

Labor Law Identification of Algorithm Control Intensity in the Gig Economy: The Core Criterion of Technical Subordination

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Abstract: As digital technology deeply penetrates the labor market, the gig economy is reshaping employment patterns through the “platform + individual” model. Platforms rely on algorithms to reconstruct labor management processes, causing traditional labor law identification standards to fail. This paper focuses on “algorithm control intensity,” constructs a three-dimensional framework of “Dispatch Mode—Reward/Penalty Mechanism—Autonomy Degree” by combining Supreme Court cases and Suzhou pilot experiences, and provides an analytical path for labor law to adapt to the gig economy and mitigate adjudication divergence in platform-related labor cases.

Keywords: Gig economy; Algorithm control intensity; Labor law; Identification of labor relations; Technical subordination

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1. Introduction

1.1. Technological drivers and transformation of employment forms in the gig economy

Digital platforms achieve full-process automation of “demand matching—task assignment—process supervision—payment settlement” through algorithms, completely breaking the spatiotemporal constraints of traditional employment. China’s gig workforce, including food delivery riders and ride-hailing drivers, exceeds 84 million people ^[1]. However, platforms commonly use forms such as “service agreements” and “registration as individual businesses” to repackage labor relations as civil collaborations, systematically evading legal obligations stipulated by labor law, such as social security contributions and workers’ compensation.

This transformation in employment forms is reflected not only in scale but also in a fundamental shift in management models. Algorithms are no longer merely auxiliary tools but have become the core technical means for platforms to implement labor management.

1.2. The failure of the traditional “personal subordination” standard

Traditional labor law, formed in the industrial economy era, centers its “personal subordination” standard on “manual attendance, fixed workplaces, written rewards and penalties.” This standard reveals significant inadequacy in the context of algorithmic management, as it cannot effectively identify the hidden dominance of algorithms over the labor process, leading to prominent “different judgments for similar cases” in judicial practice.

For example, in the Supreme Court’s Guiding Case No. 240 involving a designated driver, the driver was excluded from labor law protection due to the “autonomous order acceptance” feature. In contrast, in the Supreme People’s Court Guiding Case No.238 arising in Suzhou, because the platform implemented “system-mandated order dispatch,” the court ultimately applied the “Labor Contract Law.” The different outcomes in these similar cases fully expose the limitations of traditional identification standards in the algorithm era.

1.3. Functional imbalance of labor law and the plight of workers’ rights

The core value of labor law lies in balancing “employers’ autonomy in labor use” and “workers’ basic rights.” However, the crypticity and autonomy of algorithms have completely disrupted this balance. Against the background of MOHRSS’s pilot on occupational-injury protection for new-form employment, crowd-sourced riders have long faced difficulties in obtaining statutory compensation for occupational injuries caused by obstacles in confirming labor-relation status ^[2]. Behind this observation lies the widespread lack of social security faced by a large number of gig workers. When the protective function of labor law fails due to ineffective identification standards, the “flexibility” of platform employment comes at the cost of the “hollowing out” of workers’ rights protection.

2. Algorithm control intensity: The core tool for labor law to penetrate gig employment forms

2.1. Core logic and legal basis

The essence of identifying labor relations in labor law is judging whether “the employer forms dominant management over the worker.” The rise of algorithms has endowed platforms with new “algorithmic power,” enabling comprehensive yet hidden control over workers ^[3]. In the gig economy, algorithms are no longer mere technical tools but the direct carrier through which platforms exercise management power. The level of algorithmic control intensity directly corresponds to the strength of “employer management power” in traditional employment, possessing core value in penetrating formal disputes over “civil agreements.”

This logic conforms to the legislative purpose of the Labor Contract Law of the People’s Republic of China (2012 Revision). The essence of labor-relation identification lies in judging whether an employer exercises dominant managerial power over workers. In the algorithm era, employers’ work-arrangement power is realized through technical means such as dispatch modes ^[4].

2.2. Corroboration and development in judicial practice

The Supreme Court’s Guiding Case No. 237 first incorporated algorithm control intensity as a core element in identifying labor relations ^[5]. In this case, the platform signed a “Freelancer Cooperation Agreement” with the worker, formally excluding the application of labor law. However, the platform implemented “mandatory

order dispatch” and “overtime fines” through algorithms, and its degree of control over the labor process was not fundamentally different from that of a traditional employer. The court ultimately recognized the existence of a labor relationship based on the principle of substance over form.

This adjudication process has gained widespread acceptance in judicial practice. Judicial practice demonstrates that algorithm control intensity has become a core factor considered by courts in platform-employment labor dispute cases. The abovementioned judicial practice fully illustrates that algorithm control intensity has become an indispensable element in judicial practice.

3. Threedimensional labor law identification framework for algorithm control intensity

3.1. Dispatch mode: Technical judgment of labor law’s “work arrangement right”

The dispatch mode is the primary dimension for judging algorithm control intensity, directly reflecting the platform’s exercise of the “work arrangement right.” In specific identification, a comprehensive analysis is required from the following aspects:

Identification Standard for Strong Control Scenario: The platform implements “mandatory order dispatch + penalty for order refusal,” and the worker’s actual order refusal rate is below 10%. In this scenario, the platform’s control over work arrangements is highly consistent with the characteristic of “unilateral work arrangement by the employer” in traditional employment.

For instance, in the Supreme People’s Court Guiding Case No. 238, which arose in Suzhou, the platform’s cooperative operator adopted a system-driven mandatory order assignment model. Riders were substantially restricted from rejecting orders, and their working hours were centrally arranged by the platform system. The court held that such a dispatch mechanism reflected the exercise of the employer’s work-arrangement power under the Labor Contract Law of the People’s Republic of China ^[5].

Identification Standard for Weak Control Scenario: Workers can autonomously grab orders, refuse orders without penalty, and the actual order refusal rate is not less than 50%. This scenario reflects the characteristics of “task collaboration between equal civil subjects.” For instance, in the Supreme Court’s Guiding Case No. 240 involving a designated driver, the driver could freely choose working hours and order types, and refusing orders incurred no penalty. The court accordingly recognized the relationship as a civil cooperation ^[5].

This paper tentatively adopts 10% and 50% order refusal rates as theoretical reference thresholds to distinguish strong-control from weak-control scenarios. Such division is a theoretical analytical proposal rather than an established statutory or judicial standard, and remains to be verified by subsequent judicial cases.

3.2. Reward/penalty mechanism: Digital adaptation of labor law’s “labor discipline right”

The nature and procedure of algorithmic rewards and penalties are the core basis for judging whether the platform exercises the “labor discipline right.” This needs to be judged from three dimensions: automation, unilateralism, and compulsoriness of the rewards/penalties.

Typical characteristics of a strong control scenario: The algorithm automatically triggers punitive measures, and workers lack effective channels for appeal.

In practice, the algorithm may autonomously formulate labor discipline, impose penalties according to work data such as location and duration, and the lack of effective appeal channels will form dominant labor management ^[6]. This mode of “automatic triggering + no manual intervention” fully conforms to the unilateral and compulsory characteristics of traditional labor discipline.

Identification standard for weak control scenario: Rewards and penalties are embodied as contractual performance liabilities, and workers have room for negotiation. For example, in the Supreme People’s Court Guiding Case No. 239 concerning online streamers, the brokerage contract stipulated that the streamer should complete corresponding work arrangements made by the company and bear liabilities for breach if failing to perform; however, the performance content could be adjusted through negotiation, lacking the unilateral and compulsory nature of labor discipline. This negotiable reward/penalty mechanism reflects the equality characteristic of civil contracts.

Support from practical viewpoints: At Futian Court’s 2025 labor-dispute trial seminar, some judges put forward the view that if algorithmic rewards and penalties possess the unilateral and compulsory nature of labor discipline, they need to be adjusted by labor law. This seminar view can provide reference ideas for the identification of the reward/penalty mechanism.

3.3. Autonomy degree: Demarcation of the boundary of labor law’s “labor process control right”

The autonomy dimension judges the boundary of algorithmic control over the labor process based on three elements: “working time, work route, service standards.”

Identification of Strong Control Scenario: The algorithm simultaneously controls the three elements of “time—route—standard.” For example, riders need electronic clock-in/out, follow algorithm-planned delivery routes, and use unified service scripts. In this scenario, the platform’s control over the labor process is completely consistent with traditional employment, and labor law should apply 100%.

Characteristics of weak control scenario: Workers can autonomously decide at least two of the elements. For example, a part-time designer can autonomously arrange working hours, choose design tools and styles, while the platform only sets requirements for the final output. In this scenario, the platform lacks control over the labor process, and labor law does not apply.

4. Practical value: Empirical effects of the algorithm control intensity framework

4.1. Unifying judicial adjudication standards

When hearing platform-employment labor disputes, the reasoning of some cases in Shenzhen and Suzhou is consistent with this three-dimensional framework, which helps unify adjudication ideas and provides an analytical path to reduce inconsistent judgments for similar cases.

4.2. Safeguarding basic rights of gig workers

The pilot programs in both locations have expanded the coverage of occupational-injury protection for crowd-sourced riders, and the three-dimensional framework can provide analytical ideas for identifying such groups. The Suzhou pilot shows expanded occupational-injury protection coverage for this group.

4.3. Forcing platform algorithm compliance

The promotion and application of the threedimensional framework theoretically have the potential to produce a positive behavioral guidance effect. Leading fooddelivery platforms have shifted from “mandatory order dispatch” to “priority recommendation” and set up exemption mechanisms for riders’ nonliable order refusal. Related labor law disputes decreased to a certain extent. This indicates that the framework has reference value at the adjudication level and can provide ideas for promoting platform algorithm compliance from a theoretical perspective.

5. Conclusion and outlook

5.1. Theoretical value of the framework

The three-dimensional framework for algorithm control intensity is not a negation of traditional labor law but a technical reconstruction of “employer management power.” Its core logic always revolves around the essence of labor relations – “dominant management” – ensuring that regardless of how management methods evolve, as long as they reach the degree of dominance stipulated by labor law, they should be within its adjustment scope.

5.2. Practical balancing function

The framework successfully achieves multiple balances: it responds to the rights demands of the 84 million gig workers while delineating compliance red lines for platform algorithm management; it protects workers’ basic rights while leaving reasonable space for platform innovation. This balance gives the framework strong practical applicability and promotional value.

5.3. Future development direction

The current framework mainly applies to local life service gig workers, and its adaptability to cross-border gig workers and knowledge service gig workers (e.g., online translators) still needs improvement. In the future, based on this framework, the rights configuration of “partial labor relations” (such as hourly minimum wage, specific occupational injury insurance) should be refined, while promoting algorithm transparency legislation to make the identification of “algorithm control intensity” more operable, ultimately building a new labor law system adapted to the digital era.

Disclosure statement

The author declares no conflict of interest.

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