Countermeasure Analysis of the Predicament of Agricultural Product Sales on E-commerce Platform—A Case Study of Grocery

Chuxuan Xue

Yantai Research Institute, China Agricultural University, Yantai 264670, Shandong

xueecx@cau.edu.cn

Abstract. In recent years, e-commerce platforms featuring agricultural and sideline products have sprung up in the public, but the products they sell are of varying quality, making it difficult to achieve overall profitability. This paper presents a statistical analysis of Grocery community group-buying platform, and reflects on the community group-buying platform for low-quality products formed under the influence of the 'lemon market' by means of questionnaire survey method, interview method, and the theory of 'lemon market' of George Akerlof. It points out the intrinsic causes of the 'lemon phenomenon' of Grocery and the dilemma of the quality of online shopping for the general public, and puts forward the methods to make Grocery become a high-quality e-commerce platform for community group purchases, to promote the sale of agricultural products and fresh products on the platform of Grocery and to break the geographic restriction to bring more high-quality products into the public's view, so as to fit in with the theme of revitalisation of the countryside, promoting the development of rural e-commerce and to make contribution to the comprehensive revitalisation of the countryside in China.

Keywords: Grocery; produce marketing; rural revitalisation; 'lemon markets'; adverse selection.

1. Introduction

In the face of the ever-changing new situation, the twentieth Party Congress stressed the need to implement the new development concept, deeply implement the strategy of revitalizing the countryside, and resolve the contradictions and problems that constrain high-quality development. With innovation as the driving force, the development of rural e-commerce is vigorously boosting the sale of agricultural products, effectively attracting talents with ideas and skills to devote themselves to the construction of the countryside, thus helping to prioritize the development of agriculture and rural areas, as well as the construction of a digital China and a strong agricultural country.[1] Rural e-commerce carries the important responsibility of promoting rural revitalization, and the development of rural e-commerce is regarded as an effective means to increase farmers' income.[2] Data show that in the first three quarters of 2023, the national community online retail sales reached 1.7 trillion yuan, an increase of 12.2 percent. At a time when Alibaba and Jingdong are guiding consumption upgrades and ignoring low-consumption groups, Pinduoduo's Grocery is rapidly taking up market share in third- and fourth-tier cities and rural areas of towns and cities by its unique model of low prices for commodities and discounts for single-order purchases.[3] However, within Pinduoduo, relevant people expressed their dissatisfaction with its development, consuming such a huge amount of resources, and ultimately facing a low unit price and low gross profit business. From the creation of today, Grocery has not yet achieved overall profitability. At the same time, the quality of agricultural products of Grocery is a difficult problem for the market robustness, according to the survey, many consumers said that Grocery product prices a big different from the market price, and the quality of Grocery products has not been guaranteed enough, even if the price is low, but also only dare to hold the mentality of trying to buy, is not a stable community group-buying platform.

In 1970, American economist George A. Akerlof proposed the theory of 'the lemons market' (the lemons market) in his economic academic paper 'The lemons market: quality uncertainty and the market mechanism'[4] and analyzed the market in 'The lemons market' (the lemons market) theory, analyzed the market in the information asymmetry, the market quality products are often expelled by
the inferior products phenomenon and ultimately led to the failure of the market mechanism. Based on the 'lemon market' theory, Minelli and Polemarchakis et al. partition the private information of the agents entering the market, classify the products by describing the different sets, to better distinguish the good from the bad, and analyze the phenomenon of 'the bad driving out the good' from the point of view of the physical products.\(^5\) Subsequently, some scholars proposed that partitioning is not only for products, but also for agents, and summarised the theory of the 'lemon market' as an exchange economy in which agents have different information about the goods brought to the market by other agents, i.e. an exchange economy under asymmetric information.\(^6\) With the gradual improvement and development of the theory of the 'lemon market', the analysis of financial and investment industries from the perspective of asymmetric information has gradually materialized. Some scholars have conducted in-depth analyses of the lemon market and financial supply-side reforms to break the rigidity of the interbank market through the assumptions of the model;\(^7\) some scholars have also constructed a regional collaborative platform for risk governance from the perspective of asymmetric information to improve the prevention and disposal capacity of regional financial risks.\(^8\) The 'lemon market' theory is not only applicable to traditional sectors but is also widely used in food, and agricultural products, as well as tourism, e-commerce, and other areas of market governance.

Zhu and other scholars have pointed out the 'lemon market' dilemma of network catering and proposed that the food safety guarantee mechanism needs to be transformed into collaborative governance led by the concept of social co-governance to 'government-led, social collaboration and public participation'.\(^9\) Li Ming and other scholars studied the phenomenon of 'lemon market' of green agricultural products from the black soil, and proposed the development countermeasures of lemon market of green agricultural products from the perspective of customer value, product technical standards, 'Internet + agricultural products', promotion mode and other marketing strategies of cold black soil.\(^10\) Xia Hongyu and other scholars in the same field use information asymmetry theory to study the causes and effects of the 'lemon market' for agricultural products from both supply and demand perspectives.\(^11\) Scholars such as Donald W. Light have analysed the phenomenon of 'lemon markets' in the context of the pharmaceutical industry and further analysed how 'lemon markets' thrive on information asymmetry, secrecy of information and power of agents.\(^12\) There are also scholars on cross-border e-commerce 'lemon market' formation of the possibility and the Matthew effect on the inhibition of the possibility of the formation of the lemon market to analyze and explore, and further put forward strategies conducive to the development of cross-border e-commerce in China.\(^13\)

Several scholars have explored the factors and corrective measures that have emerged in the lemon market and the operational risks of high-quality vendors, and have pointed out that agents can increase the willingness of audiences to buy by improving the quality of the product and the credibility of the seller that they can perceive, i.e., by adding costs through additional signals.\(^14\) However, there are no analyses and suggestions on the causes of poor-quality products on community group-buying platforms from the perspective of asymmetric information. Therefore, based on the theory of the 'lemon market', this study takes Grocery as an example to analyze the real-life manifestations and causes of the 'lemon problem' in the community group-buying industry under the situation of asymmetric information and further discusses the governance path of China's agricultural products community group-buying platforms, to Help the e-commerce network market to form a benign competitive order, and build a solid foundation for comprehensively promoting the sale of agricultural products and rural revitalization in China.

2. Overview of agricultural sales

Equipped with a vast natural resource base, China has great potential for developing a digital economy for agricultural products. In recent years, China has attached great importance to the development of the digital economy, continuously expanding the scale of the digital economy, enhancing the strength of the digital economy, promoting the development of the digital economy and innovation, and providing strong strategic support for economic development. The State Council
has issued the '14th Five-Year Plan' for the development of the digital economy, as well as the 'overall layout of the construction of digital China plan', issued a series of important decisions to promote the development of China's digital economy, which creates a new type of digital life of wisdom and sharing is closely related to the issue of community group purchasing mentioned in this article. With the integration and development of digital technology and traditional industries, digital technology has accelerated agricultural scientific and technological innovation, and the rise of new forms of agricultural services and trade such as agricultural and sideline products e-commerce, cross-border e-commerce, digital logistics, and so on, has been able to broaden the scope of trade in agricultural products and the customer base, and with the continuous penetration of the digital economy into the field of agriculture and rural areas, regions are actively seizing the opportunities for the development of the digital economy, and are empowering the modernization of agriculture with digital transformation. Empowering China's agricultural sector through digital technology and promoting the high-quality development of agricultural trade. Vigorously developing rural e-commerce and comprehensively improving the development of rural e-commerce in China by carrying out e-commerce into the countryside, expanding the coverage of rural e-commerce, improving rural logistics services, carrying out digital pilots and other initiatives are of great significance in accelerating the construction of a strong country for the modernization of China's agriculture and the revitalization of the countryside. E-commerce platform sales is a new way of selling agricultural products in recent years, which has more significant characteristics of the times than the traditional methods of selling agricultural products.

2.1 Traditional marketing channels

Traditional marketing of agricultural products is divided into many types, such as direct marketing, wholesale market sales in farmers' markets, and retail sales in supermarkets and shopping centers. Under traditional marketing, the producer's production behavior occurs before the consumer's purchase. Direct marketing is the establishment of direct contact with consumers, setting up direct sales outlets for agricultural products near farms or conducting direct farm supply businesses; it can yield higher profits but requires more human and material resources for marketing and distribution. It is also common for farmers to transport their produce to farmers' markets or wholesale markets and trade with buyers. This method is usually suitable for selling in large quantities and can recover costs quickly. Farmers supplying agricultural products directly to supermarkets or shopping malls is also a good choice, and consumers can make purchases directly offline. It can yield higher profits but requires the establishment of a stable supply relationship. The traditional way of selling agricultural products offline selection and communication can indeed make consumption more transparent, but in today's fast-paced era, it is not well adapted to the needs of consumer groups for convenience and timeliness.

2.2 E-commerce sales channels

With the rapid development of the Internet and the popularity of mobile intelligent terminal equipment, the development of China's agricultural products has ushered in a new opportunity, and more and more agricultural products have begun to be sold on e-commerce platforms. Compared with the traditional agricultural products sales model that needs to go through multiple intermediate links, the e-commerce platform sales can turn the single agricultural products sales channel into a network-like one and derive a diversified marketing model on this basis. It can not only break the geographical restrictions and sell agricultural products from remote areas to all parts of the network, but also eliminate intermediate links and reduce the costs of logistics and stalls, thus reducing the cost of sales, improving the profit margins of farmers and increasing the market competitiveness of agricultural products.

This paper takes Grocery as the research object to start the research. Grocery is a community group-buying platform under Pinduoduo, which started as a retail platform for agricultural products, ploughed into agriculture, created a new mode of retailing agricultural products featuring Pinduoduo,
and gradually developed into a comprehensive e-commerce platform of the whole category with distinctive characteristics of agricultural and sideline products, and is also the world's largest online retail platform for agricultural and sideline products. [19] Grocery is an affordable, safe and convenient online group-buying service launched by Pinduoduo in response to the changes in consumers' family lifestyles. Grocery with the help of Jinduoduo APP or WeChat 'Grocery' applet using 'online order + offline self-pickup' semi-pre-purchase mode of operation, the user orders to buy goods, can be picked up the next day to its selected pick-up point, this kind of This efficient mode of 'pre-sale + centralised purchasing' helps the platform to reduce the pressure of warehouse storage and capital turnover, and also avoids the waste of excessive quality change of commodities, and the production management of the supply chain is also changed from a push mode to a pull mode. The Grocery platform tries to optimise the management of suppliers as well as self-pick-up points and applets to save flow costs, streamline the supply chain and shorten the transaction time, so that consumers can buy products at lower prices.

Even though the construction of the Grocery platform is gradually completed, there are still many manufacturers of good and bad quality on the platform, and the degree of product homogenization is aggravated. To ensure the competitive position of their products, manufacturers start from the price aspect to launch low-cost competition, and fall into the predicament of cost compensation, which gives rise to the phenomenon of the 'lemon market'. The asymmetry of information will eventually trigger a continuous decline in the quality of the products of the entire e-commerce network market, resulting in the lack of market credit and ultimately undermining the market fair competition mechanism.

3. the 'lemon market' theory and the problem of poor quality products in Grocery

3.1 The construction of the 'lemon market' model in the competition between the manufacturers of Grocery

Overview of the model

Assume that there are multiple potential sellers and buyers in the e-commerce network market of DuoDuoBuy, and assume that both buyers and sellers are risk-neutral. Denote the quality of the product sold by the vendor; the seller knows the quality of his product; the buyer does not know it, but is aware of its distribution function.

\[ v(\theta) \]: denotes the buyer's evaluation of the product whose quality is \( \theta \);
\[ u(\theta) \]: denotes the seller's evaluation of the product whose quality is \( \theta \);
\[ v(\theta) \geq u(\theta) \] (otherwise there can be no transaction), where \( \frac{\partial v(\theta)}{\partial \theta} > 0 \), \( \frac{\partial u(\theta)}{\partial \theta} > 0 \).

The buyer makes the offer is \( p \) and the seller decides whether to accept or not; if not, the effect of both parties is zero; if accepted, the utility of the consumer and the merchant are, respectively:

\[ \pi_B = v(\theta) - p \]
\[ \pi_S = p - u(\theta) \]

- The buyer and seller have the same preferences and there are only two types of sellers

Assume that the buyer and seller's evaluations of the product are equal to the quality of the product, i.e. \( v(\theta) = u(\theta) = \theta \).

Assuming that there are only two possible types of products sold by the Dodo Buyers seller: low quality \( \bar{\theta} \) or high quality \( \tilde{\theta} \), with a probability distribution of 50% each; it may be useful to set \( p(\bar{\theta}) = 80,000 \) yuan and \( p(\tilde{\theta}) = 40,000 \) yuan, so that there is \( E(p(\theta)) = 60,000 \) yuan.
The buyer is willing to pay \( P = 60,000 \text{ yuan} \) based on the expected bid; at this point, only the seller of the low-quality product is willing to sell, and the seller of the high-quality product will exit the market.

The only equilibrium price is \( P = 40,000 \text{ yuan} \) when the buyer knows that the seller willing to sell must be the seller of the low-quality product. This gives the basic meaning of adverse selection: low-quality products drive high-quality products out of the market, leading to inefficient or even ineffective market transactions.

- buyers and sellers have the same preferences, and the type of seller presents a continuous distribution (uniform distribution) Model validation.

Assume that product quality obeys a uniform distribution on the interval \([\underline{\theta} = 4, \overline{\theta} = 8]\).

The relationship between the price that buyers are willing to pay and the average quality of the product in the market is represented by a demand curve with the equation:

\[
p = E(\theta)
\]

The supply curve is used to represent the relationship between the average quality of the product on the market and the price, and the supply curve is expressed as follows:

\[
E(\theta) = 1 + \frac{P}{2}, \quad 4 \leq \theta \leq 8
\]

The supply and demand relationship is analyzed as shown in Figure 1. The only final equilibrium price is \( P = 40,000 \text{ yuan} \); since \( \theta \) is continuously distributed, the probability at \( p(\theta) = 40,000 \text{ yuan} \) is zero and the entire market disappears.

[Fig.1 Network product market: Completely failed]

From this model, it can be concluded that if the Grocery platform sells low-quality and low-priced goods for a long period, high-quality products will be squeezed out of the market over time, making the Grocery platform full of low-priced and low-quality products, which is not conducive to the healthy development of the platform and the consumers' purchasing behaviors.

### 3.2 Research Methods

According to the content of the study, the questionnaire survey method was chosen to be combined with the interview method to carry out the study, and the questionnaire survey content was divided into three parts: the first part is the investigation of the consumer's background, which is based on the division of basic information such as gender, age, income, and so on. The second part is a survey on consumers' use, types of products purchased, evaluation and improvement opinions on the e-commerce platform of Grocery, through distinguishing and comparing the reasons and habits of consumers' use of the Grocery platform and summarising them, to find out where the problems of Grocery lie. The last part is to recruit interviewees, ask the respondents whether they are willing to accept further interviews, and leave their contact information if they are interested.

The questionnaire was first distributed in Shandong for testing, and then the corresponding questions were modified according to the respondents' feedback to form the final questionnaire.
Considering that Pinduoduo has a wide range of users, in order to obtain user data more comprehensively, the network survey method was adopted, and the questionnaire was distributed through the Questionnaire Star data platform.

After a period of questionnaire distribution survey, a total of 483 questionnaires were returned before the deadline, of which 474 were valid and met the requirements of this thesis research. The gender distribution of the questionnaire respondents is relatively even, as shown in Figure 2, the proportion of men and women is about 47%, 53%; age distribution between adolescents and middle-aged to old age, with '30-39 years old' people in the majority, accounting for 40% of the total proportion of 40%, and then '20-29 years old', the total proportion of 40%. The age distribution is between adolescents and middle-aged and older persons, with the majority of them being '30-39 years old', accounting for 40 per cent of the total, followed by '20-29 years old', with a total share of more than 20 per cent, and middle-aged and older persons aged 40 or over, accounting for less than 20 per cent.

In order to make the findings more reflective of whether consumers have any special preference for the products they acquire, chi-square goodness-of-fit tests were conducted with 1, 2, 3, and 4 representing the four categories of vegetables, fruits, fresh produce, and daily necessities, respectively. This resulted in the original and alternative hypotheses, H0: Consumers have no significant preference for the type of products they acquire; H1: Consumers have a significant preference for the type of products they acquire.

<table>
<thead>
<tr>
<th>Reason for purchase</th>
<th>Number of measured cases</th>
<th>Number of expected cases</th>
<th>Residuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>104</td>
<td>118.5</td>
<td>-14.5</td>
</tr>
<tr>
<td>2</td>
<td>108</td>
<td>118.5</td>
<td>-10.5</td>
</tr>
<tr>
<td>3</td>
<td>55</td>
<td>118.5</td>
<td>-63.5</td>
</tr>
<tr>
<td>4</td>
<td>207</td>
<td>118.5</td>
<td>88.5</td>
</tr>
<tr>
<td>Total</td>
<td>474</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table2 Test statistics

<table>
<thead>
<tr>
<th>Reason for acquisition</th>
<th>Chi-Square</th>
<th>Degree of freedom</th>
<th>Asymptotic significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>102.827a</td>
<td>3</td>
<td>.000</td>
</tr>
</tbody>
</table>

According to Table 1 we can derive the residuals of the four reasons for purchasing and the expected number of cases, while the chi-square test statistics in Table 2 gives a p-value of less than 0.05 at the 95% level of significance, so the original hypothesis is rejected and there is a reason to
prove that there is a significant preference of consumers for the type of products they purchase. From the sample we can infer that overall, the vast majority of Grocery consumers prefer to purchase products with a longer time frame. Consumers make purchases of daily necessities on Grocery, but purchases of products with strong product quality requirements, such as vegetables and fruits, are lower compared to daily necessities, and purchases of fresh products are even lower. The emergence of this phenomenon suggests that Grocery's consumers have low expectations for agricultural and seafood products, and the platform's purchasing structure will become homogeneous over time.

Table 3: Linear fit test

<table>
<thead>
<tr>
<th>Model R</th>
<th>R-square</th>
<th>Adjusted R-square</th>
<th>Error in standard estimation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.947a</td>
<td>.896</td>
<td>.896</td>
</tr>
</tbody>
</table>

a. Predictor variable: (constant), product type 1
b. Dependent variable: evaluation

Based on the data collected, the regression test between the type of consumer purchases and the level of consumer satisfaction with consumption was conducted, and the data obtained showed that 89.6% of the variance in the level of consumer satisfaction can be interpreted by the type of consumer purchases. That is, the more consumers buy daily necessities the higher the level of satisfaction with consumption, that is, more willing to consume. According to the later interviews, more buy food for vegetables fruits and even fresh food such as high quality requirements of product quality can not be controlled, not as good as going offline to buy their own. Nearly 70% of consumers said that if they had the opportunity to shop offline, they would not buy from the Grocery platform. Moreover, most of the merchants in Grocery come from some less famous or unknown brands, and the quality of individual products still needs to be guaranteed. According to the survey, there is no lack of high-quality source merchants, but they do not have an advantage over cheaper and low-quality merchants because consumers do not have much hope for the quality of Grocery's food, and they are unable to compare the quality of the products online, so they usually directly place orders for cheaper and cheaper products. Here we would like to introduce the concept of the 'lemon market' to analyze the harm and improvement measures of the phenomenon of Grocery in the community group-buying market.

3.3 The formation of the 'lemon market' in the competition of the manufacturers of Grocery

Information asymmetry of various market players

Information asymmetry refers to the market economy, all kinds of people on the relevant information is different, grasp the information is more insufficient personnel are often in a disadvantageous position. The demand body in the market of the Grocery platform is the online consumer, and the supply body is the Grocery platform, the seller of the platform, the product manufacturer, etc., and there are generally different degrees of information asymmetry between the various subjects.[20] Grocery platform sellers as the network market supply link directly to consumers to provide products and services in the focus of the main body, compared with consumers have a stronger ability to capture and master information. Therefore, in the network market, the information asymmetry phenomenon is ultimately highlighted between the platform sellers and consumers. This information asymmetry phenomenon can easily lead to 'adverse selection' on the Grocery platform, which destroys the balance of market information and aggravates the business risk of high-quality vendors, so the quality management of the vendors on the Grocery platform should be the key to the platform's security governance. [21]

There are limitations in information access for both supply and demand sides

In the economic activities of the Grocery platform, the information obtained by both sides of the transaction is usually asymmetric; consumers do not have an overall grasp of the quality of the products, and the platform sellers do not have a grasp of the purchasing power of the consumers. Although consumers are more inclined to choose cost-effective products, the ability of consumers to
obtain product information is limited, and for the vast majority of consumers, information acquisition mostly comes from sellers' self-referrals on the e-commerce platform, netizens' evaluations and so on. At the same time, the Grocery platform does not have real-time pictures or information about the products, so consumers are at a disadvantage in terms of information acquisition. Compared with consumers, sellers know more about the source and quality of their products, but it is also difficult to grasp information about consumer demand. The information barrier between supply and demand makes it possible to form a 'lemon market' in the Grocery e-commerce market.

Increased homogeneity of e-commerce competition

In recent years, Grocery platform manufacturers' homogenization competition intensified. If the current investment made by vendors to improve quality and safety is greater than the future revenue generated after the investment, then these vendors will suspend or give up the improvement of quality assurance. In addition, the negligent monitoring of vendors' sales images in Grocery has led to the phenomenon of vendors sharing images, which misleads consumers into buying products. This 'free-riding behavior shrinks the opportunity revenue of the Grocery platform, and in the long run, the mismatch between revenue and risk will accelerate the crowding out of high-quality vendors, making low-quality vendors Grocery platform, which will lead to the phenomenon of the 'lemon market'.

4. the 'lemon market' theory and the governance path of poor-quality products in Grocery

Pinduoduo has proposed the goal of transforming agriculture and reshaping the supply chain through its community group-buying business, but the actual progress has not been smooth. Commercial companies are facing low efficiency and long lead times in transforming agricultural markets, and they are unable to change the entire industry with their efforts. The 'lemon market' problem remains one of the main obstacles to realizing the potential of Grocery. Through online sales, Grocery does promote the sale of agricultural products, but the 'lemon market' problem of Grocery has led to a distrust of the quality of online agricultural products and fresh produce. However, the 'lemon market' problem of Grocery has led to a distrust of online produce and fresh food quality. Based on the theoretical model and empirical analyses above, the following strategies are proposed:

4.1 Development of the main bodies involved in buying food in DuoDuo

The platform realizes the function of the physical picture

The inferior products of Grocery mainly exist in the category of fresh fruits, so we give consumers some more intuitive display. Because the fresh fruit series of products have special characteristics, and the picture itself does not have real-time, Grocery can consider adding a video or live broadcast function in the details page, so as to present the reality of fresh fruits and other products intuitively to consumers. The platform has achieved the function of physical pictures, so that buyers can better grasp the commodity information to make consumer judgement, and reduce the occurrence of information asymmetry as much as possible.

Improve the operation level and service level of the head of the group

The community head is an important part of the docking between Grocery and consumers. The head's work includes product storage, customer pickup, and management of the community, as well as the requirements for the equipment and facilities of the pickup point, and infrastructure such as categorized shelves and refrigerated freezers are a must. The ability of the head of the work and the work environment determines the quality of the goods delivered to the customer, taking into account the commodities not only include daily necessities, but also fresh and cooked food,[23] The head should apply for a health certificate required for the food storage industry, the strict implementation of the Grocery's quality control, and do a good job of Grocery's products, temporary storage function, to ensure that the Grocery platform The 'last kilometer' of the platform is safe and reliable. [24]
4.2 Development Suggestions of DuoDuoBuyGrocery Platform

Establish a strict commodity access mechanism

Grocery should establish a commodity access inspection department, establish a sound and strict commodity access mechanism, strengthen the audit of the entry of product manufacturers, and raise the entry threshold. The qualification, reputation and service quality of product manufacturers should be comprehensively audited to ensure that they meet the standards and requirements of the platform. At the same time, Grocery can introduce a security deposit system, requiring manufacturers to pay a certain amount of deposit to ensure that they fulfil their commitments to consumers and service quality. In the event of substandard quality and poor performance such as inferior or substandard products or failure of manufacturers to fulfil their commitments, the corresponding security deposit can be deducted to protect the rights and interests of consumers. Grocery can also categorize and manage manufacturers based on factors such as the type of goods, price range, and brand awareness. For different types of manufacturers, different access standards and regulatory measures can be formulated to ensure the stability of the market order and the rights and interests of consumers.

Strengthen the monitoring of commodity quality

The Grocery Platform should strengthen the monitoring of commodity quality. Merchants stationed on the platform, are required to submit relevant quality inspection and qualification reports, and the content of the reports should cover all important aspects of the commodities to ensure that the quality of the commodities is in line with national or industry standards. The quality of the products should be grasped at the source, and the products should be tested and audited in the relevant production chain to ensure that the products are of reliable quality. At the same time, the platform also needs to supervise the business behavior of merchants, deal with counterfeit and shoddy goods found promptly, and hold the relevant responsible persons accountable. The platform can also introduce third-party quality testing organizations to carry out a series of measures such as qualification audits, product sampling, and daily supervision of the merchants stationed on the platform to ensure that the quality of the goods is within a reasonable range and to reduce the chances of unqualified products being sold.

Grocery can improve the data analysis system, from the user feedback, product feedback and other perspectives to understand, grasp the user demand and product situation, timely correction and improvement of the problem, improve consumer satisfaction and loyalty to form a closed loop of consumption. For example, a perfect after-sales service system can be established to provide 24-hour online customer service, telephone hotlines and other services to ensure that consumers can obtain timely solutions. Pinduoduo can also establish a reporting mechanism to encourage consumers to report goods that do not meet the quality requirements, and keep the confidentiality of the whistleblower to ensure that the rights and interests of the whistleblower are protected.

Establish a consumer rights and interests protection mechanism

From the practical level, the platform must first understand the real needs of users or customers, and then guide the resources of the resident merchants to meet these needs. [25] Through the establishment of a sound consumer evaluation system, consumers are encouraged to evaluate and give feedback on the products they buy, and more food can be bought to better understand the quality of the product and deal with the poor quality products of bad merchants in a timely manner. [26] Establish a consumer rights and interests protection mechanism to provide support for consumer complaints and rights protection, and provide consumers with better after-sales service and ways to protect their rights. If there are quality problems with the goods purchased by consumers, there should be a convenient return and exchange process, as well as a professional customer service team to help consumers solve quality problems. Consumers should be supported to defend their rights, and if necessary, their rights and interests can be safeguarded through legal channels. [27]
5. Conclusion

In the context of the 20th Party Congress and rural revitalization, the construction and development of a community group purchase market for agricultural products is of great strategic significance. In this paper, through the questionnaire survey method and interview method, we have investigated consumers, analyzed and summarized the shortcomings of the Grocery platform, and used the 'lemon market' model to analyze and explain the information asymmetry and product homogenization of low-quality agricultural products in the agricultural products community group-buying market.

The 'lemon market' theory provides important theoretical guidance for the governance of poor-quality products on the Grocery platform. Through the supervision of each subject, strengthening the merchants' entry audit, improving the consumer evaluation system, and other means, Grocery can effectively inhibit the phenomenon of 'lemon market' and provide more high-quality products. At this stage, the management of the quality of products requires the coordinated participation of e-commerce platforms, merchants, and consumers. Ensuring product quality and safety, improving supply chain efficiency, and providing good customer service will enable Grocery to play a better role in helping farmers, delivering high-quality agricultural products from all over the country to consumers conveniently and reliably, and promoting the development of rural e-commerce, contributing to the comprehensive revitalization of China's rural areas.

However, this paper only focuses on Beijing, Tianjin, Shandong, and other regions for investigation and research and its representativeness and comprehensiveness have yet to be examined in depth. Now the development of China's community group-buying e-commerce platform is still facing some challenges, the future will also carry out more in-depth investigation and research. I hope that more agricultural products can enter the public's field of vision through the community group-buying platform to break the geographical restrictions to drive the development of the local economy to play a greater role.

References


[14] Yao Tanyue, Mo Li, . How to stand out in the “lemon market”? application of signaling theory in live streaming commerce [J]. SHS Web of Conferences, 2022, 140


[27] Li M Y. Research on emergency management mechanism of food safety incident [D]. Nanjing University of Aeronautics and Astronautics, 2015.