Research on the realization path of ensuring the quality and safety of cold chain agricultural products under the background of "Internet +"

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Abstract: Under the background of "Internet plus", the transformation of agricultural products industrial chain is centered on "customer deep experience". Based on the principle of consumer demand behavior analysis, we combine the theoretical research with the empirical analysis by using questionnaire and qualitative analysis. Based on the reconstruction of industrial chain, the influencing factors of quality and safety of fresh agricultural products were studied. under the protection of agricultural products quality and safety of the industry chain, control measures and implementation paths are proposed, which helps to improve the quality and safety of the Internet plus fresh agricultural products and the improvement of the quality and safety control system of the network agricultural products.

1. Introduction

In the development and construction of our country, agriculture, as the foundation of national economy, is developing towards modernization, and under the continuous development of emerging technology and Internet technology, it promotes the modernization of agriculture. The quantity demand of agricultural products in society is gradually transformed into quality demand and diversified demand [1]. Studying the mode transformation of agricultural product industry chain under the "Internet +" will help to dig out the quality and safety problems of agricultural products in the new era, rebuild the quality and safety control system, carry out comprehensive quality and safety control on all nodes of the industry chain, take consumers as the center, guarantee the improvement of quality and safety of agricultural products, meet people's demand for high-quality agricultural products, and implement the human-oriented policy. This view of scientific development is of great significance. Based on the reconstruction of the industrial chain and the analysis of consumers' demand behavior based on quality and safety, this paper analyzes consumers' cognition and consumption behavior on the marketing mode of new agricultural products (the direct connection of supply and demand), discusses how to promote the sustainable development of the agricultural product industrial chain under the Internet + and how to realize the quality and safety of agricultural products in the "consumer center" of China in the new era. Current path.

2. Survey of consumer demand behavior in the reconstruction of agricultural product industry chain under the Internet +

In the analysis of consumers' demand behavior based on quality and safety, this paper investigates consumers' cognition and consumption behavior on the marketing mode of new agricultural products (direct connection between supply and demand). In this research 210 electronic questionnaires were issued and 198 effective questionnaires were recovered, the recovery rate was 94.3%, 198 effective questionnaires, and the effective rate was 100%. The respondents were people in Guangdong Province, and the proportion of men and women in the survey population was basically the same, ensuring the rationality and representativeness of the analysis results [2-4].

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2.1 Survey of consumers' basic needs for fresh agricultural products on the Internet

2.1.1 Basic cognition of consumers to purchase fresh agricultural products on the Internet
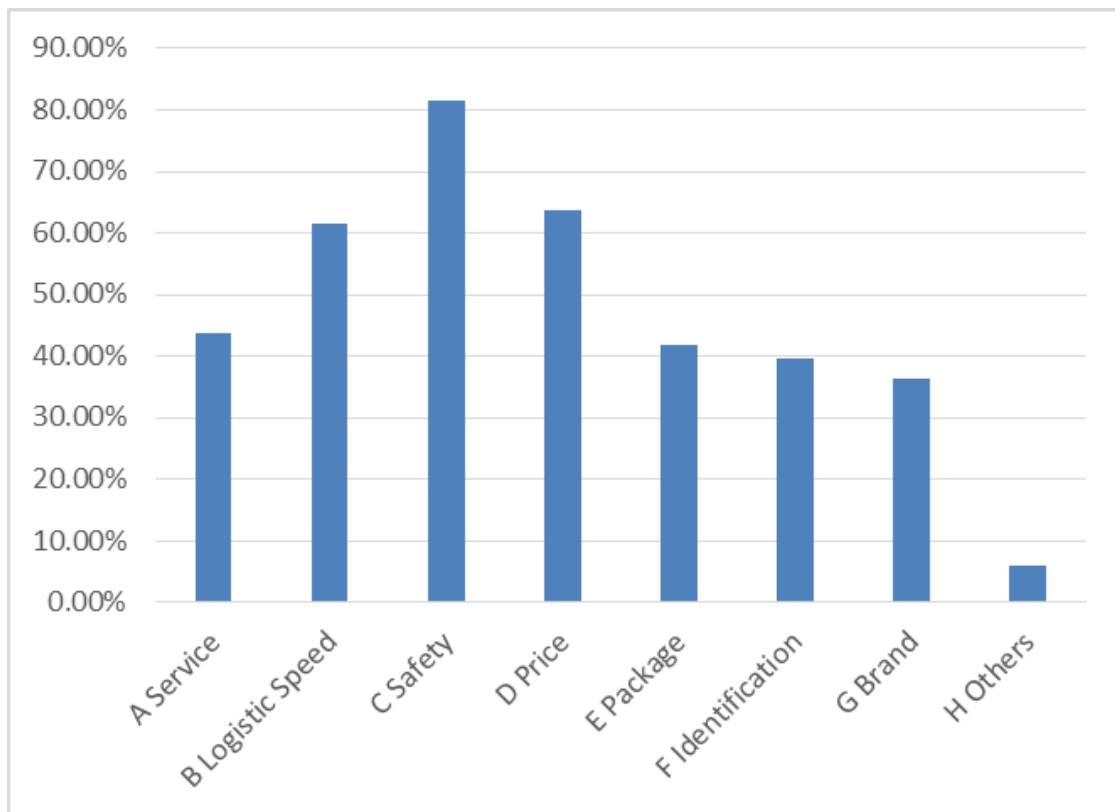

Fig. 1 consumer's concerns about fresh agricultural products on the Internet

From the questionnaire, 72.19% said they would not buy fresh agricultural products online, and 23.18% would buy agricultural products online 1-5 times a month; consumers generally have low price, complete agricultural products, not timely distribution, and uneven quality of fresh agricultural products.

2.1.2 Consumers' concerns about fresh agricultural products on the Internet

It can be seen from Figure 1 that among the concerns about fresh agricultural products on the Internet, from the perspective of the proportion of concerns, they are ranked in order from large to small. The safety of agricultural products accounts for 81.33%, while the logistics speed accounts for 61.33%, the price accounts for 64%, and the service accounts for 43.33%.

2.2 Investigation on consumers' demand for quality and safety of Internet agricultural products

2.2.1 The quality of agricultural products of Internet fresh agricultural products suppliers

(1) Freshness of agricultural products purchased on the agricultural products network platform

According to the survey, about 52% of consumers think that the freshness of agricultural products purchased on the online sales platform of agricultural products is not as good as that purchased in supermarkets or farmers' markets; about 48% of consumers think that the agricultural products purchased on the online sales platform of agricultural products are more fresh than those purchased in supermarkets or farmers' markets.

(2) Whether the agricultural products purchased through the Internet have complete packaging and refrigeration measures

95.34% of the agricultural products purchased on the online sales platform of agricultural products are complete and undamaged; 91.73% of the products received by consumers when purchasing fresh agricultural products online are refrigerated, mostly ice or refrigerant.

(3) Whether the agricultural products purchased on the agricultural products network platform have relevant marks

66.67% of the agricultural products purchased on the agricultural products network platform have the mark of "three products and one standard" (pollution-free agricultural products, green food, organic agricultural products and agricultural products geographical indications collectively referred to as "three products and one standard"); 69.05% of the agricultural products purchased on the agricultural products network platform have the detailed content of product name, origin, growth cycle, listing date,.

2.2.2 Consumer's response to the quality problems of agricultural products on the Internet

It can be seen from the data in Figure 2 that when quality and safety problems occur in fresh agricultural products purchased online, 86.09% of them directly apply for return, 47.09% of them complain to customer service, 33.11% of them choose other sales platforms, 29.8% of them call consumer complaints and other reporting hotlines, and only a few consumers will choose to resort to legal means and help relevant government agencies.

2.2.3 Investigation on the necessity of Internet traceability system for quality and safety of fresh agricultural products

According to the data, 55% of consumers think it is necessary to set up a quality and safety traceability system for agricultural products purchased on the online platform of agricultural products, 37% of consumers do not know or think that the traceability system of agricultural products is dispensable, and only a few consumers think it is unnecessary.

2.3 consumer demand survey on all links of the cold chain of Internet agricultural products

2.3.1 Investigation on consumers' demand for Internet agricultural products logistics and distribution

A Order one day and arrive on the same day
B Order one day and arrive on next day
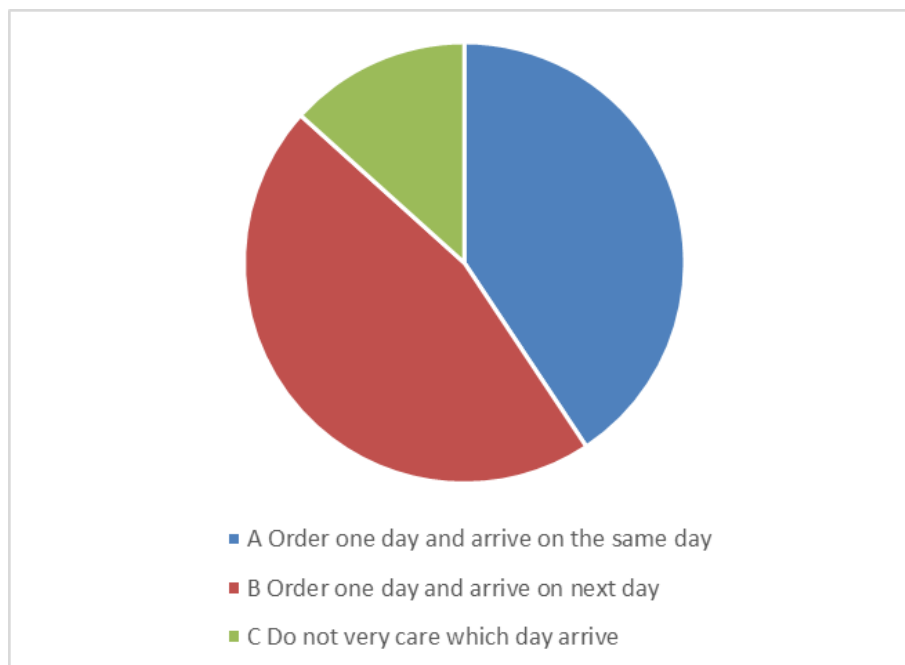C Do not very care which day arrive

Fig.2 consumer demand for logistics and distribution of agricultural products on the Internet

Figure 2 shows that about 40.67% of consumers want to arrive on the day of placing an order, 46% of consumers want to arrive on the day of placing an order, and only 13.33% of consumers do not have high time requirements.

2.3.2 Demand survey of fresh agricultural products supply on the Internet

85.3% of the consumers think that the online fresh agricultural products suppliers need to have

the source information, security and sales license of fresh agricultural products; 77% of the consumers think that a strong logistics system is necessary for the online fresh agricultural products suppliers to ensure timely delivery; 68% of the consumers focus on online and offline integration, and the prices and information are synchronized in time; 62.6% of the consumers think that the online fresh agricultural products are connected. The sales platform needs to obtain an operation license.

2.3.3 Investigation on consumers' demand for Internet fresh agricultural products sales
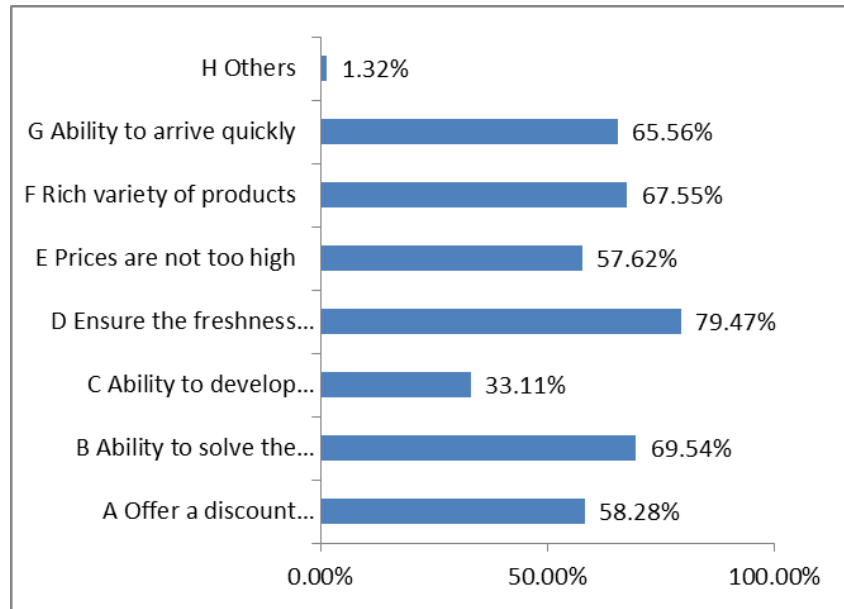

Fig. 3 consumer demand for fresh agricultural products sold on the Internet

As shown in Figure 4, 80% of consumers hope that the fresh agricultural products sales platform can ensure the freshness of fresh agricultural products; about 69% of consumers hope that the fresh agricultural products sales platform can solve the relevant after-sales problems; 67% of consumers hope that the fresh agricultural products sales platform can complete the product types; 65% of consumers hope that the fresh agricultural products sales platform can improve the logistics system quickly. Fast delivery to every household; 58% of consumers think that they hope the fresh platform can give discounts according to their personal consumption records.

2.3.4 Perplexing factors for consumers to buy fresh agricultural products online

82.12% of consumers are worried about the inconsistency between the description of fresh agricultural products and the online description, 54.83% of consumers are worried about the damage and deterioration of fresh agricultural products in the process of transportation, followed by 31.13% of consumers who are worried about the high freight and 36.42% of consumers who are worried about the problem of unable to return the goods.

2.3.5 Consumers' satisfaction with the seller's handling of after-sales problems

Among the consumers who have experienced after-sales problems, 65.33% of the consumers are satisfied with the seller's handling of after-sales problems, and 34.67% of the consumers are not satisfied with the seller's handling of after-sales problems.

3. Realization path of online agricultural product quality and safety based on consumer demand

Based on the analysis results of consumer demand behavior of online agricultural product quality and safety, and the cold chain agricultural product safety control mode under the background of Internet +, the implementation path analysis is carried out:

1) According to the needs of consumers in all aspects of online agricultural products, focusing on

the quality and safety of agricultural products, continuously improve the whole cold chain supply system, introduce pre control and source control, process control, agricultural products traceability system, PDCA ring and other modes, and strengthen the publicity, guidance and popularization of fresh agricultural products e-commerce knowledge to consumers according to the needs.

2) Formulate standardized network agricultural product quality standards and quality inspection process

The quality and safety standard of agricultural products is an important law enforcement basis for the supervision of quality and safety of agricultural products, as well as an important technical guarantee to support and standardize the production and operation of agricultural products. Formulate and strictly implement the quality and safety standards of agricultural products, such as the residue limits of pesticides, veterinary drugs and other chemical substances in agricultural products, the allowable amount of heavy metals and other toxic and harmful substances in agricultural products, the provisions of pathogenic parasites, microorganisms or biotoxins, the provisions on the use of pesticides, veterinary drugs, anti-corruption agents, preservatives and other chemical substances, so as to achieve standardization and consumption[5.6].

3) Establish and improve the Internet + cold chain logistics standardization system for agricultural products

Based on the principle of overall planning and optimization, by means of cloud computing, big data, Internet of things, mobile Internet and other technologies, reconstruct the intelligent, visual and transparent monitoring and supervision of cold chain logistics standards of agricultural products, strengthen the legal construction of cold chain logistics of agricultural products, establish the three-level standardization system of government departments, cold chain industry organizations and cold chain enterprises, and increase the cold chain circulation of agricultural products "The first one kilometer" standard setting strength [7].

4) Strengthen the traceability of food supply chain and consumers' trust in online purchasing of fresh agricultural products

Establish the traceability management system of cold chain logistics of agricultural products, connect producers, regulators and consumers by building a traceability system of "one center and three modules" (one traceability cloud data center, and three modules of producers, regulators and consumers); make full use of the network platform, carry out product promotion, do a good job in market price positioning, and pay attention to Establish and maintain the brand image [8]; identify the market position and pay attention to its own characteristics.

4. Conclusion

With the advent of the Internet + era, the rapid development of agricultural product network has formed a group of more loyal purchasing groups. This new agricultural product docking mode makes the purchase of agricultural products more convenient, but at the same time, it also increases the hidden dangers of agricultural product safety problems, mainly reflected in the reliability of the source of agricultural products on the network, the timeliness of logistics and distribution, and the low transportation process. In terms of temperature maintenance, this new docking mode of agricultural products also brings new challenges to the supervision of relevant government departments. In the future, through modern information means such as network big data, it will help to solve the problem of information asymmetry, help consumers and relevant government agencies to effectively identify the reputation of online agricultural products suppliers and sellers and obtain quality and safety data.

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