

Exploring China's Food Safety Problems and Solution from the Perspective of Transaction Costs: Taking the Incident of Earth Pit Pickled Cabbage as an Example

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Abstract: Food safety is always a hot issue of people's livelihood in our country. However, under the deterrent of existing laws and regulations, food safety problems are still emerging in an incessant fashion. However, under the deterrent of existing laws and regulations, food safety problems are still emerging in an incessant fashion. In 2022, the 315 Gala which produced by China Central Television featured Hunan Chaqi Vegetable Industry Co Ltd., in which the double standard of export and domestic sales caused heated discussion, and this incident also triggered a national crisis of confidence in food safety again. How to solve the problem of double standards of food enterprises? How to improve public trust in food safety? How to standardize the food safety standards? The above problems can be well explained from the perspective of transaction costs. Governments, enterprises and consumers all choose lower transaction costs, resulting in food safety standards that are not in line with the requirements of the international food safety standards. This paper will discuss the choices made by the government, enterprises and consumers in the face of food safety issues and the consequences, and put forward brief measures to improve the supervision standards of food safety.

Keywords: Transaction Costs; Food Safety; 315 Gala

1. Introduction

In 2022, the 315 Gala, an annual show produced by China Central Television focusing on the protection of consumers' rights revealed the lack of hygiene in the processing of pickled cabbage, at the Hunan Chaqi Vegetable Co Ltd. this year. A video showed that workers some wearing slippers, some barefoot, stepping on the pickled cabbage. Some of them even smoking and throwing cigarette directly into the cabbage. This video became one of the most hotly debated topics on the social media. Many consumers are concerned after eating the pickled cabbage flavored instant noodles. Although it's been two years, consumers still think of this incident when they talk about food safety issues, which shows its influence.

Hunan Chaqi Vegetable Co Ltd. is located in Hunan Province, Huarong County, which is well-known as a vegetable reprocessing enterprises for producing a number of well-known enterprises such as Master Kong and KFC. In an unannounced visit by a CCTV reporter, the manager of the Chaqi company said, pickled cabbage for domestic consumers is made in earth pits, while pickled cabbage for foreign consumers is standardized in factories. The earth pit which is full of twigs, cigarette butts and a lot of garbage scared consumers, who said they would not buy products sold by the company again. Since the 315 Gala exposed this incident, a nationwide food safety crisis of confidence has erupted once again. Although under the protection of the Food Safety Law of the People's Republic of China and Law of the People's Republic of China on the Protection of Consumer Rights and Interests, there are still many food safety problems such as melamine and Sanlu milk powder? These incidents often have something in common: national brand, and the food safety problem occur because of the downstream industry chain but not the brand itself. New institutional economics shows that the system is the decisive factor affecting the behavior and performance, so giving up the safety of food is the producers in the established rules and regulations made under the system to maximize their own interests in the choice.^[1] And the root of the formation of interests lies in the cost. Therefore, this paper tries to explore the causes of food safety problems in the pickled cabbage incident from the perspective of transaction costs, and provides measures to solve the problem.

2. Theoretical Framework

Ronale Coase (1937) published an article called *The Nature of the Firm*, which brought a new idea of transaction cost analysis to economic. Since then Williamson (1985), Dahlman (1979), North (1981) and Zhang Wuchang (1987) have defined and explained transaction costs. [2] Transaction costs can be categorized into the following three types: (1) search and information costs; (2) bargaining and decision-making costs; and (3) monitoring costs and contractual obligation fulfillment costs. According to Zhang Wuchang, transaction costs are essentially the so-called institutional costs, and changes in transaction costs generally lead to changes in the contractual or organizational structure. [3] Dahlman explain the transaction costs from the perspective of contract, he believes that there is a twinning between transactions, contracts and costs. The parties to a transaction may reach an agreement only if they understand each other and inform each other of the transaction opportunities that may be available to them. But obtaining and transmitting information between the two parties to a transaction is costly in terms of time and resources. Transaction costs therefore accompany the entire process of contracting and performance, including the cost of understanding information, the cost of bargaining and decision-making, and the cost of enforcement and control. Based on this theory, the pickled cabbage incident will be analyzed according to the following framework. As shown in Figure 1.

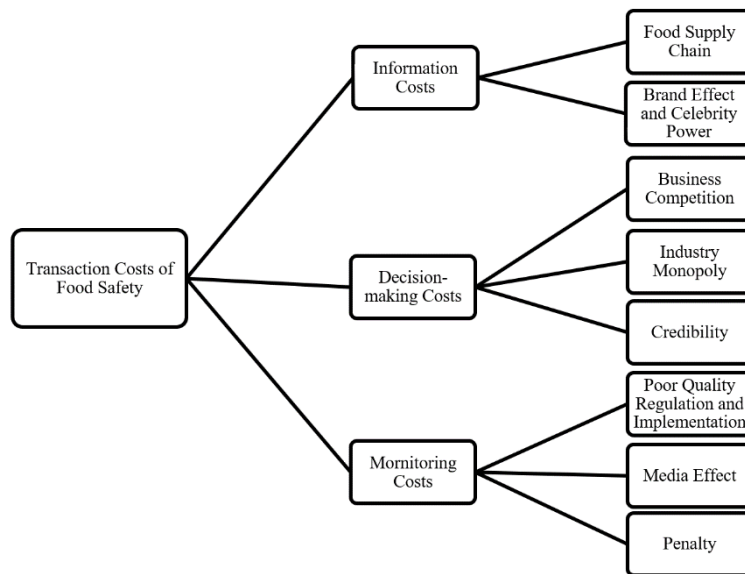


Figure 1: The analytical framework

3. Analysis From the Perspective of Transaction Cost

3.1. Information Costs

With the standardized and systematic food processing industry, catering companies often cooperate with various types of vegetables, industrial and commercial, dairy product manufacturers, etc. to reduce operating costs and improve operating efficiency. As a kind of small side dishes that ordinary people can make, pickled cabbage is less expensive and technically difficult to make. Therefore, some vegetable reprocessors would buy pickled cabbage from local farmers and sell it to catering companies through packaging. This is a classic model of deep processing and factoryization of modern agriculture. In this way, enterprises can not only reduce the cost of raw material procurement and processing costs, but also drive the economy of the surrounding rural areas. Taking the pickled cabbage supply chain of the Chaqi vegetable industry as an example, it can be shown in the Figure 2.

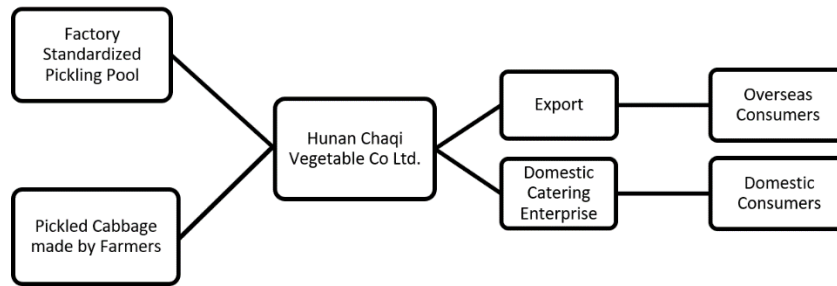


Figure 2: Pickled Cabbage Supply Chain of Hunan Chaqi Vegetable Co Ltd.

The reporter followed the delivery driver to the farmland near Tongfu Village, Huarong County while interviewing the Chaqi food industry. There are many residues of garbage such as branches, snails, feathers and cigarettes in the earth pits and no one clean up. In the interview, the manager who inserted the Chaqi vegetable industry stated that the pickled cabbage which came from farmland did not require secondary fermentation, and it could be directly sold. In addition to the Chaqi vegetable industry in Hunan, the earth pit pickled cabbage in Huarong County will also be sold to different kind of food processing enterprises in Hubei, Sichuan and Shanghai, such as Yayuan Sauce Food Factory, Tan Tan Qiao Food Co., Ltd. and Jinrui Food Co., Ltd., etc. These enterprises all admitted in the interview that due to the absence of secondary fermentation, pickled cabbage would deteriorate in a short period of time. In order to avoid this situation, they would add a large amount preservative and color fixative. But these additives are volatile, although the preservative content exceeds the standard during the production process, it has met food supervision standards when selling. These food manufacturing companies use this chemical change to get around the ban. Worse still, these pickled cabbage enterprises will not mark the content of preservatives in the product manual. Due to the typical characteristics of credence goods in food, there is information asymmetry in food safety issue.^[4] In other words, after entering the human body, preservatives and additives will not cause adverse reactions immediately. It needs to take a long time to accumulate or large dose intake before the incubation period. This will have serious misleading effects on consumers in information disadvantages. In order to obtain the real data of food ingredients, consumers need a lot of time and energy to search and confirm. In addition, most of the food companies supplied by the Chaqi vegetable industry are national brands, such as Master Kang. These brands often choose celebrities with national influence, such as Wang Han, as spokespersons. Consumers with bounded rationality often fall into the herd effect, as the weaker party in obtaining information, consumers are repeatedly deceived by companies and forced to purchase inferior products.

3.2. Decision-Making Costs

Consumers cannot distinguish the advantages and disadvantages of products due to the lack of professional knowledge. Under the spontaneous regulation mechanism of the market, the supply of high quality products cannot be guaranteed. In this way, lemon's problem will occur, which means bad money drives out good.^[5] In order to reduce transaction costs, protect their own interests, and enhance competitiveness, enterprises may lead to endless shoddy goods in the market. The Chaqi industry reached 870 million yuan in revenue the previous year before the 315 gala. And it has obtained a number of honors and certifications such as Well-known Trademark in China and Chinese Food Safety Demonstration Units, which is a well-deserved industry leader. In this context, the Chaqi vegetable industry not only need to face the competition of cheap products in small and medium-sized enterprises in China, but also facing the challenges from overseas products. Therefore, in order to reduce costs as much as possible to seize the market as much as possible and maintain its status, the Chaqi vegetable industry choose to sacrifice the quality of the product with cheaper ingredients, and ignore the inspection of the health indicators required by the Food Safety Law of the People's Republic of China, and add a large amount of prevention. Driven by the interests, Master Kang also acquiesced to continue to acquire such ingredients and raw materials, so that the product only follows the principles of minimum damage and minimum standards. That is, the unsafe factors of foods will not cause harm to the body under the most reasonable intake standard, that is a lowest standard.

In addition, domestic food companies have great differences in export and domestic safety standards. In the interview with reporters, the manager of the Chaqi vegetable industry said that if there is a foreign matter in the food packaging, it may be fined only one or two thousand yuan in China, but it would be

100,000 yuan abroad. Foreign countries, especially developed ones, have stricter regulatory standards for food safety. For example, the United States adopts multiple departments and clear responsibilities regulators (FDA, USDC, etc., and each state is also equipped with food prosecutors, foodologists). The US also lays down transparent formulation of food safety and encourages the public to participate in food safety supervision. Germany has adopted high punishment measures to strictly fight merchants who violate the Food Safety Law. France implements the system of agricultural product quality identification logo system. ^[6] Under the management of high -intensity government, the control of export food companies in developed countries has been strengthened. This is why many Chinese food companies export high -quality products abroad, and have treated poor quality products, which is a useful way to reduce transaction costs. Food production enterprises need to pay high decision -making costs to ensure food safety. Therefore, rational food producers believe that even if they follow the law to produce compliant food, they will not improve the chaotic food market. Instead, if production costs is reduced, their own income will increase. Besides, the update speed of relevant laws and regulations is relatively slow directly leading to the light punishment, which drive some food production enterprises to take risks and embark on illegal paths.

3.3. Monitoring Costs

The central government's policy implementation mechanism has the following approaches: conventional governance (the degree of goal differences and the degree of information asymmetry between the central government and local governments are both low), decentralized governance (there is some consensus between the central government and local governments on policy goals, but due to a high degree of information asymmetry between them), centralized governance (there is a high degree of goal differences between the central government and local governments on policy goals, but due to a low degree of information asymmetry between them), and campaign-style governance (characterized by the double-high feature of high goal differences and high information asymmetry). Due to the professionalism of food safety management knowledge and the vast Chinese and populated population, the central government usually adopts the method of decentralized management in food safety management, which means the management of management is sent to the local government after formulating the highest law. It can effectively reduce transaction costs and improve work efficiency. But the concept of food safety itself is difficult to define. For example, does food have a latent impact on consumers' physical health? Is the problem of food safety caused by a business or a problem with consumers? Such problems have emerged in an endless stream. So the logic of security supervision of local governments can only be the minimum standard, that is, the unsafe factors of food under the most reasonable intake standards will not harm the body. However, because this is a lowest standard, there is a lack of incentives for food safety supervision. As long as each department does not go wrong, government could complete the task but not trying to pursue higher safety standards. Using such method, government could reduce costs of monitoring. For special foods such as pickled cabbage's ingredients that changes over time and weather, the government can pass the barrier as long as the basic indicators are normal during the inspection process. The regulatory pressure of authorities has become small, and enterprises do not need to be punished. The regulatory authorities and enterprises have reached a win - win situation. Furthermore, if the government takes stricter supervision of enterprises, it will suppress the company's production enthusiasm, which is not conducive to local taxes. Especially when the Chaqi vegetable industry is a leading local enterprise, it can drive the village's economy and enhance farmers' income. Local protectionism directly led to corruption of the local regulatory authorities. The above factors lead to a limited rational government that automatically selects the way to minimize government management costs when dealing with food safety issues.

Insufficient deterrence of punishment is also an important factor for the failure of supervision. After the 315 Gala, Chaqi vegetable industry and relevant responsible persons were fined 5.488 million yuan. What is even more incredible is that this company resumed production in May of that year. In terms of government departments, Huarong County punished the Market Supervision Bureau, suspended the inspection of two of them, and the other two leaders were removed from department. The four leaders and the heads of the Chaqi vegetable industry were not punished by civil penalties or criminal punishment. They brought them through corruption or official enterprises, and only covered all problems on the Internet for unparalleled supervision. The government has glossed over corruption or collusion between enterprises and itself, and has only made simple public announcements on the Internet to cover up all the problems with the reason of inadequate supervision. The attitude of the employees involved in the Chaqi industry was that the media had exposed them, hurt them, and caused them to lose their jobs. This shows that the stakeholders in this food safety incident have no remorse, and they do not think that their actions are closely related to the safety of the lives of domestic consumers. The double standards of domestic

food enterprises in terms of safety standards for exported and domestic goods and the painless punishment of regulators and enterprises prove that there is a problem of insufficient deterrence of penalties in food safety incidents.

4. Countermeasures

4.1. Multi-Governance

The omnipotent government means that the government plays the role of decision makers, investors, franchiser, regulator and supervisor in the economic development. All fields are led by the government. This economic development model inevitably brings problems such as overcapacity, environmental pollution, debt crisis, and market malfunctions. Under the influence of Government omnipotence, the regulatory function of food safety in China was almost held by one administrative regulatory department for a long period of time, forming a strong and mandatory food safety authoritarianism regulatory model. [7] However, the continuous occurrence of food safety incidents in recent years is sufficient to demonstrate the shortcomings of the current regulatory model. Faced with food safety issues and the dilemma of government independent governance, diversified governance is an inevitable trend for future governance. With the involvement of multiple stakeholders in food safety governance, there will inevitably be a problem of blurred governance responsibilities and legal boundaries among stakeholders. In the traditional process of food safety governance, the government basically includes all aspects of food safety supervision, including risk assessment, testing, standard formulation, business access, and illegal investigation and punishment. But the entire process of food safety is not limited to the government as a participant. Multiple entities such as food producers, industry associations, third-party organizations, and consumers have not received proper attention. This imbalance not only leads to excessive regulatory pressure on the government, resulting in frequent errors, but also limits and ignores the role that other entities can play in the food regulatory process. For food producers, participating in food safety governance cannot motivate themselves to ensure safe production directly. For consumers, participating in the regulatory process can enhance their confidence in food safety.

4.2. Laws and Regulations

Starting from legislation is the foundation of food safety problems. Currently, the biggest issue with China's food regulatory laws and regulations is lagging behind. Legislative supervision and handling are only carried out when problems arise, or even when irreversible situations arise. Due to early introduction and narrow coverage, some food safety related regulations have become outdated and even meaningless, directly leading to some businesses producing food with hidden safety concerns. With the development of the times, there are many food safety phenomena in the new era urgently needed to introduce relevant laws and regulations to regulate. For example, food nearing its expiration date has become increasingly popular in recent years with the increasing number of young people who living alone. According to statistics, the market size of the expired food industry reached 31.8 billion yuan in 2021. [8] However, due to the fact that expired food is a new industry, there are numerous food safety regulatory issues related to it, such as the mixed sale of expired food and regular food, which confuses consumer attention. Some food producers even tampering the expiration date of expired food. In addition, online food safety is also a new phenomenon now. According to statistics, from January 2017 to June 2020, there were 49,000 new cases of online shopping contract disputes in people's courts at all levels nationwide. Food related disputes accounted for 45.65% of the total number of online shopping contract disputes, of which 30.78% were related to food safety issues. [9] Therefore, filling the gaps in food safety laws and regulations is the most important part of food safety governance, providing clear legal basis for stakeholders in the food safety process. Meanwhile, due to the relatively longer and more complex legislative process, the implementation of laws can be effectively assisted by certain administrative regulations and penalties. In this way, both regulatory authorities and consumers can follow the law when safeguarding their rights.

4.3. Traceability Mechanism

The food safety traceability system was first established and gradually improved by the European Union in 1997 to address the issue of mad cow disease, covering raw materials, processing, and terminals, as well as the entire food industry chain. [10] Food safety traceability has achieved remarkable results in ensuring food safety and has been widely applied in countries around the world. The concept of

traceability in various countries is to achieve precise positioning of suspicious substances in various stages such as production, processing and sales.^[11] This system plays an irreplaceable role in improving food quality and safety, safeguarding consumer rights, providing a basis for accountability, and reducing the cost of making mistakes for food enterprises. The food traceability system in our country originated at the beginning of this century, and many laws and regulations have been introduced successively. As of 2020, 31 provincial-level food safety traceability platforms have been launched nationwide, and more than 50 laws, regulations, and various standards related to food traceability have been released. However, there are still problems with China's food safety traceability system at present, such as incomplete laws and regulations, slow development, low coverage of food types, insufficient punishment measures, and mainly involving developed regions. More than ten government regulatory departments are involved in the food safety supervision process, including the Ministry of Agriculture, the Ministry of Commerce, the Ministry of Health, and the General Administration of Quality Supervision and Quarantine of China. The coordination between departments, the continuity of traceability information, and the overlap of functions among departments are all objective problems. In addition to the aforementioned issues, many traceability query platforms are isolated and dispersed, making traceability difficult. The experience abroad has proven the superiority of the food safety traceability mechanism, so improving the system is an essential part of food safety governance.

4.4. Non-Governmental Organization

Due to the drawbacks of the market itself, such as information inequality and market externalities, as well as the enormous financial pressure faced by the government and the possibility of official corruption, coupled with the lack of professional knowledge and poor sensitivity of consumers, non-governmental organizations have emerged in the chain of social governance. The emergence of non-governmental organizations has to some extent solved these difficulties, as they approach problems from the perspective of the public and serve as a bridge for communication between the government and the public. In addition, non-governmental organizations have a better understanding of consumer psychology and can provide appropriate guidance on consumer behavior, providing consumers with low-cost channels to protect their legitimate interests.^[12] However, non-governmental organizations also have shortcomings, such as low level of specialization, insufficient funding sources, internal corruption, and management conflicts with the government. In addition, the existence of non-governmental organizations has indirectly increased the cost of social governance, which has always been criticized. It remains to be debated whether successful cases of foreign non-governmental organizations playing an important role in the confrontation between the public and the government can be directly applied domestically. Therefore, there is still a long way to go before non-governmental organizations can play their due role in food safety supervision, which is an important aspect of people's livelihood.

4.5. Consumers

Consumers are the end of the food safety chain and the ultimate bearers of food safety problems. However, ordinary consumers are often limited by their professional knowledge or their own consumption habits, making it easy for them to fall in the trap. Therefore, it is urgent to establish a food safety system at present, such as regularly promoting it in communities, units, and schools. Government need to provide training to food industry practitioners regularly and publicize through the media and the Internet. Consumers should also learn to raise legal weapons and report expired or substandard food to relevant agencies when purchasing it. Also, to enhance sensitivity, such as checking the ingredient list and production date when purchasing food. These good lifestyle habits can help consumers avoid some potential food safety issues as much as possible.

5. Conclusions

This article attempts to explore the problems of food safety in China from the perspective of transaction costs, and try to propose some countermeasures, which based on the introduction of Hunan Chaqi vegetable industry exposed at the 315 Evening Gala in 2022. The viewpoints obtained are as follows:

The transaction costs of food safety in our country are information costs, decision-making costs, and supervision costs, respectively. The main reason for high information cost is the asymmetry caused by the long food supply chain, the trust product attributes of the food itself, and the brand celebrity effect. The reason for high decision-making costs is due to competition among enterprises, industry competition

among national brands, and the game choices of enterprises themselves. The reason for the high cost of monitoring is due to the lag of laws and regulations and the weak punishment deterrence. In order to make up for the shortcomings of existing decision-making, this article proposes improvement directions from five perspectives: multi-governance, laws and regulations, traceability mechanism, non-governmental organizations and consumers. The pickled cabbage incident is just the tip of the iceberg of China's food safety problem. To improve the food safety supervision system on the basis of effective control of transaction costs, all parties need to actively participate.

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