

Corporate Social Responsibility Deficits and Governance Pathways of Food-Delivery Platforms: An ESG Perspective

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Abstract: As the digital economy continues to expand, food-delivery platforms have generated substantial economic and social value. At the same time, shortcomings in their environmental, social, and governance responsibilities have become increasingly visible. Drawing on the ESG framework, this paper systematically examines the corporate social responsibility performance of food-delivery platforms. Environmentally, the platform business model contributes to single-use plastic pollution and food waste. Socially, platforms provide inadequate protection for delivery couriers' labor rights, maintain inequitable relationships with merchants, and pose potential risks to consumer rights. In terms of governance, opaque algorithms create further accountability concerns. On the basis of this analysis, the paper proposes a set of governance measures. Externally, government regulation and broader social oversight should be strengthened. Internally, platforms should reform their governance practices, promote green consumption, safeguard stakeholder rights, improve algorithmic transparency, and advance sustainable corporate development.

Keywords: Food-delivery platforms; ESG; Corporate social responsibility; Stakeholders; Algorithmic governance.

1. Introduction

1.1. Research Background

With the development of the digital economy, digital platform ecosystems comprising platform firms, complementors, users, and other participants have become a central force in global markets [1]. Digital technologies are profoundly reshaping the trajectory of social development. In particular, on-demand food-delivery platforms represented by Meituan and Ele.me have become an integral part of consumers' daily lives. These emerging local-service models have broadened the range of everyday consumption options, responded to the demand associated with the stay-at-home economy, and become a key vehicle for the digital transformation of the restaurant industry [2]. By leveraging advanced mobile internet technologies, extensive data-processing capabilities, and efficient delivery networks, food-delivery platforms have extended restaurant services beyond conventional physical premises and created vast digital ecosystems connecting hundreds of millions of consumers with millions of merchants. Across cities of all tiers, food delivery has profoundly influenced how people consume and the habits they develop. The rise of these platforms therefore represents not only a major commercial success but also a vivid manifestation of the vitality of the digital economy.

On February 11, 2025, JD.com formally announced its entry into the food-delivery market by launching JD Food Delivery, initiating a recruitment program for quality dine-in restaurants, and adopting strategies such as year-round commission exemptions and statutory social insurance and housing-fund benefits for couriers. These measures attracted considerable attention from users, couriers, and merchants and once again placed the food-delivery sector in the public spotlight. They also renewed debate over the complex social and ethical problems that persist beneath the convenience and efficiency of food delivery and that have become more pronounced as platforms expand. Because food-delivery platforms serve as the central intermediaries connecting

merchants and consumers, the ethical limits of their conduct have become a focal point of controversy. China's food-delivery market has entered a mature stage characterized by intense competition and a pronounced tendency toward involution. As the industry shifts from incremental growth to competition over an established market, rivalry has evolved from competition among individual firms into competition among platform ecosystems, becoming more systematic and ecosystem-based [3].

This competition affects the broader business ecosystem in several ways. Although subsidy wars are no longer constant, they still occur periodically; while they attract traffic in the short term, they also entrench a cash-intensive model of competition. Platforms increasingly transfer cost pressures to merchants and couriers, diminishing returns constrain further algorithmic optimization, organizational control becomes ever more extreme and granular, and innovation gives way to homogeneous competition [4]. Through increasingly sophisticated algorithmic systems, platforms impose stricter control over couriers' workload and delivery efficiency, making working conditions and remuneration major matters of public concern [5]. Without effective guidance, this involutionary form of competition, which consumes resources within the ecosystem, will ultimately reduce the industry's marginal returns and weaken its capacity for innovation, thereby threatening the healthy and sustainable development of the digital economy [6].

The social and ethical problems associated with food-delivery platforms call for a deeper examination of the corporate social responsibility of these influential firms. Accordingly, this paper investigates the responsibility deficits of food-delivery platforms and possible governance pathways through an ESG lens.

1.2. Research Objectives and Significance

1.2.1. Research Objective

This paper aims to assess the corporate social responsibility (CSR) performance of food-delivery platforms across the

environmental (E), social (S), and governance (G) dimensions and to identify a pathway that can effectively balance efficiency and fairness. It thereby offers policy and managerial recommendations to help food-delivery platforms better fulfill their social responsibilities and achieve long-term sustainable development.

1.2.2. Research Significance

From a theoretical perspective, research on the social responsibility of food-delivery platforms remains exploratory, and the relevant theoretical system requires further development. By using the ESG framework to provide a structured analysis of platform CSR performance, this paper offers a new perspective for understanding the complex social effects of digital platforms. It also enriches and extends the explanatory power and applicability of CSR theory in the context of emerging business models and contributes to the application and development of corporate social responsibility theory in the digital era.

From a practical perspective, the analysis offers insights for the sustainable development of food-delivery platforms and the cultivation of long-term competitive advantages. It also provides a reference for regulators and enables consumers to develop a clearer and more comprehensive understanding of platform development.

2. Literature Review

Corporate social responsibility has a long history as a subject of scholarly inquiry. Early thinking can be traced to Clark's 1916 discussion, which emphasized voluntarily assumed philanthropic responsibility and treated such responsibility as a proactive form of charitable contribution [7]. As the theory evolved, its meaning became more comprehensive. Carroll defined corporate social responsibility as the full range of expectations that society holds for business organizations at a given point in time, encompassing both economic and social dimensions [8]. The drivers of CSR are likewise multifaceted. In addition to voluntary corporate action, public expectations, and contractual constraints, an important theoretical foundation lies in the principle that rights and responsibilities should be commensurate [9]. More recently, the ESG framework has emerged from CSR theory as a more systematic and operational approach. ESG refers to an investment and management strategy through which economic actors jointly consider environmental, social, and governance factors; it is therefore a broad form of responsible investment [10] and provides an effective instrument for systematically evaluating corporate responsibility performance.

With the rise of emerging business models such as food delivery, scholars have increasingly applied the ESG framework to examine corporate responsibility. From an environmental perspective, controlling plastic pollution has become a major component of the global response to the triple planetary crisis of climate change, biodiversity loss, and pollution [11]. The rapid growth of e-commerce, food delivery, and related sectors has created new challenges, including excessive plastic packaging and the difficulty of recycling low-value plastic waste [12]. From a social perspective, research has focused particularly on the new employment relationships created by platforms, commonly described as the gig economy. The gig economy generally refers to economic activities undertaken by workers in flexible arrangements; in the internet era, it is manifested

mainly in online labor markets and app-based on-demand work [13]. Gig-economy platforms improve job matching, enhance efficiency, and create new jobs and forms of employment [14], but they also accelerate the disappearance of some existing occupations [15]. At the same time, the employment benefits and social protection of gig workers have attracted extensive attention from the media, academics, and policymakers worldwide [16–19]. From a governance perspective, scholars have expressed serious concern about the abuse of platform power and the resulting ethical problems. As platforms have expanded, capital-driven competition over data and traffic has undermined their ostensibly open and collaborative character. Algorithmic governance, market monopoly, accountability, and ethical problems arising from information asymmetry and unequal bargaining positions have drawn widespread market and public attention. In particular, dominant platform actors control data, rules, and algorithms, while regulatory systems often fail to keep pace. The resulting black box has contributed to distorted responsibility and ethics and to the erosion of user agency [20].

Existing studies have addressed the social responsibility of food-delivery platforms from multiple perspectives, including environmental pollution, labor rights, and platform governance. Building on this literature, the present paper adopts an integrated ESG framework that brings the environmental, social, and governance dimensions together to examine systematically both the manifestations and underlying causes of responsibility deficits among food-delivery platforms.

3. Major Corporate Social Responsibility Deficits of Food-Delivery Platforms

Food-delivery platforms have made substantial contributions to the digital economy and to the convenience of everyday life. Nevertheless, their business models and operating practices reveal numerous shortcomings in the fulfillment of corporate social responsibility. This section applies the ESG framework to analyze the principal responsibility deficits of platform firms across the environmental, social, and governance dimensions.

3.1. Environmental Responsibility (E)

3.1.1. Single-Use Plastic Pollution

The rapid growth of food-delivery platforms has made ordering prepared meals an increasingly common consumer choice. The large volume of disposable plastic containers generated in the process has substantially intensified plastic pollution. According to iResearch, the value of China's online food-delivery market rose from RMB 125 billion in 2015 to RMB 1.5 trillion in 2024, representing a compound annual growth rate of 28%. Over the same period, food delivery's penetration of the overall restaurant industry increased sharply from 4% to 26%, while the user base reached 592 million. The enormous number of orders entails a similarly large volume of disposable tableware and packaging, making plastic pollution one of the industry's most prominent environmental concerns.

Under prevailing platform operating mechanisms, delivery efficiency, food safety, and customer experience receive priority. Merchants therefore tend to overpackage meals to prevent spills, heat loss, and potential consumer complaints.

Although platforms provide a 'no disposable cutlery' option in their apps, its overall effect on plastic waste remains limited. In practice, the option functions more as a passive disclaimer directed at consumers than as an active mechanism for promoting greener behavior.

Platforms have also failed to use their extensive supply-chain integration and bargaining power effectively to encourage upstream merchants to adopt biodegradable and reusable materials. By not fully assuming this responsibility, they externalize onto society the substantial environmental costs of disposable plastic waste, including land use, soil and water pollution, and the ecological risks associated with microplastics.

3.1.2. Food Waste

On consumer-facing interfaces, platforms commonly employ marketing strategies such as threshold-based discounts, high minimum-order requirements, and bundled meals. By seeking to maximize average order value and gross transaction volume, these tools exploit consumers' price sensitivity and encourage them to purchase more food than they need, thereby increasing post-consumption waste.

On the merchant side, algorithmic order allocation improves efficiency but also creates substantial uncertainty in demand. To prepare for possible order surges during promotional campaigns, merchants must stock excess ingredients. When actual demand falls short of expectations, large quantities of prepared or semi-prepared food may have to be discarded.

Although platforms possess extensive data on both consumers and merchants, they have not adequately analyzed and used these data to help either group reduce food waste. This failure also reflects the difficulty platforms face in balancing commercial interests with environmental ethics.

3.1.3. Environmental Communication

Despite their vast consumer reach, food-delivery platforms devote relatively little attention to environmental communication and the promotion of a green consumption culture, a level of engagement that is inconsistent with their market position. As intermediaries connecting consumers and merchants, platforms should assume a greater role in guiding values as part of the social infrastructure. Yet commercial marketing occupies most of their user interfaces, while information about environmental protection and green consumption remains scarce and is not effectively communicated to consumers. On some ordering pages, merchants use nominally priced options to remind customers to participate in environmentally friendly practices. However, isolated merchant initiatives, constrained by platform design, have limited impact and weaken the industry's endogenous momentum toward a green transition.

3.2. Social Responsibility (S)

3.2.1. Responsibilities to Delivery Couriers

Available data indicate that the number of food-delivery couriers in China exceeded approximately 10 million by June 2025. Meituan reported 7.45 million couriers in 2023 and continued to record annual growth of nearly 20% in 2024, while Ele.me reported more than 4 million active couriers in 2023, with some individuals registered on both platforms. Despite the rapid expansion of this workforce, platform rules and protections remain inadequate. A range of long-standing problems has become increasingly visible and has generated numerous disputes [21].

Platform management of couriers is characterized by

virtualized workplaces, online access to work opportunities, flexible work arrangements, and fragmented working time [22]. De-employment, or the weakening of conventional employment ties, is a defining feature of the production relations associated with this new form of work and differs substantially from traditional, linear employer–employee relationships [22]. This arrangement allows platforms to reduce their responsibilities for basic social protections such as occupational injury coverage, healthcare, and pensions, leaving couriers to bear the social risks of their work alone. In effect, platforms use these practices to avoid legal obligations and externalize social risk, making it difficult to protect couriers' rights.

Becoming a delivery courier generally requires only a smartphone and an electric bicycle, making the occupation fundamentally labor-intensive [23]. Couriers as a group tend to have limited formal training and few specialized occupational skills. Although food-delivery platforms generally provide occupational safety training, its effectiveness in improving couriers' safety awareness and practices remains limited.

Platforms supply couriers with a large volume of orders and allocate them rapidly through algorithmic systems. Survey data show that 70.37% of couriers report receiving orders through random platform assignment, 18.52% report assignment based on proximity, and 11.11% must compete for orders themselves [24]. Most couriers therefore deliver orders assigned by the platform and have little meaningful choice. Algorithms dominate a process in which assignments must be completed within very short time frames. To meet demanding delivery targets, platforms use a variety of reward and penalty mechanisms, many of which are unreasonable and place couriers under severe pressure. Moreover, the routes generated by delivery algorithms are not always appropriate, creating substantial safety hazards under accelerated delivery requirements.

Under highly efficiency-oriented algorithmic management, human agency is severely diminished and worker well-being is neglected. This represents one of the most profound manifestations of platform responsibility deficits.

3.2.2. Responsibilities to Merchants

Although food-delivery platforms mediate transactions between consumers and merchants, they have not adequately fulfilled their responsibility to maintain a fair commercial environment. Platforms commonly charge merchants high commission rates, substantially compressing the margins of restaurants, particularly small and medium-sized operators. Data constitute a productive asset in the digital economy, yet platforms do not effectively share the consumer data they control with merchants. Instead, opaque traffic-allocation rules compel merchants to spend heavily on additional promotion to attract customers, further increasing their operating burden. These unequal relationships undermine the healthy development of the restaurant industry as a whole.

3.2.3. Responsibilities to Consumers

While food-delivery platforms offer consumers considerable convenience, they also fall short in protecting consumer rights. When food-safety problems arise, consumers are often caught in a cycle of responsibility shifting between platforms and merchants. Platforms frequently position themselves as information-service providers rather than food operators in an effort to limit their responsibility for merchant qualification reviews, routine oversight, and post-incident compensation. This stance

creates additional obstacles to consumer redress and blurs accountability for food safety.

Consumers' personal information and data privacy are likewise at risk. Platforms collect extensive data on users' identities, consumption habits, and locations, and a breach could have severe consequences. More troubling is the practice commonly described as algorithmic price discrimination against existing customers, whereby platforms use their informational advantage to display higher prices to established users while offering larger discounts to new users. Such data-driven price discrimination seriously infringes consumers' rights to information and fair transactions.

3.3. Corporate Governance (G)

3.3.1. The Algorithmic Black Box

An algorithmic 'black box' refers to a system or mechanism whose inputs and outputs are observable but whose process for transforming the former into the latter is partly or wholly concealed [25]. Transparency and accountability are closely connected: transparency is a foundation for assigning accountability, while accountability requires a clear frame of reference for algorithmic decision-making processes [26]. Food-delivery platforms rely heavily on complex algorithmic models for core operations such as order allocation and merchant ranking in order to improve delivery efficiency. Yet the operating principles and decision rules of these systems remain highly opaque to external stakeholders. Consequently, human judgment, managerial ethics, and discretionary decision-making are substantially reduced. Platforms focus primarily on the efficiency and financial returns generated by algorithms while failing to intervene effectively in ethical risks embedded in algorithmic decisions, including the excessive exploitation of couriers, unfair treatment of merchants, and price discrimination against consumers. When problems arise, platforms may characterize them as objective outcomes of the algorithm, thereby obscuring the human responsibility behind the technology. Delegating core corporate power to an opaque technical system thus produces a serious accountability deficit.

3.3.2. Regulatory Responsibilities

As intermediaries connecting consumers and merchants, online food-ordering platforms play an important role in regulating food safety in online catering [27]. Their function extends beyond facilitating transactions to active participation in and effective implementation of food-safety oversight [28]. Platforms' regulatory responsibilities include verifying the qualifications of participating merchants and monitoring disclosed information such as business names, addresses, and food-service licenses so that consumers can readily understand merchants' basic circumstances. In practice, however, platforms seeking to maximize merchant participation and market scale often conduct inadequate reviews. As a result, some ghost kitchens and unlicensed workshops evade scrutiny by forging or misappropriating credentials, directly transmitting food-safety risks to consumers.

4. Recommendations for Strengthening the Corporate Social Responsibility of Food-Delivery Platforms

4.1. External Oversight

4.1.1. Government Regulation

External oversight is an indispensable driver of responsible conduct by food-delivery platforms. As the principal actor in public administration, government plays a critical role in ensuring the safety of online food services [29], and effective regulation can promote the healthy development of the sector. Government regulation should improve the relevant legal and regulatory framework and clearly define platform responsibilities. With respect to couriers' labor rights, regulators should introduce stronger labor protections suited to evolving employment arrangements and clarify firms' fundamental obligations, including the payment of social insurance contributions. Platforms should not be permitted to evade their responsibilities through complex contractual arrangements.

Government should also actively encourage food-delivery platforms to adopt environmentally sustainable strategies, require them to oversee merchants' use of disposable tableware, and guide them toward stricter supervision of food safety among participating merchants.

4.1.2. Social Oversight

As a major channel of information dissemination, the media plays a complementary and supervisory role in food-safety regulation for online catering [30]. Broad social oversight can likewise encourage platforms to fulfill their responsibilities. News organizations should conduct in-depth investigations into platform ESG problems, stimulate informed public discussion, and press platforms to implement substantive corrective measures.

Public participation is a bottom-up regulatory force and an important component of the food-quality oversight system; it plays a particularly distinctive role in online catering [31]. Consumers should be given more opportunities to report their experiences accurately and openly. Doing so can reduce food-safety incidents, improve information transparency in the food-delivery market, and promote healthy competition among merchants.

4.2. Building Internal ESG Governance Systems

4.2.1. Fulfilling Environmental Responsibilities

To fulfill their environmental responsibilities, platforms should use innovations in products and mechanisms to promote green consumption systematically. They could offer points or charitable rewards to users who select environmentally friendly options, thereby providing positive reinforcement for green behavior. Platforms could also establish an official 'Green Restaurant' certification system and provide greater traffic exposure and commission discounts to merchants that use sustainable packaging or offer smaller portions, thus creating market incentives for environmental practice. At the supply-chain level, platforms could leverage economies of scale to provide merchants with affordable sustainable tableware through centralized procurement and explore systems for collecting and reusing food-service items, thereby advancing a green transition at its source.

4.2.2. Assuming Social Responsibilities

Platforms must balance their relationships with couriers and merchants to create benefits for all parties. For couriers, they should assume essential responsibilities by providing necessary social insurance and commercial accident coverage. Order-dispatch algorithms should be optimized to account fully for real-world conditions such as weather and traffic, set more reasonable delivery times, and provide accessible appeal mechanisms that safeguard workers' basic dignity. For participating merchants, platforms should establish fairer and more transparent terms of cooperation, disclose commission structures more clearly, make timely adjustments, and curb unfair competitive practices.

4.2.3. Improving Corporate Governance

Improved corporate governance requires platforms to open the algorithmic black box and increase operational transparency. Platforms could invite external experts and stakeholder representatives to conduct regular ethical reviews of core algorithms and directly link ESG performance to executive compensation. Only when indicators such as courier satisfaction, environmental performance, and the consumer-complaint resolution rate become important determinants of executive remuneration can ESG principles be embedded in every strategic decision and routine operation, enabling a genuine shift from rhetoric to action.

5. Conclusion

5.1. Key Findings

Using the ESG framework, this paper has examined the current state of corporate social responsibility among Chinese food-delivery platforms. The analysis shows that, while these platforms create substantial economic value and social convenience, they exhibit responsibility deficits across all three ESG dimensions. Environmentally, their business models contribute to serious single-use plastic pollution and food waste. Socially, platforms provide inadequate protection for couriers' labor rights, use their market power to place pressure on merchants, and insufficiently protect consumers in relation to food safety and data privacy. In governance, responsibility is weakened by problems such as opaque algorithmic decision-making.

The current social responsibility challenges facing food-delivery platforms stem primarily from the neglect of the legitimate interests of key stakeholders—couriers, merchants, and consumers—in the distribution of value.

5.2. Limitations

This paper relies primarily on publicly available academic literature, industry reports, and news coverage and lacks support from original empirical data. The generalizability and precision of its conclusions therefore require further empirical testing. In addition, the analysis focuses mainly on ESG risks and responsibility deficits and does not examine in sufficient depth the positive social value of food-delivery platforms in areas such as employment creation, local economic development, and technological innovation.

References

- [1] Jiao, H. (2023). A digital platform ecosystem perspective: A new lens for management theory in the digital economy. *China Industrial Economics*, (7), 122–141. (In Chinese)
- [2] Liu, Y., Pang, J., & Yang, H. (2022). The impact of launching food-delivery services on restaurant sales: An empirical analysis based on micro-level data. *Price: Theory & Practice*, (11), 172–175. (In Chinese)
- [3] Ouyang, R., & Liu, X. (2025). The mechanisms, potential risks, and remedies of involuntary competition among digital platforms. *Research on Financial and Economic Issues*, (3), 3–19. (In Chinese)
- [4] Wu, P. (2025). Rethinking and adapting the determination of competitive harm in platform antitrust enforcement. *Journal of Nanjing University (Philosophy, Humanities and Social Sciences)*, 62(1), 67–75, 158–159. (In Chinese)
- [5] Chen, T., Wang, W., & Zhang, Y. (2024). Theoretical mechanisms through which e-commerce platforms affect consumer welfare and corresponding policy recommendations. *Price: Theory & Practice*, (10), 191–195, 228. (In Chinese)
- [6] Liu, C., & Dai, X. (2025). The theoretical origins of involuntary competition among food-delivery platforms and pathways beyond it. *Price: Theory & Practice*. <https://doi.org/10.1108/TP-0000-0000> (In Chinese)
- [7] Clark, J. M. (1916). The changing basis of economic responsibility. *Journal of Political Economy*, 24, 209–229.
- [8] Carroll, A. B. (1979). A three-dimensional conceptual model of corporate performance. *Academy of Management Review*, 4(4), 497–505.
- [9] Liu, X., & Cao, S. (2017). A review of the corporate social responsibility literature. *Journal of Management Engineer*, 22(4), 10–14. (In Chinese)
- [10] Gao, J., Chu, D., Lian, Y. (2021). Can ESG performance improve corporate investment efficiency? *Securities Market Herald*, (11), 24–34, 72. (In Chinese)
- [11] United Nations Environment Programme. (2025). Annual report 2024.
- [12] Zhong, S., & Xiong, H. (2025). Domestic and international conditions confronting plastic-pollution control in China and policy recommendations. *Environmental Protection*, 53(4), 73–77. (In Chinese)
- [13] Mo, Y., & Li, L. (2022). The impact of the gig economy on entrepreneurship: Evidence from the rise of food-delivery platforms. *Management World*, 38(2), 31–45, 3. (In Chinese)
- [14] Seamans, R., & Zhu, F. (2014). Responses to entry in multi-sided markets: The impact of Craigslist on local newspapers. *Management Science*, 60(2), 476–493.
- [15] Zervas, G., Proserpio, D., & Byers, J. W. (2017). The rise of the sharing economy: Estimating the impact of Airbnb on the hotel industry. *Journal of Marketing Research*, 54(5), 687–705.
- [16] Sundararajan, A. (2014). Peer-to-peer businesses and the sharing (collaborative) economy: Overview, economic effects, and regulatory issues. Testimony submitted for the hearing titled *The Power of Connection: Peer-to-Peer Businesses*.
- [17] Greenwood, B., Burtch, G., & Carnahan, S. (2017). Unknowns of the gig economy. *Communications of the ACM*, 60(7), 27–29.
- [18] Chen, L. (2020). Labor order under digital control: A study of labor control among food-delivery couriers. *Sociological Studies*, 35(6), 113–135, 244. (In Chinese)
- [19] Jia, K. (2021). Can algorithms be neutral? New possibilities for the gig economy. *Beijing Cultural Review*, (4), 117–124, 159. (In Chinese)
- [20] Fan, R. (2021). Platform-enabled technology, public games, and complex adaptive governance. *Social Sciences in China*, (12), 131–152, 202. (In Chinese)

- [21] Wu, C. (2025). Protecting the labor rights and interests of food-delivery couriers in the platform economy. *Journal of Western*, (4), 80–83. (In Chinese)
- [22] Tang, H. (2019). A legal study of employment-relationship identification for food-delivery couriers under the Internet Plus business model. *Legal System and Society*, (36), 38–41. (In Chinese)
- [23] Jin, W., Miao, X., & Li, C. (2024). Working conditions and rights protection of food-delivery couriers under new forms of employment. *Modern Business*, (15), 172–176. (In Chinese)
- [24] Zhang, H. (2022). An empirical study of labor-rights protection for platform workers in the algorithmic economy: Evidence from food-delivery couriers in Shanghai. *Journal of Beijing Vocational College of Labour and Social Security*, 16(4), 31–39. (In Chinese)
- [25] Pasquale, F. (2015). *The black box society: The secret algorithms that control money and information*. Harvard University Press.
- [26] Zhang, J. (2025). Research on algorithmic black boxes: A cognitive science perspective. *Studies in Science of Science*. (In Chinese)
- [27] Chen, C., & Han, W. (2021). A law-and-economics analysis of food-safety responsibilities among third-party online food-ordering platforms. *Contemporary Law Review*, (4), 51–160. (In Chinese)
- [28] Ning, K., Lu, M., & Liu, Z. (2025). Which type of food-delivery regulation do consumers trust? Quality supervision, information acquisition, and food safety in online catering. *Consumer Economics*. (In Chinese)
- [29] Gao, L. (2019). Challenges and countermeasures in the co-governance of food safety in China. *Legal Forum*, (5), 96–104. (In Chinese)
- [30] Zhang, M., Tang, X., Pu, M., Zhang, J., & Zheng, F. (2014). Collaborative governance of food safety: Enterprises, government, and third-party regulatory forces. *Food Science*, (13), 286–292. (In Chinese)
- [31] Niu, L., & Wu, L. (2017). Public participation and collaborative governance in food-safety regulation. *Gansu Social Sciences*, (6), 232–237. (In Chinese)