Legal Regulation of Algorithmic Overtime Penalties for Food-Delivery Riders

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Abstract: In the digital economy, algorithmic overtime penalties for food-delivery riders have formally receded after the new national standard, but platforms have replaced fines with points systems and still indirectly affect riders' income by restricting order access and imposing mandatory training, the substance of the economic penalty remains unchanged. This study examines whether such penalties have a valid legal basis and whether existing regulatory tools can effectively constrain platform-set penalty rules. Using doctrinal and institutional analysis, it first discusses the legality of overtime penalties and then analyzes the effectiveness and limitations of current legal regulation. The study finds that riders are in incomplete labor relations; although labor laws should not apply in full, rules concerning labor intensity and remuneration should still be subject to labor-law constraints. Current penalties ignore causes of delay and lack genuine rider participation, rendering appeals formalistic, while fragmented responsibility and ex post supervision make the core problem difficult to correct. Effective legal regulation should focus on algorithmic transparency, substantive consultation, and effective appeals. Only by constraining platforms' rule-making power can the substantive economic penalty behind points systems be effectively regulated.

Keywords: Food-Delivery Riders; Algorithmic Time Penalties; Incomplete Labor Relations; Algorithmic Transparency

1. Introduction

In the digital economy, the gig economy, which relies on digital technologies, has become an important engine for rapid economic development. However, while the gig economy brings benefits to all sectors of society, the protection of the rights and interests of gig workers, represented by food-delivery riders, has become a major challenge to the deep integration of the digital economy and the real economy [1]. In response to problems in the food-delivery industry in recent years—such as "ghost food-delivery outlets," irrational competition, and insufficient protection of food-delivery riders' rights and interests—on December 4, 2025, the State Administration for Market Regulation issued and implemented the recommended national standard Basic Requirements for Service Management of Food Delivery Platforms. The standard provides that, in principle, food-delivery platforms and labor cooperation enterprises should not use deductions as a penalty method and should instead adopt alternative management measures. Around the issuance of this requirement, platforms such as Meituan and Taobao Shangou successively canceled overtime deductions and replaced them with points mechanisms such as "service points" and "Anzhun cards," adopting a management approach of awarding points for on-time delivery and deducting points for late delivery. The platforms all stated that point deductions do not affect riders' basic income, but once accumulated deductions reach a certain level, consequences such as mandatory training or restrictions on order access are triggered. The penalty method of overtime deductions has thus formally retreated. However, the substance of overtime penalties is not simply the exercise of disciplinary power by platforms or merchants; rather, it is a penalty rule unilaterally set by platforms through an algorithmic "black box," over which riders have neither room for negotiation nor an effective channel for appeal. In other words, the shift from deductions to point deductions changes only the technical appearance of the penalty, not the core infringement of riders' rights—namely, the unilateral allocation of rule-making power. At the same time, current law struggles to effectively address the complex problems of status determination in platform employment. In particular, the above-mentioned requirement excludes non-labor relations, leaving a large number of workers in new forms of employment

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outside basic legal protection [2]. The core questions that arise are therefore: What is the legal basis for overtime penalties, whether in the form of deductions or point deductions? Can the existing regulatory framework—centered on labor-relationship determination, standard-form clause review, and labor-rule procedures—effectively constrain penalty rules unilaterally set by platforms? To answer these questions, this article examines, in turn, the legality dilemma of algorithmic overtime penalties, the effectiveness and limitations of existing regulatory approaches, and possible directions for institutional improvement.

2. The Legality of Overtime Penalties

2.1 Identification of the Legal Relationship Formed Between Food-Delivery Riders and Platforms

To demonstrate the legal source of platform-set overtime penalties, it is necessary to clarify the legal relationship formed between platforms and food-delivery riders. According to the Guiding Opinions on Safeguarding the Labor Security Rights and Interests of Workers in New Forms of Employment, there are broadly three types of legal relationships that workers may form: (1) where the circumstances meet the establishment of a labor relationship, the enterprise shall conclude a labor contract with the worker in accordance with law; (2) where the circumstances do not fully meet the establishment of a labor relationship but the enterprise exercises labor management over the worker, the enterprise is guided to conclude a written agreement with the worker and reasonably determine the rights and obligations of both parties; and (3) where an individual relies on a platform to independently carry out business activities or engage in freelance work, the rights and obligations of both parties are governed by civil law. The logic behind these Guidelines is that the adjustment of the relationship between workers and enterprises, and the intensity with which relevant labor laws regulate that relationship, should be determined by the degree of control the enterprise exercises over the worker. In a labor relationship, the enterprise exercises the strongest control over the worker, so the relationship is governed by labor law; where an individual relies on a platform to operate, the platform exercises the weakest control over the individual, so the relationship is governed by civil law; incomplete labor relations fall between the two, so the rights and obligations of both parties must be reasonably determined. In the case of food-delivery riders, the relationship formed between riders and platforms or merchants clearly cannot amount to a labor relationship; the dispute therefore lies in whether riders are independent operators or fall under incomplete labor relations. As one scholar has argued: “If riders are regarded as independent operators in the platform market, the law should respect civil autonomy and the flexible space of platform transactions; if they are regarded as subordinate laborers in digital form, they cannot be pushed into ordinary civil relations in the name of formal freedom, and it remains necessary to examine their subordination by reference to the platform’s actual influence on the labor process, income formation, and business embeddedness [3].” Riders can freely decide their working hours and working methods, which appears to give them a high degree of freedom comparable to that of independent operators, so they should be identified as independent operators. However, the core test of whether riders are independent operators or in incomplete labor relations is not whether their working hours and working methods are directly managed by platforms or merchants, but rather the degree of coercive force that labor rules exert on them. The former distinguishes labor relationships from incomplete labor relations. In their work, riders enjoy a relatively free choice of orders while also having to comply with rigid rules set by platforms, such as delivery time limits, service ratings, and commission rates, thus forming a unique employment pattern in which “autonomy and subordination are intertwined, and the labor process is integrated with data management” [4]. From this perspective, it is more appropriate to identify the legal relationship formed between riders and platforms or merchants as an incomplete labor relationship.

2.2 Application of Law to Incomplete Labor Relations

Because riders’ subordination to platforms and merchants is stronger than that of independent operators but weaker than that in a labor relationship, they fall under incomplete labor relations. It is therefore natural that, on the question of how extensively labor law should apply to incomplete labor relations, some scholars have advocated a tiered approach to protection based on the gradually decreasing subordination

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of dedicated delivery, crowdsourced delivery, and occasional order-takers [3]. This view appears to analyze specific problems specifically and to determine the legal relationship according to concrete labor conditions, but it likewise raises a question: how is the state of subordination to be determined? It must be recognized that the frequency and number of orders a rider takes are not relatively constant. If the legal relationship were judged merely by the form of dedicated delivery, crowdsourced delivery, or occasional order-taking, how should the legal relationship of a rider who has not established a dedicated delivery relationship but earns a living by delivering orders be determined? In substance, such a rider's subordination is roughly equivalent to that of dedicated delivery personnel, and it would clearly be inappropriate to deny that they are subject to platform rules merely because they are not dedicated delivery personnel. If determination were based on order-taking frequency, how should a reasonable time period be defined? Even if a time period were defined, if the same rider's order-taking frequency differs across time periods, does that mean different rules should apply to that rider at different times, and that the rights and obligations established by contract should change over time? Clearly, this view is not operationally feasible. This article argues that the appropriate approach is to discuss rules by type and to apply labor-law protection to provisions concerning labor intensity and wages and remuneration, because these two matters are most closely tied to labor management and are the concentrated manifestation of riders' subordination.

2.3 The Legality of Algorithmic Rules

Having determined that the relationship between riders and platforms or merchants constitutes an incomplete labor relationship, and that provisions concerning labor intensity and wages and remuneration in incomplete labor relations should be subject to labor-law regulation, it is only necessary to determine whether the penalty rules formulated by algorithms comply with labor-law norms in order to determine the legality of overtime penalties. At present, algorithmic control has two core problems. First, the fragmentation and dispersion of workers in incomplete labor relations result in insufficient organizational mechanisms for their representation, and this lack of organizational mechanisms further leads to a lack of corresponding consultation functions. Second, the mechanisms of algorithmic control are opaque: the algorithmic "black box" renders the processes of rule-making and labor-norm formulation unclear, and enterprises further compound this problem by restricting disclosure of their algorithms on grounds of intellectual property protection. The lack of consultation capacity among workers in incomplete labor relations in turn causes the problem of algorithmic opacity to be left unaddressed for a long time, aggravating its impact [5]. These two problems are particularly concentrated in overtime penalty rules. Insufficient consultation capacity prevents riders from participating in the formulation of point-deduction rules, while algorithmic opacity prevents riders from understanding point-deduction parameters and cumulative consequences. In substance, under current algorithmic norms, the delivery time limits set are often premised on "ideal road conditions + immediate food preparation by merchants + full-speed delivery by riders," a premise that does not hold in reality. Systemic factors such as slow food preparation by merchants, traffic controls, severe weather, and denial of entry to residential compounds all cause overtime, yet algorithmic penalties do not distinguish among the causes of overtime: as long as delivery is late, riders bear the consequences of deductions or point deductions. At the same time, the operation of these rules lacks substantive democratic consultation, and riders' rights to participation and objection remain formalistic. In summary, the legality of overtime penalties remains questionable at present.

3. Existing Regulatory Paths

The failure of existing regulatory paths is manifested at three levels: the temporal mismatch of ex post supervision, the formal alteration of penalty forms, and the ambiguity of responsible subjects. Together, these three factors make it difficult for the existing system to effectively correct the legality defects of overtime penalties.

3.1 Adopting an Ex-Post Supervision Model for Corporate Information Processing

Algorithmic management inherently suffers from an excessive reliance on data. Whether the data themselves are authentic and reliable, precise and accurate, highly matched to the objectives, comprehensively covered, and broadly representative is a prerequisite for the scientific

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validity of algorithmic computation [6]. Therefore, using algorithms to manage workers inherently carries a tendency to over-collect data. However, relevant labor laws do not impose corresponding restrictions on enterprises' information collection; instead, content concerning enterprise data management is provided in Article 24 of the Personal Information Protection Law: "Where a decision with a major impact on personal rights and interests is made through automated decision-making, the individual has the right to request the personal information processor to provide an explanation, and has the right to refuse a decision made solely through automated decision-making by the personal information processor." Yet in incomplete labor relations, whether platforms' and merchants' collection of riders' work data can be classified as personal information remains a question open to debate. At the same time, how automated decision-making should be identified is also disputed [7]. Consequently, with respect to information collection, existing regulatory paths contain no provisions defining a reasonable scope for platforms, which means that supervision of platforms' information collection can only rely more heavily on an ex post supervision model—that is, platforms are regulated only after seriously unreasonable information collection has occurred.

3.2 The Transformation of Penalty Forms

The Basic Requirements for Service Management of Food Delivery Platforms provides that, in principle, food-delivery platforms and labor cooperation enterprises should not use deductions as a penalty method and should instead adopt alternative management measures. This requirement does not mandate that platforms and enterprises eliminate deductions as a penalty method, but most platform merchants nevertheless canceled deductions as a penalty and replaced them with points mechanisms such as "service points" and "Anzhun cards." However, points mechanisms still achieve their management purpose through economic punishment: deductions directly reduce riders' economic interests, while points mechanisms indirectly reduce riders' order-taking opportunities—and thus their economic interests—by restricting order access or imposing mandatory training. It can be said that this measure is simply old wine in a new bottle and still cannot achieve the purpose of regulating platform behavior and protecting workers' rights and interests. In substance, punishing violations through economic means to manage workers is not unreasonable. Workers participate in work to obtain economic benefits, and from this perspective, management methods other than economic means can hardly achieve effective management over them. However, the controversy triggered by the earlier deduction practices arose from the opacity of the reasons for deductions and the absence of appeal mechanisms. Adopting non-deduction methods with no practical impact is naturally welcome to enterprises and platforms: on the one hand, it does not restrict the exercise of their disciplinary power; on the other hand, they can still exercise disguised deductions in a more indirect manner. Therefore, the current regulatory path cannot solve the problem of unreasonable overtime penalties at its source.

3.3 Ambiguity of Responsible Subjects

A typical structure of incomplete labor relations is the tripartite relationship among platform enterprises, outsourced cooperation enterprises, and riders. The power to formulate rules on overtime penalties rests with platforms, while the enforcement of penalties is often carried out by outsourced cooperation enterprises. This division of "rule-making and enforcement" disperses the subjects responsible for overtime penalties. On the one hand, platforms use algorithms to formulate penalty rules and can claim that such rules fall within the scope of platform rule autonomy; on the other hand, enterprises, as the entities exercising specific disciplinary power, do not have the power to formulate or modify rules. This places riders in a dilemma. The essence of this problem is that existing relevant laws and regulations are constructed almost entirely around the concept of the "employing unit," whereas incomplete labor relations precisely blur this concept, making it difficult for existing laws and regulations to address riders' predicament. Although certain appeal mechanisms exist, the entire process is conducted on platforms and the data are difficult to alter, so the role such mechanisms play remains limited [8].

4. Recommendations for Institutional Perfection

4.1 Perfection of Algorithmic Regulation Rules

Admittedly, the formulation of penalty rules falls

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within the scope of platform autonomy, but this does not mean that all algorithmic rules should remain in a "black box" as enterprise intellectual property; rather, the parts most closely connected to riders should be disclosed and kept transparent. Specifically, these are the remuneration allocation algorithm that affects riders' labor remuneration and the automated decision-making algorithm that affects riders' labor intensity. Because these two are highly relevant to riders' interests, they should be set as the scope of algorithmic disclosure. As for their specific implementation, some scholars have proposed a two-stage model of "full transparency" and "targeted intervention" [9]: first, explain the basic rules of the algorithm to riders in natural language and disclose its decision logic and data sources; then, provide explanations for the controversial parts of the disclosed content.

4.2 Rule Formulation and Consultation Procedures

The legality of overtime penalty rules depends not only on whether their content is reasonable, but also on whether the formulation procedures are legitimate. To constrain the negative effects of the profit-seeking nature of platforms and merchants as legal persons, the norms governing rule-making for e-commerce platforms can be extended to other types of platform domains, and equal consultation mechanisms can be constructed through procedural arrangements, so that the opinions of internal participants can check the "opportunistic mentality" of platform operators. In addition, to avoid the negative effects of a lack of user rationality, public interest litigation mechanisms can be introduced and improved, bringing in external forces to pursue rights protection on behalf of users and thereby correcting the disorder in platform rule-making and exercise [10]. At the same time, the forms of opinion expression in incomplete labor relations should also be improved, and a platform consultation mechanism centered on trade unions or rider representatives should be established.

4.3 Establishing an Effective Appeal Mechanism

The core defect in the legality of overtime penalties lies in the lack of effective appeal channels for riders when they suffer adverse disciplinary measures. To establish an effective appeal mechanism and effectively safeguard riders' rights and interests, three aspects should be addressed. First, a manual review procedure should be added to appeal acceptance. Platforms should set up manual review positions within their internal structure that are independent of the algorithm operations department, to review point-deduction decisions involving major adverse consequences such as restrictions on order access and mandatory training, thereby preventing algorithms from unilaterally determining penalties. Second, with respect to proof in manual review, a reversal of the burden of proof should be adopted: riders need only provide preliminary evidence indicating that overtime may have been caused by factors beyond their control, and the burden of proving the legality and reasonableness of the penalty decision should be placed on the platform. Third, remedies should be made substantive. Where review confirms that a penalty was erroneous, the platform should not only restore the rider's service points and order-taking eligibility but also compensate for income losses caused by the erroneous penalty. As an important channel for human intervention in algorithmic management, the effectiveness of the appeal mechanism determines whether algorithmic management is confined within a reasonable scope.

5. Conclusion

Whether algorithmic overtime penalties take the form of deductions or point deductions, their substance is the unilateral control exercised by platform algorithmic power over riders' labor process. The shift from deductions to point deductions has formally alleviated riders' immediate economic losses, but it has not changed the defect of unilateral rule-making. The analysis in this article shows that the focus of regulation should not be on the form the penalty takes, but rather on whether algorithmic decisions produce substantive adverse impacts on riders' rights and interests, and whether riders are able to counteract such impacts. Only by establishing effective algorithmic regulation mechanisms on this basis, improving existing rule-making procedures, and substantiating the currently formalistic appeal mechanism can the protection of workers' rights and interests be truly implemented.

References

[1] GUO Xiaoling, ZHAO Lige, DENG Mengyuan, et al. The Impact of Algorithmic Control by Digital Platforms on Worker

Welfare: A Case Study of the Food Delivery Industry. Industrial Economics Review, 2026, 5-21(4).
[2] ZHOU Zucheng, LI Ningle. Research on Legislative Paths for Protecting the Rights and Interests of Workers in New Forms of Employment. Journal of Business Economics and Management, 2026(5): 95-104.
[3] CHENG Fang, JI Shaowei. Determination of Subordination in Labor Relations of Food Delivery Platform Riders and Tiered Responsibility Allocation: Focusing on the Crowdsourcing Model. China Youth Study, 2026: 14-22.
[4] GAO Ruihua. On the Institutional Construction of "Incomplete Labor Relations". Jinan: Shandong University of Political Science and Law, 2025.
[5] ZHANG Wei, TIAN Silu. Dilemmas in Realizing the Collective Labor Rights of Workers in New Forms of Employment and Legal Safeguards. Journal of Dalian University of Technology (Social Sciences), 2025: 183-190.
[6] XU Yue. Research on Infringements of Young Workers' Rights by Platform Algorithmic Management and Legal Regulation. Youth Development Forum, 2026, 36(3): 96-104.
[7] TIAN Ye. On Workers' Right to Opt Out of Automated Decision-Making. Law and Social Development, 2024(3): 175-189.
[8] DENG Zhiping. The "Order-Taking Game" and Labor Practices in the Platform Economy: A Case Study of Food Delivery Riders. Seeker, 2021(3): 108-117.
[9] ZHOU Jie. The Labor Law Construction of the Right to Request Human Intervention in Algorithmic Decision-Making. Hebei Law Science, 2026, 44(9): 119-140.
[10] HUANG Shaokun. Legitimacy Control of Platform Rules. Journal of Beijing Institute of Technology (Social Sciences Edition), 2023, 25(5): 140-148

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