

## **Algorithmic Management and Labour Protection in India's Gig Economy: A Critical Analysis of Worker Experiences and Recent Legislative Reforms**

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### **ABSTRACT**

*This paper examines the evolving landscape of India's gig economy through the dual lenses of algorithmic management systems and recent labour law reforms. Drawing on primary interviews with platform workers in Delhi-NCR and analysis of the Code on Social Security, 2020, this study reveals a complex paradox: while India has enacted progressive legislation to formalize and protect gig workers, the lived experiences of these workers remain characterized by algorithmic opacity, income instability, and limited access to statutory benefits. The research employs a mixed-methods approach combining qualitative interviews with delivery partners on platforms like Blinkit, secondary analysis of policy documents, and critical examination of algorithmic management practices. Key findings indicate that despite legislative recognition and the establishment of social security frameworks, significant implementation gaps persist. Workers face declining incentives, unpredictable algorithmic task allocation, lack of transparency in performance metrics, and minimal awareness of their legal entitlements. The study identifies gender-specific vulnerabilities, highlighting how female gig workers encounter additional barriers including safety concerns and absence of maternity benefits. This paper contributes to the growing body of literature on platform capitalism by contextualizing India's gig economy within the framework of algorithmic governance and argues that effective worker protection requires not only legislative reform but also algorithmic transparency, grievance redressal mechanisms, and gender-sensitive policy implementation. The research concludes with recommendations for platform accountability, minimum wage guarantees, and worker-centric algorithmic design that prioritizes dignity alongside efficiency.*

**Keywords:** Gig economy, algorithmic management, platform workers, Code on Social Security 2020, labour rights, India, social protection, gender and work, digital economy

## **1. Introduction**

The past decade has witnessed a fundamental transformation in labour markets globally, driven by the emergence of digital platforms that mediate work relationships through algorithmic systems (Kellogg, Valentine, & Christin, 2020; Wood et al., 2019). India, with its young demographic dividend, rapid urbanization, and increasing smartphone penetration, has emerged as one of the fastest-growing gig economy markets in the world. According to NITI Aayog's report, the country's gig workforce numbered 7.7 million in 2020-21 and is projected to expand to 23.5 million by 2029-30, representing a significant shift in how millions of Indians earn their livelihoods (NITI Aayog, 2022).

This expansion has been particularly pronounced in urban centers where platforms such as Swiggy, Zomato, Uber, Ola, Dunzo, and Blinkit have become integral to the service economy. These platforms promise workers autonomy, flexibility, and the ability to earn based on individual effort, narratives that resonate strongly in a country where traditional employment opportunities have failed to keep pace with a burgeoning young workforce. Simultaneously, the global gig economy is projected to exceed \$450 billion by 2025, positioning platform-mediated work not as a marginal phenomenon but as a central pillar of contemporary capitalism (Mastercard & Kaiser Associates, 2019).

Yet beneath the discourse of flexibility and entrepreneurship lies a more complex reality. Gig workers operate under the governance of algorithmic management systems, sophisticated software that assigns tasks, monitors performance, calculates pay, and determines worker ratings, often with minimal human oversight (Rosenblat & Stark, 2016; Veen, Barratt, & Goods, 2020). These algorithms function as invisible managers, exercising control through data-driven mechanisms that workers neither fully understand nor can meaningfully contest. This opacity creates asymmetries of power and information, positioning workers in a state of perpetual uncertainty regarding how their labor is valued, compensated, and evaluated.

Recognizing these challenges, the Indian government implemented the Code on Social Security, 2020 (hereinafter referred to as SS Code), representing one of the most comprehensive legislative attempts globally to formalize platform work and extend social protections to gig workers. The SS Code, part of India's broader labour law consolidation, formally recognizes gig and platform workers, mandates aggregator contributions to a Social Security Fund, and establishes frameworks for benefits including life and disability coverage, health and maternity benefits, pension schemes, and accident insurance (Ministry of Labour and Employment, 2020; Press Information Bureau, 2025).

This paper examines the critical gap between legislative intent and lived experience, analyzing how algorithmic management systems interact with, and often undermine, statutory protections. Through qualitative research with delivery workers in Delhi-NCR and critical policy analysis, this study addresses three central research questions:

1. How do algorithmic management systems shape the daily work experiences, income stability, and autonomy of gig workers in India?
2. To what extent do workers experience the benefits and protections established under the Code on Social Security, 2020?
3. What are the gender-specific dimensions of vulnerability and protection within India's platform economy?

By integrating worker narratives with policy analysis, this research contributes to critical debates on platform capitalism, algorithmic governance, and the future of work in the Global South. It argues that legislative recognition, while necessary, is insufficient without accompanying mechanisms for transparency, enforcement, and worker voice in algorithmic decision-making.

## **2. Literature Review**

### **2.1 Algorithmic Management and Platform Labour**

The concept of algorithmic management has emerged as a central framework for understanding contemporary platform labour. Kellogg et al. (2020) define algorithmic management as the use of algorithms to direct, optimize, and evaluate work, effectively replacing traditional human supervisory roles with automated systems. This shift represents what Vallas and Schor (2020) characterize as 'algorithmic control', a form of workplace governance that operates through data collection, automated decision-making, and performance metrics embedded in digital infrastructure.

Research on ride-hailing platforms has demonstrated how algorithmic systems exercise multifaceted control over workers. Rosenblat and Stark (2016) document how Uber's algorithms shape driver behavior through opaque surge pricing mechanisms, asymmetric information flows, and gamified incentive structures that encourage longer working hours. Similarly, Cameron (2022) identifies how food delivery platforms employ 'soft control' mechanisms, dynamic pricing, rating systems, and variable rewards, that make workers complicit in their own intensified exploitation by internalizing platform metrics as measures of personal worth.

A critical dimension of algorithmic management is its opacity. Workers typically lack access to the decision-making logic embedded in platform algorithms, what Lee, Kusbit, Metsky, and

Dabbish (2015) term 'algorithmic inscrutability.' This opacity extends across multiple dimensions: task allocation mechanisms, pricing calculations, rating systems, and account deactivation processes often operate as black boxes, leaving workers unable to understand, predict, or contest algorithmic decisions that fundamentally shape their earning capacity and work conditions (Möhlmann & Zalmanson, 2017).

The Indian context adds additional layers to this global phenomenon. Research by Anwar and Graham (2020) on food delivery workers in Bangalore reveals how algorithmic systems operate differently in contexts marked by high labor supply, limited alternative employment, and weak enforcement of existing labor regulations. They find that Indian platform workers face intensified competition, declining per-task payments, and algorithmic systems calibrated to extract maximum labor at minimum cost, dynamics enabled by the abundance of workers seeking even precarious income opportunities.

## **2.2 Social Protection and the Regulatory Challenge**

Platform work exists in a regulatory grey zone between traditional employment and independent contracting, a classification ambiguity that platforms actively exploit to minimize labor costs and legal obligations (De Stefano, 2016). By designating workers as independent contractors rather than employees, platforms avoid responsibilities associated with traditional employment including minimum wages, social security contributions, overtime pay, and various statutory benefits (Prassl & Risak, 2016).

This classification has profound consequences for worker welfare. Research by the International Labour Organization (2021) documents how the absence of social protection leaves platform workers vulnerable to income shocks from illness, injury, or platform algorithm changes. Without access to healthcare, unemployment insurance, or retirement savings programs, gig workers bear individualized risks that were previously socialized through employer-employee relationships or state welfare systems (Standing, 2011).

Globally, jurisdictions have responded to this regulatory challenge through varied approaches. European countries have pursued reclassification strategies, with courts in the United Kingdom, France, and Spain ruling that platform workers should be considered employees entitled to corresponding protections (Aloisi & De Stefano, 2022). California's Proposition 22 exemplifies a different approach, creating a third category specifically for app-based drivers with limited benefits but continued contractor status, a model criticized by labor advocates as cementing platform power while providing inadequate protections (Dubal, 2020).

India's SS Code represents a distinct regulatory approach that recognizes gig workers as a separate category requiring specific protections without reclassifying them as traditional

employees. This approach, analyzed by Srujana and Vasavi (2021), attempts to balance platform flexibility with worker security by mandating aggregator contributions to social security funds while maintaining the contractor relationship. However, early assessments suggest significant implementation challenges including low worker registration rates, inadequate fund mobilization, and limited worker awareness of entitlements.

### **2.3 Gender Dimensions of Platform Work**

While much platform labour research focuses on male-dominated sectors like ride-hailing and food delivery, emerging scholarship reveals how gender shapes platform work experiences across multiple dimensions. Hunt and Machingura (2016) document how women platform workers face distinct challenges including safety risks, lack of workplace facilities (particularly sanitation and childcare), and cultural norms that restrict mobility and working hours.

In the Indian context, research by the All India Gig Workers' Union reveals systemic gender gaps in platform work. Female gig workers report higher rates of harassment, both from customers and in navigating urban spaces at night. Platforms typically provide minimal safety features for women workers, with some companies removing emergency alert functions that women workers identify as crucial for their security (The Leaflet, 2023). Additionally, the absence of maternity benefits, childcare support, and menstrual leave creates particular hardships for women workers who must balance reproductive labor with platform demands.

The SS Code includes provisions for maternity benefits within its social security framework, representing potentially significant protection for female gig workers. However, implementation requires not only legislative recognition but also platform cooperation, worker awareness, and administrative infrastructure, elements whose presence remains uncertain in practice. Furthermore, the Code's gender-neutral language may inadequately address the specific vulnerabilities that structure women's experiences of platform work.

### **2.4 Research Gap and Contribution**

While existing literature has examined algorithmic management in platform work and analyzed India's labour code reforms separately, limited research has empirically investigated how these legislative protections interact with algorithmic governance systems in shaping worker experiences. This paper addresses this gap by combining worker narratives with policy analysis, examining not only what the SS Code promises but how its provisions materialize or fail to materialize, in the lived experiences of platform workers navigating algorithmic management. By centering worker voices alongside regulatory frameworks, this research contributes to understanding the complex dynamics between law, technology, and labour in India's digital economy.

### **3. Methodology**

This study employs a mixed-methods approach combining qualitative empirical research with critical policy analysis. The methodological framework is designed to capture both the subjective experiences of gig workers and the structural conditions shaped by algorithmic systems and regulatory frameworks.

#### **3.1 Primary Data Collection**

Primary data was collected through semi-structured interviews and focus group discussions with delivery partners working for Blinkit and similar quick-commerce platforms in the Delhi-NCR region. The Delhi-NCR area was selected as the research site due to its status as one of India's largest markets for platform-based delivery services, characterized by high platform penetration, competitive labor markets, and diverse worker demographics.

Participant recruitment utilized a combination of purposive and snowball sampling. Initial contacts were established at delivery hubs and through workers' informal networks, with subsequent participants recruited through referrals. The sample comprised workers aged 19-35 years, most of whom had been engaged in gig work for over one year, providing sufficient experience to reflect on changes in platform policies and working conditions over time.

Interviews were conducted in Hindi, the primary language of most respondents, lasting between 30-60 minutes. The interview protocol covered several thematic areas including entry into gig work, daily work routines, experiences with platform algorithms, income patterns, access to benefits, awareness of legal rights, workplace challenges, and future aspirations. Focus group discussions, involving 6-8 workers each, facilitated collective reflection on shared experiences and enabled participants to validate or contest each other's perspectives.

Ethical considerations guided all aspects of data collection. Participants were informed about the research purpose, their right to withdraw at any time, and measures to protect their anonymity. Given workers' vulnerability to platform retribution for critical statements, all identifying information was removed from transcripts and pseudonyms are used in reporting findings. Interviews were recorded with explicit consent and transcribed verbatim for analysis.

#### **3.2 Secondary Data Analysis**

Secondary research drew on multiple documentary sources including:

- The Code on Social Security, 2020, and associated government circulars and guidelines

- Policy reports from NITI Aayog on India's gig economy projections and recommendations
- Press releases and official communications from the Ministry of Labour and Employment
- Academic literature on platform labour, algorithmic management, and social protection
- Media reports documenting worker protests, platform policy changes, and enforcement activities
- Publications from workers' organizations and civil society groups advocating for gig worker rights

This documentary analysis provided essential context for understanding the regulatory environment within which workers operate and enabled systematic comparison between legislative provisions and their practical implementation.

### **3.3 Data Analysis**

Interview transcripts were analyzed using thematic analysis following Braun and Clarke's (2006) framework. Initial coding identified recurring patterns, experiences, and perspectives across participant narratives. These codes were then organized into broader themes reflecting key dimensions of workers' relationship with algorithmic management and regulatory frameworks. Themes were iteratively refined through constant comparison within and across transcripts, with attention to both dominant patterns and outlying experiences.

Policy documents were subjected to critical discourse analysis, examining not only explicit provisions but also silences, assumptions, and contradictions within regulatory texts. Particular attention was paid to discrepancies between legislative intent and implementation mechanisms, and between the rights formally recognized and workers' reported experiences of accessing those rights.

### **3.4 Limitations**

Several limitations constrain the scope of this research. The study focuses specifically on delivery workers in one metropolitan region, limiting generalizability to other platform sectors (such as ride-hailing, domestic work, or digital freelancing) or other geographic contexts within India. The relatively small sample size, while appropriate for qualitative research, cannot capture the full diversity of gig worker experiences across India's vast and heterogeneous labor market.

Additionally, as the SS Code is relatively recent and implementation is ongoing, this research captures an early snapshot of its effects. Longer-term longitudinal research will be necessary to assess whether initial implementation challenges are overcome or become entrenched. Finally,

this study relies primarily on worker perspectives; future research incorporating platform company viewpoints, government enforcement agencies, and comparative international perspectives would provide a more comprehensive understanding of the complex dynamics shaping India's platform economy.

Despite these limitations, the research provides valuable insights into how algorithmic management and regulatory frameworks intersect in shaping the conditions of India's growing gig workforce, offering both empirical evidence and theoretical contributions to debates on platform labour governance.

#### **4. Findings**

The findings section presents empirical evidence from worker interviews alongside analysis of the SS Code's provisions, revealing a complex landscape where legislative protections exist formally but remain largely inaccessible to workers navigating opaque algorithmic systems. The analysis is organized thematically to address key dimensions of platform work experiences and regulatory gaps.

##### **4.1 The Initial Appeal: Flexibility and Immediate Income**

Consistent with platform companies' marketing narratives, many workers initially entered gig work attracted by promises of flexibility, autonomy, and performance-linked earnings. Several respondents described how platform work offered immediate access to income during transitions between traditional employment or while pursuing education. As one delivery partner explained:

*"The more you work, the more you earn. When you want, you can take the day off."*

This perceived flexibility contrasts sharply with traditional employment where working hours and leave are determined by employers. For young workers without formal credentials or with gaps in their employment history, platforms offered entry points into urban labor markets that might otherwise exclude them. The ability to start earning within days of registration, without extensive background checks or credential verification, represented a significant advantage over conventional job search processes.

Additionally, some workers valued performance-based incentives during high-demand periods. Reaching target delivery numbers within specified timeframes could yield financial bonuses, creating possibilities for higher earnings during festivals, weekends, or evening hours when customer demand peaked. For workers willing and able to work extended hours during these periods, the incentive structures appeared to reward effort directly.

Several respondents also mentioned instances of platform support during workplace injuries. One worker described how a colleague who injured his leg while on duty received daily compensation from Blinkit to support his family during recovery, a form of assistance that, while limited, exceeded what many informal sector workers could expect. These early positive experiences reinforced initial perceptions of platform work as viable employment.

#### **4.2 Algorithmic Opacity and Declining Compensation**

However, these initial advantages proved increasingly illusory as workers gained experience with platform algorithms. A dominant theme across interviews was the gradual erosion of earning potential despite constant or increased labor input. Workers reported that incentive structures that initially made gig work financially viable were progressively reduced without notice or explanation. As one respondent stated:

*“Earlier, what you could earn in 9 hours now takes 12-14 hours.”*

This pattern reflects broader platform strategies documented in the literature: initial subsidies and generous incentives to build worker supply, followed by systematic reduction of per-task payments once sufficient workers are locked into platform dependence. The effect is intensified work without proportional compensation, workers must complete more deliveries, work longer hours, and accept tighter deadlines simply to maintain previous income levels.

These changes occurred through algorithmic adjustments rather than explicit policy announcements. Workers discovered reduced bonuses, stricter targets, or lower per-delivery rates only through their actual earnings, with no advance notice or explanation from platforms. The opacity of these changes prevented workers from making informed decisions about their labor allocation or from organizing collective responses to deteriorating conditions.

This tension between platform promises and algorithmic reality materialized dramatically in April 2023 when Blinkit delivery workers-initiated strikes protesting a revised incentive structure. Previously, workers received an assured base pay of ₹25 per delivery supplemented by performance incentives. The new structure eliminated the base pay entirely, shifting all compensation to variable performance-based earnings. As reported by The Ken, this change prompted widespread protests highlighting growing unrest over declining earnings and compensation opacity.

#### **4.3 Rating Systems as Disciplinary Mechanisms**

Beyond compensation, algorithmic systems exercise control through performance metrics and rating mechanisms that heavily influence workers' access to tasks and earnings. Every delivery

generates customer ratings that aggregate into worker performance scores - scores that algorithms use to allocate orders, determine bonus eligibility, and trigger account sanctions or deactivations.

Workers described rating systems as sources of constant anxiety. Delays caused by traffic, incorrect addresses provided by customers, restaurant preparation times, or even customer dissatisfaction with product quality - factors beyond delivery workers' control, could result in negative ratings that damage workers' performance metrics. As ratings decline, algorithms assign fewer high-value orders, creating downward spirals where workers struggle to rebuild their scores while receiving less lucrative tasks.

Critically, the lack of transparency prevents workers from understanding or contesting rating decisions. Platforms rarely provide detailed explanations for low ratings, leaving workers uncertain about what specifically went wrong or how to improve. This inscrutability functions as a disciplinary mechanism: workers internalize responsibility for algorithmic judgments they cannot see or challenge, experiencing performance metrics as measures of personal inadequacy rather than products of opaque automated systems.

This dynamic reflects what Rosenblat (2018) identifies as algorithmic management's 'responsibilization' - platforms construct workers as entrepreneurs responsible for their own success or failure while systematically obscuring how algorithmic decisions constrain that success. Workers experience the effects of algorithms (fewer orders, lower earnings, account suspensions) without access to the logic producing those effects, generating what several respondents described as feeling perpetually monitored yet fundamentally unsupported.

#### **4.4 Job Insecurity and Income Volatility**

Despite rhetoric of flexibility, workers' experiences reveal profound insecurity underlying platform employment. While most respondents indicated that sufficient work was generally available for those willing to work long hours, this availability depends entirely on algorithmic and platform decisions that workers cannot predict or influence. If algorithms change, customer demand drops, or platforms reduce incentives, workers have no recourse.

The absence of formal contracts, fixed salaries, or minimum wage guarantees means workers' earnings remain tied simultaneously to their individual effort and to opaque platform dynamics beyond their control. This dual dependency creates fundamental uncertainty: workers cannot know whether reduced earnings reflect insufficient personal effort, algorithmic changes, market conditions, or platform strategies. The inability to distinguish among these factors prevents workers from developing stable income expectations or engaging in long-term financial planning.

Moreover, platform work offers no protection against income loss from illness, injury, or other personal emergencies. While some platforms provide limited accident insurance, most workers lacked awareness of coverage details or claims processes. Workers described colleagues who, after serious injuries, found themselves without income and unclear about what support, if any, platforms would provide. This individualization of risk stands in stark contrast to traditional employment where sick leave, workers' compensation, and other protections socialize risks across employer and state systems.

#### **4.5 The Gap Between Legislative Protections and Lived Reality**

The Code on Social Security, 2020 establishes comprehensive protections for gig and platform workers, representing significant legislative recognition of this workforce. As detailed in the December 2025 Press Information Bureau release, the SS Code formally defines gig workers, platform workers, and aggregators; mandates aggregator contributions of 1-2% of annual turnover to a Social Security Fund; and establishes frameworks for life and disability coverage, health and maternity benefits, pension schemes, accident insurance, and creche facilities.

Additionally, the Code envisions portable benefits through a unique Aadhaar-linked identification system registered on the e-Shram portal, allowing workers to maintain social security access across platforms. The Code also provides for grievance redressal mechanisms including toll-free helplines and facilitation centers to address worker concerns.

However, workers interviewed for this study demonstrated minimal awareness of these provisions and virtually no experience of accessing promised benefits. When asked about social security entitlements, most workers expressed confusion. Some had heard vaguely about registration on e-Shram but were unclear about its purpose or whether they had successfully registered. None could describe specific benefits they were entitled to or processes for claiming them.

This gap between legislative intent and worker experience reflects multiple implementation failures. First, there has been inadequate communication of legal rights to workers. Platforms have not systematically informed workers about SS Code provisions, and government outreach has been limited. Second, the registration process itself presents barriers. Workers described difficulties navigating digital registration systems, particularly those with limited formal education or digital literacy. Third, even workers nominally registered on e-Shram were unsure whether their registration translated into actual benefit access.

Furthermore, workers had no knowledge of aggregator contributions to social security funds or how those funds were being utilized. The opacity surrounding Social Security Fund mobilization and distribution mirrors the broader opacity of algorithmic management, workers remain in the

dark about systems ostensibly designed to protect them, whether those systems are corporate algorithms or government welfare schemes.

The disconnect between formal rights and practical access suggests that legislative recognition alone is insufficient. Without enforcement mechanisms, worker awareness campaigns, simplified registration processes, and transparent benefit distribution, the SS Code risks remaining symbolic, a progressive policy that fails to materially improve workers' conditions.

#### **4.6 Gender-Specific Vulnerabilities**

While women constitute a smaller proportion of India's platform delivery workforce, their experiences reveal heightened vulnerabilities that current regulatory frameworks inadequately address. Female gig workers face systemic challenges across safety, workplace infrastructure, and social protection that reflect both platform design failures and broader gender inequalities.

Safety concerns emerged as paramount for women workers. Female delivery partners and ride-hailing drivers reported harassment from customers and vulnerability while navigating urban spaces, particularly during evening or night hours when platform incentives are highest. Research by The Leaflet documents how platforms have removed safety features specifically requested by women workers, such as emergency alert functions that allowed immediate contact with authorities or designated contacts during threatening situations.

The absence of adequate workplace facilities compounds these challenges. Women workers lack access to safe rest areas, sanitation facilities appropriate for menstruation and hygiene needs, or childcare support that would enable them to work without compromising care responsibilities. Platform work models assume workers without reproductive labor obligations - an assumption that particularly disadvantages women who continue to bear primary responsibility for domestic and care work in Indian households.

Regarding social protection, the All India Gig Workers' Union reports that many female platform workers lack access to health insurance, maternity benefits, and other social security measures. While the SS Code includes maternity benefits within its provisions, implementation remains uncertain. None of the women workers interviewed (though a small subsample) had accessed maternity leave or benefits through platforms. The absence of formal employment contracts means women miss protections available to traditional employees including paid maternity leave, workplace accommodations during pregnancy, and protection against termination related to pregnancy or childcare.

These gender-specific vulnerabilities highlight limitations in both platform design and regulatory frameworks. Platforms optimize for efficiency and cost minimization without consideration for

safety, infrastructure, or social protection needs that disproportionately affect women. Similarly, while the SS Code represents progress in recognizing gig workers, its gender-neutral language may prove insufficient to address structural inequalities that shape women's platform work experiences differently from men's.

#### **4.7 The Demand for Dignity and Recognition**

Beyond material concerns about pay, benefits, and working conditions, workers articulated a fundamental need for dignity and recognition. This emerged poignantly in one worker's statement:

*“Work is fine, but we should get respect too”.*

This demand for respect/dignity reflects workers' awareness that algorithmic management reduces them to data points performance metrics, ratings, and efficiency scores - while erasing their humanity, skill, and labor. Workers understand themselves as integral to platforms' business models yet experience treatment as disposable, replaceable units in optimization algorithms.

The demand for dignity encompasses multiple dimensions: recognition of workers' contributions to platform profitability and urban service delivery; voice in decisions about working conditions and compensation; transparency regarding algorithmic systems that govern their work; and grievance mechanisms that treat their concerns seriously rather than as impediments to algorithmic efficiency.

Workers also expressed uncertainty about long-term viability. While platform work provided immediate income, few envisioned it as sustainable long-term employment. The combination of income volatility, absent social protections, physical demands, and lack of skill development meant workers viewed gig work as temporary necessity rather than dignified career. This temporariness reflects platform capitalism's fundamental contradiction: it requires sustained, reliable labor while constructing that labor as contingent, precarious, and disposable.

### **5. Discussion**

The findings reveal a fundamental tension between India's progressive legislative framework for platform workers and the algorithmic systems that structure workers' daily experiences. While the Code on Social Security, 2020 represents significant regulatory innovation in formally recognizing gig workers and establishing social protection mechanisms, this research demonstrates substantial gaps between legal provisions and lived realities.

### **5.1 Algorithmic Power and Regulatory Limitations**

Algorithmic management systems function as a form of control that operates below the threshold of traditional labour regulation. While the SS Code establishes workers' rights to social security, grievance mechanisms, and portable benefits, it does not substantively regulate algorithmic decision-making processes that fundamentally determine workers' income, working conditions, and employment security.

Platforms retain complete discretion over compensation structures, task allocation mechanisms, performance evaluation criteria, and account status determinations - all exercised through opaque algorithms that workers cannot see, understand, or contest. This algorithmic sovereignty undermines formal protections: workers may have legal rights to benefits, but if algorithms reduce their task allocation or earnings below subsistence levels, those legal rights provide limited practical protection.

The pattern of declining per-task payments and intensified work requirements documented in this research reflects platforms' ability to adjust algorithmic parameters without worker consent or notification. The 2023 Blinkit strikes illustrate this dynamic: platforms can fundamentally restructure compensation through algorithmic changes that workers discover only through actual earnings, leaving workers with minimal capacity to negotiate or resist beyond disruptive protest.

This suggests regulatory frameworks for platform work must extend beyond establishing social security funds to include algorithmic transparency requirements, limits on unilateral algorithmic changes, and worker voice in platform governance. Without such provisions, platforms can comply nominally with social security legislation while maintaining total control over the underlying conditions that determine whether workers can earn sufficient income to survive, let alone thrive.

### **5.2 The Implementation Gap: From Rights to Reality**

The disconnect between workers' minimal awareness of legal entitlements and the SS Code's comprehensive provisions reveals serious implementation failures. Legislative recognition of rights means little if workers do not know those rights exist, cannot navigate systems to access them, or face barriers in translating formal entitlements into actual benefits.

This implementation gap reflects several interrelated problems. First, there has been inadequate government investment in worker awareness and outreach. Simply passing legislation and creating registration portals is insufficient; effective implementation requires proactive education campaigns, multilingual information in accessible formats, and support systems that assist workers in navigating bureaucratic processes.

Second, platforms have not been compelled to facilitate worker access to statutory benefits. The SS Code mandates aggregator contributions but does not require platforms to actively inform workers about benefits, assist with registration, or integrate social security access into platform interfaces. Given platforms' informational advantages and direct communication channels with workers, their non-cooperation represents a significant barrier to effective implementation.

Third, the complexity of digital registration systems creates exclusionary barriers, particularly for workers with limited formal education or digital literacy. The e-Shram portal, while conceptually sound as a unified registration platform, becomes exclusionary if workers cannot navigate it independently and lack institutional support in completing registration.

Finally, there is inadequate transparency and accountability regarding Social Security Fund mobilization and utilization. Workers have no visibility into whether platforms are making required contributions, how funds are being managed, or what benefits are actually available. This opacity reproduces at the regulatory level the same informational asymmetries that characterize algorithmic management, workers remain in the dark about systems purportedly designed for their benefit.

### **5.3 Gender, Intersectionality, and Incomplete Protection**

The gender-specific vulnerabilities documented in this research demonstrate how regulatory frameworks that treat workers as undifferentiated categories fail to address structural inequalities that shape work experiences differently across social identities. While the SS Code's inclusion of maternity benefits represents important recognition of gender-specific needs, the provision remains inadequate without accompanying attention to safety, infrastructure, and workplace design.

Female platform workers face challenges that emerge from the intersection of platform precarity and patriarchal social structures. Harassment, lack of sanitation facilities, and absent childcare support are not incidental problems but reflect how platform business models assume workers who are male, unencumbered by care responsibilities, and able to work any hours in any locations. This model excludes or disadvantages workers who do not fit these assumptions.

Effective gender-sensitive regulation would require platforms to implement robust safety features requested by women workers, provide appropriate workplace facilities, offer meaningful maternity protections beyond nominal benefits, and design algorithms that accommodate care responsibilities rather than penalizing workers for them. It would also require recognizing how gender intersects with class, caste, region, and other social locations to produce distinctive patterns of vulnerability and exclusion within platform work.

The relative absence of women from platform delivery work itself demands explanation. Rather than reflecting women's lack of interest in such employment, low female participation likely reflects how platforms' operating models, safety inadequacies, and cultural norms around women's mobility combine to make platform work inaccessible or unviable for many women. Addressing this requires not only better protections for current female workers but also transforming platform work to become genuinely accessible across gender.

#### **5.4 Beyond Efficiency: Worker Voice and Democratic Governance**

Workers' demand for izzat (dignity/respect) challenges platform capitalism's reduction of labor to optimized inputs in algorithmic systems. This demand gestures toward alternative visions of platform work organized around principles beyond efficiency and profit maximization - visions that center worker well-being, meaningful voice, and democratic participation in workplace governance.

Current platform structures concentrate decision-making power entirely with corporate management and algorithmic systems, leaving workers as passive recipients of policies they cannot influence. The SS Code's grievance redressal provisions represent movement toward worker voice, but toll-free helplines managed by government remain far removed from meaningful participation in platform governance.

More robust models might include worker representation in platform governance structures, collective bargaining rights that allow workers to negotiate over algorithmic parameters and compensation structures, worker councils with authority over workplace policies, and transparency requirements that make algorithmic decision-making visible and contestable. Some scholars and advocates have proposed platform cooperatives, worker-owned platforms governed democratically, as alternatives to corporate platform capitalism (Scholz, 2016).

While such transformative alternatives face significant obstacles, workers' articulated need for dignity and recognition suggests that sustainable platform work requires more than marginal improvements in pay or benefits. It requires fundamentally reimagining the power relations embedded in platform capitalism and constructing governance structures that treat workers as stakeholders and decision-makers rather than as disposable algorithmic inputs.

#### **5.5 India in Comparative Perspective**

India's approach to platform work regulation occupies a middle position between European reclassification strategies and the minimal regulation characteristic of the United States. By creating a specific category for gig and platform workers with dedicated social security provisions, India attempts to extend protections without disrupting the contractor classification

that platforms defend vigorously. However, this research suggests that category creation alone proves insufficient without robust implementation, enforcement, algorithmic transparency, and worker voice. Comparative analysis indicates that effective platform work regulation requires not only legislative innovation but also state capacity for enforcement, platform accountability mechanisms, and worker organization, elements whose development in India remains uncertain. Future research should examine how different regulatory approaches interact with varied state capacities, labor market conditions, and worker organizing strategies across Global South contexts to produce diverse outcomes for platform workers.

## **6. Recommendations**

Based on the findings and analysis, this research proposes several interconnected recommendations for strengthening platform worker protections in India:

### **6.1 Mandate Algorithmic Transparency and Accountability**

Regulators should require platforms to provide clear, accessible explanations of how algorithms determine task allocation, compensation, performance ratings, and account status. Workers should receive detailed breakdowns of their earnings calculations, rating determinants, and reasons for any algorithmic decisions affecting their work. Platforms should be prohibited from making substantial unilateral changes to compensation structures or algorithmic parameters without advance notice and justification. Independent audits of algorithmic systems should verify compliance with fairness criteria and identify discriminatory patterns.

### **6.2 Establish Minimum Wage Guarantees**

The government should establish minimum hourly or per-task wage floors for platform work, adjusted for local cost of living and indexed to inflation. These minimums should account for time spent waiting for tasks, not only active task completion. Platforms should be required to demonstrate that their compensation structures enable workers to earn at least minimum wage during normal working hours, preventing the current dynamic where declining per-task payments force workers into excessive hours simply to survive.

### **6.3 Strengthen Social Security Implementation**

Government should launch comprehensive worker awareness campaigns explaining SS Code entitlements in multiple languages and accessible formats. Platforms should be mandated to inform workers about statutory benefits during onboarding and periodically thereafter, providing clear guidance on registration and benefit access. The e-Shram registration process should be simplified with support centers established where workers can receive assistance completing

registration. Transparency regarding Social Security Fund mobilization and utilization should be ensured through public reporting of aggregator contributions and benefit distributions.

#### **6.4 Implement Gender-Sensitive Platform Policies**

Platforms should be required to implement robust safety features including emergency alert systems, route sharing, and immediate response protocols. Adequate workplace facilities including rest areas, sanitation facilities, and childcare support should be mandated. Maternity protections should extend beyond nominal benefits to include paid leave, workplace accommodations, and protection against algorithmic penalties for pregnancy-related work interruptions. Regular gender audits of algorithmic systems should identify and remediate discriminatory patterns.

#### **6.5 Enable Worker Voice and Collective Organization**

Workers should have legally protected rights to organize collectively without fear of algorithmic or employment retaliation. Platform governance structures should include worker representation with meaningful authority over policies affecting working conditions. Collective bargaining mechanisms should enable workers to negotiate over compensation, algorithmic parameters, and workplace policies. Independent grievance mechanisms with power to review and reverse algorithmic decisions should be established, moving beyond toll-free helplines to substantive dispute resolution.

#### **6.6 Invest in Ongoing Research and Monitoring**

Government and independent researchers should conduct regular studies of platform worker conditions, tracking implementation of SS Code provisions, monitoring algorithmic changes, and identifying emerging challenges. Longitudinal research following workers over time would illuminate how platform work affects long-term economic security, health, and life trajectories. Comparative research across sectors and regions would identify best practices and context-specific vulnerabilities requiring targeted intervention.

### **7. Conclusion**

India's gig economy stands at a critical juncture. With 7.7 million current platform workers projected to grow to 23.5 million by 2029-30, the conditions under which this workforce labors will shape not only individual livelihoods but broader patterns of economic inequality, social protection, and democratic participation in India's digital future.

This research has revealed a fundamental tension: India has enacted progressive legislation formally recognizing gig workers and establishing social protection frameworks, yet workers'

lived experiences remain characterized by algorithmic opacity, declining compensation, income volatility, and minimal access to statutory benefits. The Code on Social Security, 2020 represents significant regulatory innovation, but legislative recognition proves insufficient without robust implementation, algorithmic transparency, enforcement mechanisms, and worker voice in platform governance.

Algorithmic management systems exercise control over workers' income, working conditions, and employment security through opaque processes that workers cannot see, understand, or contest. This algorithmic sovereignty operates below the threshold of traditional labor regulation, enabling platforms to comply nominally with social security legislation while maintaining unilateral authority over the fundamental conditions determining whether workers can survive on platform earnings.

The implementation gap between statutory rights and worker awareness reveals the inadequacy of simply passing legislation. Effective worker protection requires proactive government outreach, platform cooperation in facilitating benefit access, simplified registration processes, and transparent reporting of social security fund operations. Current failures in these domains mean that progressive legislation risks remaining symbolic rather than materially improving workers' conditions.

Gender analysis reveals how regulatory frameworks treating workers as undifferentiated categories fail to address structural inequalities producing distinctive vulnerabilities for women. Female platform workers face intensified challenges around safety, workplace infrastructure, and social protection that reflect both platform design failures and patriarchal social structures. Addressing these requires not only maternity benefits but fundamental transformation in how platforms operate and how care responsibilities are recognized in work design.

Workers' demand for dignity challenges us to imagine platform work organized around principles beyond efficiency and profit maximization. Current structures reduce workers to data points in optimization algorithms while excluding them from meaningful participation in decisions shaping their working lives. Sustainable platform work requires not marginal improvements but fundamental reimagining of power relations, constructing governance structures that center worker well-being and democratic voice.

The recommendations proposed - algorithmic transparency, minimum wage guarantees, strengthened social security implementation, gender-sensitive policies, and worker voice—represent interconnected interventions necessary for transforming India's gig economy from a site of precarity to one offering dignified, secure livelihoods. These recommendations require coordinated action across government, platforms, workers' organizations, and civil society.

As one worker articulated, "Work is fine, but we should get respect too." This simple yet profound statement captures what is at stake: not simply marginal improvements in working conditions but recognition of platform workers' fundamental humanity, dignity, and right to shape the technological and economic systems structuring their lives.

India has the opportunity to lead globally in developing regulatory frameworks that balance platform innovation with worker protection, algorithmic efficiency with human dignity, and economic dynamism with social justice. Realizing this opportunity requires moving beyond legislative symbolism to substantive transformation in how platform work is organized, governed, and experienced. The future of work in India's digital economy depends on whether we rise to this challenge, constructing platforms that serve not only capital accumulation but human flourishing.

The 23.5 million platform workers projected by 2029-30 deserve nothing less than work that is not only flexible and remunerative but fundamentally dignified, secure, and democratic. Achieving this vision requires sustained commitment, coordinated action, and willingness to challenge the concentration of algorithmic power that currently characterizes platform capitalism. This paper contributes to that necessary project by centering worker voices, documenting implementation gaps, and charting pathways toward more just platform futures.

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