Exploring a New Social Co-governance Model of Takeout Food Safety Based on Third-party Supervision

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Abstract. The inadequate regulations on takeout in China have made it difficult for consumers to protect their rights. Coupled with the complexity of the food safety supervision and the special model of the online meal ordering industry, there are many setbacks for the food safety supervision of the Internet catering industry. Based on this, this paper discusses a government-enterprise linkage system, which is mainly supported by a third-party food inspection organizations and government technical personnel. It establishes a traceable food information system with the help of “Internet of things” and “Internet plus” information tools. At the same time, a new model of social co-governance establishes a credit system with the help of block chain technology.

1. Introduction
In recent years, with the vigorous development of the Internet, the industry of the online meal ordering appears as the time requires. Consumers can enjoy delicious food without leaving home. With the various prices, the continuous optimization of the market structure, and the further improvement of residents’ consumption capacity, the industry chain of takeout has gradually improved and the market steadily maintains to grow. According to the statistics from the third quarter of 2019, the overall transaction scale of takeout market in Chinese has reached 195.29 billion, up 11% from the previous quarter. Compared with the same period of last year, it has increased by 35% year-on-year, and the scale of takeout users is nearly 416 million. Since 2015, transaction scale of takeout market in Chinese has entered a period of rapid growth. For five consecutive years, the scale of the industry has continued to expand steadily. The situation is shown in Figure.1.

![Transaction scale: hundred million RMB](image)

Fig.1. The transaction scale of takeout food market in China from 2015Q1 to 2018Q4
Based on “the Internet plus” model, the takeout industry has not only brought convenience to our lives, but also accelerated the rapid development of the food industry. However, with the booming development of the Internet food industry, more and more food safety problems have arisen. People’s high requirements to the quality of food safety pose a severe challenge to the society. The complexity of food safety supervision and the particularity of the business model made the supervision difficult.

2. The status of food safety supervision in the takeout industry
Before 2015, the takeout Industry was basically in a state of free development without supervision. While the industry has brought huge markets and business opportunities, many problems have also arisen. China Food and Drug Administration(CFDA) released Draft for the Supervision and Administration of online Food Operation(Draft for Comments) in September 2015, which clearly stipulated the obligations of online food operators and legal responsibilities of online food trading platform providers. At the same time, the rule of 62th in New Food Safety Law was implemented by the government in October, which specifically regulates online sales. The bill requires online food trading platforms to scrutinize the licenses of takeout business operators and register them in real name[1]. The bill clarifies the responsibilities of all parties in online sales. Although food producers and operators bear the main responsibility, the online food trading platform may be jointly and severally liable if it fails to realize the relevant management responsibility[2]. In 2017, the CFDA released the Regulations for the Supervision and Administration of online Food Services. The regulations were formally implemented from January 1, 2018. It required that the online ordering platforms shall review the providers on the spot, carry out the real name registration, scrutinize the relevant licenses, and sign an agreement with providers to clarify the responsibility of food safety. The shops’ names and addresses publicized on the Internet shall be the same as the actual shops’ names and addresses, and the pictures publicized such as the facade, lobby and kitchen shall be consistent with the physical shop, etc. In addition, provincial governments such as Beijing, Shanghai, Henan, and Shaanxi have also issued local Regulations for the Supervision and Administration of Online Food Services, which have made clearer requirements and regulations on the responsibilities of operators and platforms. For example, the regulation introduces the quantitative management into the online ordering supervision, clarifies the qualification of access, and emphasizes the normalization of sampling inspection[3].

As the relevant regulations are relatively strict, some platforms, in reality, not only fail to do their regulatory obligations, but default to illegal businesses to enter and operate. Platforms even induce businesses to jointly cope with external supervision. This lazy attitude will undoubtedly lead to the harm of businesses to the safety of users through the Internet[4].

3. Problems of food safety supervision in the takeout industry

3.1 Imperfect government supervision
First of all, the regulatory situation of the food industry is complex, involving multiple regulatory authorities. So is the takeout safety supervision. Secondly, the takeout platforms are developing together, and the number of businesses settled in is also expanding. Due to the large number of merchants and the concealment of the transaction between the platforms and the merchants, it is difficult for the government to conduct comprehensive supervision. Finally, at the beginning of this industry, in order to encourage economic development, the government lowered the threshold for approval of related network industries, so some merchants have not been strictly examined before entering the market.

3.2 Superficial platform supervision
In the early stage of the development of the takeout industry relying on the Internet, in order to quickly occupy the market and seek benefits, platforms set a lower threshold for merchants to enter. Not only did the platform not fully perform qualification checks on various merchants in accordance with
relevant regulations, but it also did not have a special person to conduct on-site inspections of the store. In 2018, even though the platform increased inspections on food safety, it signed strategic cooperation agreements with third-party testing companies[5]. However, there are still some non-compliant businesses that rely on the identities of others, and even open more than one store, so that many businesses operate without a license and illegally. The profit of the platform is directly related to the number of merchants and sales. Considering its own interests, the platform tends to choose the behaviours beneficial to the platform when it supervises the merchants, so as to maximize its own interests.

3.3 Lack of business self-discipline
In order to chase their own interests, some merchants may violate the corresponding regulations, such as fraudulent documents and no physical stores. The competitive nature and profit-seeking nature of the industry make some businesses manage to reduce costs to earn more profits. It is easy to see the situation of “bad coins expelling good coins.”

3.4 Consumers are not willing to complain actively
There is a serious information asymmetry between takeout merchants and consumers. Consumers’ understanding of takeout merchants is limited to the food safety files provided by the ordering platform, and consumers often play the role of post supervision. What consumers receive is processed food, but they have no way to know whether there are unqualified food materials, excessive additives, secondary pollution and other problems in takeout. And because the credit evaluation system of the ordering platform is not perfect, consumers’ right to know is difficult to protect, and the right to participate is difficult to fully express. In the process of taking out service, consumers often face the problems of low efficiency in handling complaints, difficulty in providing evidence and high cost of safeguarding rights when their rights and interests are infringed. In this way, it has hit the enthusiasm of consumer supervision, believing that the less trouble the better, so that consumers can not actively play their supervision power.

4. The exploration of social co-governance model based on the supervision of the third-party

4.1 The theoretical framework of the supervision model of the third party inspection organization
Our country is in a critical period of development. Today, people have higher requirements for material and cultural life. How to improve national happiness and promote social harmony is a problem worthy of consideration. Due to the common interests between businesses and platforms, it is necessary to have a third-party regulatory body. Food safety is related to everyone’s fundamental interests. The rapid development of science and technology and relevant policies issued by the state provide a strong background for this regulatory model. The theoretical framework of introducing the regulatory body of the third-party inspection agency to carry out food safety supervision for takeout, which mainly includes food information traceability system and sunshine credit evaluation system.

The new social co-governance model of takeout food safety based on third-party supervision is shown in Figure.2.
Fig.2. A new social co-governance model of takeout food safety based on a third-party supervision.

4.1.1 The state issued relevant supporting policies and established a third party team for food safety inspection

How to ensure the food safety of the people is an indispensable measure for food inspection. On April 25, 2019, the State Administration of Market Supervision issued the Guiding Opinions on strengthening the professional and professional Construction of Food Inspection Teams, which clearly stated that “After three to five years of unremitting efforts, we will gradually establish a food inspection team with strong politics, loyalty, professionalism, and reasonable structure that is compatible with China’s food safety supervision.”

On May 9, 2019, the State Council of the CPC Central Committee implemented the Opinions on deepening the Reform and strengthening Food Safety Work, proposing to “strengthen the inspection and law enforcement”, “strengthen the training and assessment, strengthen the construction of professional inspection team relying on existing resources, improve the professional skills of inspectors, and timely discover and deal with potential risks.”

Therefore, building a strong food inspection team to carry out the most rigorous inspection of food to ensure the quality of the food and ensure the effectiveness of the inspection is an urgent task in the field of food safety in China.

4.1.2 A Food Information Traceability System is established with “Internet of Things” design and “Internet plus” information tools

In 2008, China learned from the EU developed countries to establish a food safety traceability system, and at the public level, improved food safety through the traceability system. The promulgation of the “Food Safety Law of China” in 2009 affirmed the food safety traceability system from the national legal level, and established a full-process supervision system, so that food circulation can be effectively traced through electronic certificates and paper[6].

In recent years, the concept of big data and the design of the “Internet of Things” and “Internet plus” information tools have been of great significance to the development of food supervision. For enterprises, RFID barcode is conducive to the establishment of traceability system. By using RFID barcode, the product information can be enhanced, which is of great significance for the establishment of food safety traceability systems for small and medium-sized enterprises. Currently, food is designed with the “Internet of Things”. Consumers can identify products by scanning the exclusive QR code and other electronic label information (raw materials, origin of raw materials, processing producers, production date quality inspection report, food regulatory bureau filing)[7]. QR code is the only identification and attribute of food. Consumers are learning about food through intelligent terminal to realize the transparency of traceability food production and provide a good example for safety.

Although the application of “Internet of things” and “Internet plus” information tools in the field of food safety is in the test stage, they have received good feedback. In September 2019, Guangdong
Provincial Market Supervision Bureau promoted the use of “food safety seal” to the whole province, printed the first batch of 4 million “food safety seal”, encouraged the online food operators to widely use “food safety seal” when packing take out food and lock the packing boxes, and made the first pass for consumers to deliver good food. Consumers can learn about food information by checking and scanning “Food Safety Seals”, so as to better protect the health and safety of take out food[8].

4.1.3 A sunshine credit evaluation system based on blockchain technology is established

Due to the regulatory system, science and technology, and conflicts of interest, merchants and platforms are unwilling or passive to disclose the true information of the store. Therefore, the data quality on the platform is not high or the false water content is serious, which may cause food safety problems to harm the health of consumers. Based on the advantages and related applications of blockchain technology, this paper proposes a new business credit sharing model based on blockchain technology[9]. This mode has the characteristics of decentralization, transparency, tamper proof, high efficiency and low cost, which is of positive significance to accelerate the construction of business credit system. This mode has the characteristics of decentralization, transparency, tamper proof, high efficiency and low cost, which is of positive significance to accelerate the construction of business credit system.

Today, blockchain technology has been widely used in the construction of credit systems. Transparent and open construction can improve efficiency. Information sharing conforms to the development trend of the times and trends, and can greatly improve efficiency and efficiency. Relying on blockchain technology to realize the sharing of takeaway merchant information, consumers can check the relevant information of merchants, compare with the information registered by the government, and identify the authenticity of merchants’ information[10].

As the main body of the government, the Food Supervision Bureau, through strengthening the supervision mechanism in advance, reviews the qualification of businesses before they enter, prevents and supervises potential food safety problems, improves the qualification review process, and improves the threshold for businesses to enter. It conducts on-the-spot investigation on whether there is concealment of store entities, whether the certificates are true and complete, kitchen environment, etc. and inputs the obtained information into the database and share it with consumers, so that consumers can understand the real situation[11].

The condition of National Credit Information Sharing Platform in China is demonstrated in the following Figure 3.

Fig.3. The condition of National Credit Information Sharing Platform

Due to the complex field of law enforcement and limited regulatory effectiveness, there is an “interest group” between the food ordering platform and the takeaway merchant. Therefore, a third-party food inspection agency that has no direct conflict of interest with both parties can provide a healthier and sunny development environment, and also create a safer food environment for the majority of consumer groups.
4.2 Participants in social co-governance

4.2.1 Professional food testing organization was taken as the main body to realize the linkage between government and enterprise

In 2018, the take-out ordering platform increased the food safety supervision of partner merchants. Meituan Review has successively signed strategic cooperation agreements with professional third-party testing companies, such as CIK Testing Group Co., Ltd., to control the quality of food with professional strength, strengthen the management of food supervision, and further protect “safety on the tip of the tongue” of consumers. Therefore, having a professionally qualified food inspector as the main body of inspection makes the field of food supervision more secure and has positive significance for promoting food safety.

Since 2017, Nanjing, Jiangsu Province has taken the lead in exploring the training of qualified personnel engaged in food safety on-site inspection. Other provinces have also strengthened the construction of food professional inspection teams. We should explore and innovate to promote the construction of a professional food inspection team from the four aspects of institution building, the system building, team building, and team training.

Incorporate the inspection and technical personnel of the Food Supervision Bureau into the administrative system, and undertake the tasks of food production review and inspection. At present, the state has introduced professional and technical personnel through methods such as in-system selection, open recruitment, and the labor dispatch to expand the team of full-time inspectors. Simultaneously, the construction of inspectors will be increased and education and training will be increased. Many provinces are actively building teams of food inspection technicians.

Therefore, this paper suggests that we should take professional food testing institutions as the main body, the technical personnel of CFDA as the assistance, reasonably integrate resources, formulate reasonable systems, adopt the method of filling in and making up, and establish a comprehensive food testing institution of decompression testing in all links of “from the head of the field to the dining table”. Enterprises and governments restrict each other to ensure the fairness and transparency of the test results, so as to realize the linkage between government and enterprises.

4.2.2 Focusing on industry supervision

Food safety issues not only affect the income of takeout businesses, but also indirectly affect the reputation of takeout platforms. Therefore, the Food and Drug Administration should actively exert the strength of the public, listen to the opinions of consumers, encourage consumers to supervise the behavior of takeout businesses, verify the feedback obtained, and share it with the public.

Concurrently, consumers should take the initiative to feed back their own information to CFDA through network means, promote the improvement of the regulatory system, and supervise the self-discipline operation of takeout platform in the market.

4.2.3 Assisted by volunteers and other social forces

In order to solve the issue of the heavy requirements of inspection of the inspection team of the regulatory department, the Food and Drug Administration can recruit volunteers and train volunteers. Excellent volunteers can get places in administrative or enterprise units. Volunteers carry out daily supervision of takeout merchants from time to time, which in fact increases the merchants’ attention to food safety. At the same time, volunteers can also help the Food and Drug Administration process consumer feedback and verify information to achieve mutual complementarity, forming a complementary chain with full-time inspectors as the main and part-time inspectors as the supplement.

4.2.4 Government as coordinating force

The government plays an important role in food safety supervision. The government empowers food safety regulators to achieve multi-party linkage. In this way, the government departments try to avoid the phenomenon of “kick the ball” each other when problems arise. At the same time, the government
should also actively assist the supervision of the third party, and share information of business such as the business license, food hygiene permit, operator and other information to the third party[12]. The government should promote the long-term development of health supervision of food safety by rationally allocating resources, coordinating multiple parties, and introducing relevant policies.

5. The implementation of social co-governance model

5.1 Separation of functions between food inspectors and law enforcement officers
Because there are many merchants in the take-out platform, it is impractical for food inspection team technicians to take both security inspection and law enforcement into consideration. Therefore, this paper suggests that the functions of inspection personnel and law enforcement officers should be separated to perform their respective duties.

5.2 Food safety inspection system
In the aspect of supervision, we may adopt a four-level administrative management system at the provincial, municipal, county and street levels, and adopt the supervision system of hierarchical management, mutual cooperation and extensive participation. Inspectors carry out the following tasks from time to time: sampling inspection, taking photos, recording and obtaining evidence, business personnel required to produce documents, ordered to close rectification, etc.

5.3 Consumer real-name feedback is protected by the government
Once consumers encounter food safety problems, they can turn to the Food and Drug Administration to make real-name complaints through the Internet, and CFDA can then carry out targeted measures. But consumers’ information is protected by law enforcement agencies and will not be known by businesses. Therefore, consumers’ rights can be protected from merchants. Every year, a lot of administrative resources in the field of market supervision are crowded out by professional claims and reporters, which greatly reduce the effectiveness of supervision, and the real-name system can punish such groups. Therefore, the real-name system can also avoid the problem of malicious negative evaluation by “professional claimants” in the field of food safety.

5.4 Food inspectors are supervised by public
In order to prevent food inspectors from accepting collusion between takeout businesses, coveting interests swayed their positions and touched the moral bottom line. This article recommends taking irregular inspections and replacing inspectors to avoid the phenomenon of “acquaintances talking well”. At the same time, contact information and information of the inspectors can be publicized on the stores of the inspecting merchants, so that they can accept the supervision of the public. Once the food inspector’s information is found to be false, it will be pulled into the industry blacklist, affecting personal credit information.

5.5 Achieve dual-line dynamic management memorandum of “online + offline supervision”
While building data database for takeout merchants by using block chain technology, third-party entities should also supervise the ordering platform, mainly monitoring the management of the settled merchants by the ordering platform, for example, the food ordering platform will also share information about the merchant’s addresses and credentials with consumers, but its authenticity is not known to consumers. At this time, the third party can compare the real information obtained by itself with the information provided by the ordering platform, and disclose the management of the ordering platform to consumers. In this way, it has formed a situation of competition among the major takeout ordering platforms. In order to maintain the market and retain customers, we have to carefully manage the business information. Third parties may occasionally conduct hygiene inspections of takeout platforms, distribution units, and merchants to promote their standardized operations[13]. When
violations are discovered, they are dealt with in accordance with relevant measures and updated in a dynamic memo in a timely manner to actively promote the development of the industry.

6. Conclusions

Internet catering is booming, but due to the special management pattern, special supervision objects, difficult food traceability, unclear duty and other problems, the source of the issue is complex, and it also brings inconvenience to food safety supervision. Under the correct guidance of the third-party independent supervision model, all walks of life and industry will work together to implement a strict and efficient food safety governance system co-managed by the society, and build a safe, sunny, healthy catering environment and a long-term governance mechanism for food safety.

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