving platforms the opportunity to impose strong influence on terms and conditions of work[30]. Collective bargaining rights have typically been attached to formal employment contracts, giving few opportunities for representation to gig workers. Consequently, policy makers would do well to start thinking about giving collective representation rights to platform workers, regardless of whether they are classified as such. As gig workers are recognised as worker associations, unions, and as collective negotiation processes, they can be more involved in the decision-making process concerning wages, working conditions, algorithmic policies, and dispute resolution procedures. Collective Bargaining is a meaningful force to balance out the economic and technological power of the digital platforms.

Last but not least, the accountability of platforms is crucial to responsible and fair governance of digital labour markets[31]. Platforms must not be allowed to avoid liability by invoking intermediary status and, at the same time, have extensive influence on the employees of other companies via algorithmic systems. Legislation must stipulate specific duties on worker welfare, data protection, non-discrimination and procedural fairness. Periodic reviews of algorithmic systems are the potential addition to uncover biases, discriminatory results, or unfair practices. Additionally, regulatory bodies need to have a system in place to monitor compliance and to take action when a platform doesn't meet legal standards. Platforms need to

[30] *Supra* at 12.
[31] *Supra* at 10.

be held accountable for the impacts of algorithms used as tools of management for workers' livelihoods. To guarantee that technological innovations keep developing in tandem with the safeguarding of labour rights and social justice in the changing gig-economy, a comprehensive regulatory framework involving transparency, rights to explanation, collective representation, and accountability is needed.

Conclusion

The development of the gig economy has created a new paradigm of labour relations, bringing about a new type of labour relations mediated through digital platforms and algorithmic technologies. Platform-based jobs are an increasingly significant means of livelihood for millions of people in India, including those engaged in transportation, food delivery, logistics and online services. These platforms have introduced the concept of flexible work and income generation, but they have also raised many legal and social issues. In contrast to traditional employment, gig work is mediated by digital platforms that increasingly manage the workforce by algorithm and not by humans. Consequently, the traditional definition of managerial control, employment relationship and labour rights is being redefined, and existing law frameworks are sometimes inadequate in dealing with the implications of these developments.

The analysis carried out in this study shows that algorithmic labour control is one of the key aspects of the contemporary gig economy. Digital platforms have a significant impact on the economic rights and working conditions of workers, for example by means of automatic task selection, fluctuating pricing, ranking mechanisms, on-going performance monitoring, suspension and termination of accounts, etc. Workers are often described as independent contractors, but the control that is exercised over them via algorithmic systems can be similar to what employers traditionally have exerted. This paradox has sparked debates about worker classification, labour rights and platform liability.

The socio-legal aspects of algorithmic management are of special interest. Gig workers often find themselves in insecure jobs, unpredictable pay, constant digital monitoring, and without a means to fight back against negative outcomes. Algorithmic systems, with their opacity, only compound these vulnerabilities, as workers are unable to understand how decisions impact their livelihood. Further, the power differential between workers and platforms can leave workers with limited bargaining power and a lack of voice in setting the conditions under which they are employed. The problems raised demand a re-thinking of the notion of labour law in the face of the technological evolutions which have a growing impact on the modern types of employment relations.

While India has made significant strides in the recognition of gig and platform workers in the Code on Social Security, 2020, the current legal framework is still restrictive and fragmented. The comparative analysis of jurisdictions like the European Union, the United Kingdom and California shows a world-wide trend of tackling issues of worker misclassification, increasing transparency of algorithms and expanding labour rights to platform employees. They offer good lessons for India to consider in the context of evolving a more holistic regulatory regime. Finally, it is essential to recognize that technological advancement cannot be used to attack workers' rights and dignity. In order to ensure effective governance of the gig economy, there is a need for more transparency in algorithms, the meaningful right to explanation, greater collective bargaining power and platform accountability. A balanced and rights based approach by policy makers can help ensure digital platforms are contributing to economic growth and maintaining fairness, justice and decent working conditions for those whose work supports the digital economy. What is challenging in the future is no longer opposition to technology, but maintaining its sustainability within the core values of social and economic equity.