

Analysis of the "Lemon" Problem in China's Food Market

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Abstract: As the income of Chinese residents increases, the demand for high-quality food is also growing. However, there is a serious information asymmetry in China's food market and the resulting "lemon problem". This paper analyzes the causes of the "lemon problem" from the perspective of demand, supply and economic structure, and proposes countermeasures for "removing lemons" on this basis: first, the government should strengthen supervision, second, production operators should take the initiative to transmit information, and third, consumers should carefully screen information.

Keywords: Food Market; Lemon Problem; Lemon Removal

1. Introduction

The report of the 19th Party Congress made a major judgment that socialism with Chinese characteristics has entered a new era, pointing out that the main contradiction of China's society has been transformed into the contradiction between the people's growing need for a better life and unbalanced and insufficient development. This implies the optimization and upgrading of the consumption of contemporary Chinese residents. In the food market, this is manifested in the residents' pursuit of high-quality food. However, in the process of food marketing, there is a "lemon effect" (Zhang et al., 2010). Currently, there is a serious information asymmetry in the food market, and consumers do not have confidence in the quality of products and are only willing to buy food at medium quality prices, resulting in the food market being left with only "inferior products", which leads to the "lemon problem" (HaoYuanyuan and Jiang Hancun, 2014). According to a survey, 47% of consumers do not believe in the quality of the products claimed by producers and operators^[4] (Wang et al., 2006). As a result, it is difficult to sell really high quality food products at the expected price in the market, which ultimately makes it difficult for the whole food market to operate effectively. Therefore, it is important to analyze the causes of the food "lemon problem" and propose corresponding countermeasures on this basis. Based on the analysis of the causes of the food "lemon market", this paper proposes countermeasures for "de-lemonization".

2. Literature Review

In the article "Lemon Market" and Institutional Arrangement, Li Gongkui et al. (2004) point out that the information asymmetry between producers and consumers and the resulting adverse selection are the root causes of the "lemon problem", and they analyze the causes of the "lemon market" from the demand perspective and the supply perspective respectively. They analyzed the causes of the "lemon market" from the perspective of demand and supply respectively. In their empirical analysis, Wei Bin et al. (2019)^[1] mention that due to the empirical characteristics of food and consumers' risk-averse tendency, consumers can only obtain the quality and value expectations of food through probability weighting. Ding Yicen (2012) mentions that the failure of market reputation mechanism and government regulation mechanism is also an important reason for the "lemon problem". Regarding the hazards of the "lemon problem", Wang Yongqi (2004) says that the market shrinks or even disappears as a result of information asymmetry. He says that the market equilibrium at this time is an unstable equilibrium, an equilibrium achieved by opportunistic behavior among trading agents.

There is a lot of literature on the management of the "lemon problem". By combing through the literature, this paper finds that most of the literature mentions the improvement of relevant laws and regulations. Feng Junli (2016)^[3] mentions that the laws and regulations on food should keep pace with the times and constantly improve the relevant implementation rules and supporting

measures. There is also literature mentioning the need to give full play to the role of relevant intermediary organizations. Li Gongkui et al. (2004) mentions the need to effectively disseminate information through various intermediary organizations, and Ding Yicen (2012) also mentions the need to circumvent adverse selection through a third-party certification system, allowing a neutral third party to monitor the market of low-quality and safe food.

3. Analysis of the reasons for the formation of the "lemon problem" and the solution path

3.1 Analysis of the causes of the formation of the "lemon market" for food

3.1.1 Demand perspective: the "lemon" problem caused by adverse selection

The information asymmetry between buyers and sellers in the food market and the resulting adverse selection are the root causes of the formation of the "lemon market" for food (Li Gongkui, 2004). This paper will analyze the lemon effect in China's food market based on the old car market model mentioned in Akrov's article "Lemon Market: Quality Uncertainty and Market Mechanism"(Akrov, 2001).

The problem of adverse selection in our food market comes from the asymmetry of information between buyers and sellers about the quality and safety of food. In the food market, the production operator knows clearly the real quality of the food, while the consumer does not. In this way the production operators of food products will be substandard or provide false information. Consumers, as economic people, are not stupid, and since they do not know the true quality of food products in the market, they can only judge the average quality of food products through empirical observation, so they tend to pay medium prices based on the average quality. In this way, those high quality food products that are higher than the medium price may exit the market. The next trend is that as high quality foods exit the market, consumers will continue to lower the prices they are willing to pay and sub quality foods exit the market. The final consequence is that the market is flooded with a large number of poor quality foods, i.e., the "lemon phenomenon" of food, and in the extreme case, the food market is difficult to form (Wang Yongqi, 2004).

3.2 Supply Perspective: The Prisoner's Dilemma Brings the "Lemon" Problem

The prisoner's dilemma is also an important basis for understanding the "lemon problem" in our food market. In the food market, due to information asymmetry, there is a mutual game between producers and operators, who have two strategies to produce quality food and ordinary food.

Food has the characteristics of empirical and trust goods, coupled with the continuous progress of modern information technology, various food additives, preservatives, etc.^[2] (Wang Keshan et al., 2007), the difficulty for consumers to judge the quality of food on the market further increases, and food products of different quality levels (high quality food, ordinary food and even poor quality food) on the market appear to have similar external display characteristics and different prices. The phenomenon. Those who produce high-quality food production operators invest a lot of costs up front, often higher than the cost of producing ordinary food, so high-quality food producers do not make as much profit as those who produce ordinary food or even poor-quality food production operators. In addition, because of the large amount of resources invested, resulting in higher costs for high-quality food producers to exit the market, so they tend to turn to the production of ordinary food or even poor-quality food. In the game of food market producers and operators, this paper constructs a payoff matrix for both sides of the game^[10] (Li Gongkui et al., 2004). In this matrix, P denotes the profit gained, and its subscripts L and H denote low profit and high profit, respectively.

Table 1 Game payoff matrix between producers and operators in the food market

		B	
		Produce high quality food	Production of general food
A	Produce high quality food	(PH, PH)	(PH, PL)
	Production of general food	(PL, PH)	(PL, PL)

From the above revenue matrix, we can see that a Nash equilibrium will be reached among the producers in the food market, i.e., they all choose to produce ordinary food in order to maximize their own interests.

3.3 Economic Structure: Dualistic economic structure contributes to the "lemon" problem

At present, the duality phenomenon is still prevalent in our society, and the problem of unbalanced development between urban and rural areas still exists, with significant differences between urban and rural residents in China in terms of income levels, living conditions, and cultural habits (Li, Bin, 2010). Due to the different levels of economic development, certain foods that do not sell well in cities may sell well in rural areas, and people with lower incomes tend to buy low-quality foods. Coupled with the generally low literacy level of rural residents, their ability to identify the quality and safety of food is accordingly very limited. This provides a wide rural market for food "lemons".

4. Analysis of the path of "lemon removal" in China's food market

4.1 Government: Improve the system of food quality laws and regulations and strengthen control

The government and other relevant departments should strengthen the legislative work, formulate and improve the laws and regulations on food quality. When carrying out legislative work, the current chaos in China's food market should be fully considered, and the right remedy should be prescribed to formulate laws and regulations that really meet the needs and are highly operative. In addition to the development of laws and regulations, should also focus on the integration of relevant laws and regulations to avoid conflicts between laws, thus causing ineffective implementation. At the same time, law enforcement and effective supervision and guarantee measures should be increased so as to promote the realization of fairness and efficiency in the food market (Ma Mingyuan and Qin Xiangyang, 2009).

In addition, the government should strictly control the "lemon problem" in the food market by imposing financial or criminal penalties on food producers who violate the market order. The government can also set standards and review the trading qualifications of food producers and operators on a regular or ad hoc basis.

4.2 Production operators: proactive delivery of information

Wang, Y. Q. (2004) proposes that market equilibrium is unstable in the presence of information asymmetry. This means that the evolution of "lemon market" can be achieved through signaling mechanism. In this paper, food producers and operators have the advantage of information and should take the initiative to send information to the market. Food production operators can use modern mass media such as newspapers and TV to establish information dissemination platforms and release true and accurate information to the public in a timely manner. In addition, in order to counteract the situation of food quality uncertainty, production operators should provide guarantees of product quality in order to meet the expected quality of consumers.

4.3 Consumers: carefully screen the information

To avoid the harm caused by information asymmetry, consumers should take the initiative to discover or induce the other party to expose information. Before making a purchase decision, consumers should take the initiative to search for information about food products and "compare" them. In today's era of big data, consumers should pay attention to information mining, carefully screening and discriminating information, and pursuing the goal of "satisfaction" under the condition of limited rationality.

References

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