

Study on the Influencing Factors in the Process of Implementing Informatization in Agricultural Products Logistics

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Abstract

My country is a large agricultural country, and the development of agriculture directly affects other industries. In order to make agriculture more competitive in the industry under the rapid development of information technology in our country, we need to realize the logistics informatization of agricultural products. The realization of agricultural product logistics information is of great significance for balancing market supply and demand, accelerating the process of agricultural modernization, and improving agricultural total factor productivity. But the road to informatization has not been smooth sailing. This paper studies the influencing factors of agricultural product logistics informatization, and focuses on the opportunities and challenges China faces in the process of agricultural product logistics informatization. Through understanding and analyzing the difficulties in the informatization of my country's rural areas and enterprises, how to develop rapidly on the issue of my country's agricultural product logistics informatization, some personal suggestions have been put forward.

Keywords

Agricultural Product Logistics; Informatization; Construction.

1. Introduction

my country's agricultural products are too scattered in terms of the distribution of production and consumption places, and cannot meet the timely exchange of supply information and demand information. At present, the construction of network communication technology in rural areas is relatively backward. During the annual agricultural product harvest season, it is often difficult to sell agricultural products in the production area and consumers in the agricultural product consumption areas cannot purchase agricultural products. Therefore, it is particularly important to ensure the smooth flow of information and the quality and quantity of agricultural products in the process of circulation from the place of production to the place of consumption. The key part of modern agricultural product logistics is informatization. Product quality and high ornamental value, as well as the competition of agricultural products in the supply chain, are the focus of the contemporary information society. A series of activities such as collection, processing, analysis, storage, classification, and display of agricultural product information can ensure that the circulation of agricultural products can be realized more smoothly[1].

Ding Hua[2].believes that in terms of consumption concepts, people have gradually shifted from the traditional single-channel type and complex type to the multi-faceted and rapid type. Agricultural product logistics should also keep pace with the times and transform the traditional circulation and sales model. Ding[3]. believes that the operation efficiency and quality of the national economy are both fast and slow, which are profoundly affected by the development of agricultural product logistics, and the informationization of agricultural product logistics has a profound impact on the transformation of traditional agriculture to

modernization. Du and Zhang[4].believe that the contradiction between the complexity of the production area of agricultural products, the seasonal variability and the continuity of residents' consumption mainly depends on agricultural product logistics to buffer and solve, and the informatization of agricultural product logistics accelerates the pace of resolution.

Many foreign research scholars also have a very in-depth understanding and analysis on the theoretical research of informatization. For example, the "Information Economics" published by American scholar Stigler marked the official birth of information economics. At the same time, there are related theoretical studies on informatization in Japan. For example, the Japanese sociologist Umezhaio Tadao clearly pointed out in the article "On the Information Industry" that "informatization refers to the modernization of wired and wireless communications, computer rationalization, and behavior standardization and rationalization."; in the 1960s, Japanese scientists and economic research groups put forward the concept of informatization[5].

This article first analyzes and summarizes the current research status of agricultural product logistics informatization at home and abroad, and then introduces the significance of implementing agricultural product logistics informatization in my country; then it discusses my country's informatization in terms of infrastructure construction, lack of logistics talents, and high costs. Implement various influencing factors in the process of agricultural product logistics informatization; finally put forward their own improvement opinions and directions for these influencing factors.

2. The Necessity of Implementing Informatization in Agricultural Product Logistics

2.1. The Informatization of Agricultural Product Logistics is the Only Way to Realize Agricultural Modernization

At present, my country's economy is shifting from a stage of high-speed growth to a stage of high-quality growth. At this time, agricultural development is in a critical period of "adjusting structure and changing methods." The key to agricultural transformation lies in the full application of emerging information technology to agricultural development, so that the development of agriculture can be free-riden by information, so as to promote the transformation of agriculture in terms of quality, efficiency, power, and total factor productivity. Most of these goals can be achieved through agricultural informatization.

2.2. The Implementation of Informatization of Agricultural Product Logistics can Better Balance the Relationship between Supply and Demand

At present, my country's agricultural product sales methods can be divided into three categories: first, vendors buy agricultural products in batches from rural areas, and then transport them to cities for independent sales; second, agricultural producers directly transport agricultural products to the market for sale; third, rely on In the east wind of e-commerce, sales are carried out through online channels[6].

In the first two sales models, the distance between the production area of agricultural products and the market is relatively long, the market information and logistics information are not transparent enough, and there is a lack of effective information connection between the upstream and downstream of the circulation. In order to improve this situation, a unified large-scale online communication platform for agricultural product logistics information can be established to correlate market demand with production requirements, and accurately formulate planting plans; shorten the window period for agricultural products from harvest to sale.

2.3. Agricultural Product Logistics Informatization can Promote the Construction of New Countryside

The development status of agriculture and rural areas is becoming more and more significant. Therefore, organically combining the construction of agricultural product logistics information with the development of rural modern logistics can not only solve the problems in the transportation and storage of agricultural products, but also help improve the rural information technology. Degree[7].

2.4. Informatization can Guarantee the Quality of Agricultural Products

Table 1. The output of major agricultural products in various regions of my country in 2017 (unit: 10,000 tons)

species region	Rice	Wheat	Corn	Peanut	Sesame	Apple	Pear	Banana
Hebei	50.4	1504.1	2035.5	103.4	0.2	228.1	342.4	0
Shanxi	0.5	232.4	977.9	1.3	0.1	444.9	86.7	0
Inner Mongolia	85.2	189.1	2497.4	5.9	0.2	15.5	7.9	0
Liaoning	422.0	1.3	1789.4	80.0	0.1	240.9	116.2	0
Jilin	684.4	0.1	3250.8	109.3	0	4.6	3.9	0
Heilongjiang	2819.3	38.1	3703.1	5.0	0	14.4	3.7	0
Jiangsu	1892.6	1295.5	318.1	34.8	0.8	58.0	78.0	0
Zhejiang	444.9	41.9	23.0	5.1	0	0	38.9	0
Anhui	1647.5	1644.5	610.7	68.8	0.7	20.0	124.2	0
Fujian	393.2	0.1	11.4	18.7	0	0	16.7	38.7
Jiangxi	2126.1	3.1	15.4	46.8	3.3	0	16.8	0
Shandong	90.1	2495.1	2662.2	313.5	0.1	939.5	103.7	0
Henan	485.2	3705.2	2170.1	529.8	14.1	434.5	121.8	0
Hubei	1927.2	426.9	356.7	78.4	10.5	1.2	37.5	0
Hunan	2740.4	9.6	199.2	27.6	1.4	0	16.6	0
Guangdong	1046.3	0.1	54.6	98.4	0.5	0	10.4	395.2
Guangxi	19.8	0.5	271.6	60.8	1.7	0	35.9	371.6
Hainan	123.2	0	0	8.9	0.1	0	0	127.2
Sichuan	1473.7	251.6	1068.0	66.0	0.2	65.2	91.7	4.6
Guizhou	448.8	41.2	441.2	11.3	0.1	7.1	28.0	1.7
Yunnan	529.2	73.7	912.9	6.2	0	59.7	63.6	176.8
Xizang	0.5	21.9	3.0	0	0	0	0	0
Shanxi	80.6	406.4	551.1	12.5	1.5	1092.5	105.2	0
Gansu	2.9	269.7	576.7	0.2	0	311.1	21.0	0
Qinghai	0	42.3	12.2	0	0	0.4	0	0
Ningxia	68.8	37.8	214.9	0.1	0	44.0	1.7	0

From the data in Table 1, it can be understood that the over-dispersion of the production areas of my country's major agricultural products leads to the problems of freshness preservation and information smoothness in the transportation process of agricultural products. Use information technology to connect the information of the origin and the sales area to the greatest extent to ensure that the agricultural products of the origin accurately find the attribution, shorten the residence time of the agricultural products in the production area, and ensure that the agricultural products delivered to the consumers are as good as possible.

3. Influencing Factors in the Process of Agricultural Product Logistics Informatization

3.1. Investment in the Field of Information Technology Continues to Increase

Table 2. My country's investment amount in information transmission, software and information technology service industries from 2013 to 2017

year/year	2013	2014	2015	2016	2017
amount/100million yuan	3084.9	4103.0	5516.4	6318.7	6987.4

From the data in Table 2, we can clearly see that my country's investment in the field of informatization is increasing year by year, and this trend is conducive to the realization and popularization of informatization.

3.2. The Rural Information Network is Gradually Improving

In 2016, 99.50% of the villages in my country had telephones connected; 82.80% of the villages had cable television installed; 89.90% of the villages were connected to broadband Internet; 25.10% of the villages had e-commerce distribution centers. In 2014, the Ministry of Agriculture and Rural Affairs implemented the pilot work of "information into villages and households". By 2016, the scope of the experiment had increased to 116 counties in 26 provinces [8].

3.3. Information Technology is Constantly Updated and Developed

The popularization of 4G wireless networks has laid a communication foundation for the development of modern logistics, and the 5G era has also come; barcode technology, electronic data exchange technology, radio frequency identification technology, etc. have laid a solid technical foundation for the development of modern agricultural product logistics information [9].

3.4. Lack of Logistics Information Talents

The data in the "2017 Global Artificial Intelligence White Paper" shows that China has at least one million talent gaps in artificial intelligence; it is expected that by 2020, the new generation of information technology talents will reach a gap of 7.5 million [10].

3.5. Relevant Companies have Conservative Concepts and Insufficient Understanding

First, the leadership of an enterprise cannot keep up with the times, lack of understanding of the importance of informatization, and have too conservative ideas. Secondly, employees should have a passable work attitude and cannot strictly demand themselves with high standards. A slight error may affect the operation of the entire information system[11].

3.6. Small and Medium-sized Enterprises are Overwhelmed by Informatization Construction

Informatization construction has the characteristics of very high technical content and huge capital investment. For most small and Medium-sized enterprises, it is not realistic to invest a large sum of funds into informatization construction. This is especially true for small businesses that are struggling with survival problems[12].

4. Countermeasures to Promote the Construction of Agricultural Product Logistics Information

4.1. Increase Capital Investment in the Field of Agricultural Product Logistics Information

For a long time, my country's investment in agriculture has mainly focused on agricultural production, and investment in the circulation of agricultural products involves more investment in logistics facilities, equipment and other hardware. Without a unified agricultural product logistics information service platform, most agricultural product sales methods are fresh processing from the place of origin to the place of sale. If the prevailing Internet of Things, big data, cloud computing and other methods can be used to integrate the national logistics data and information in a single On a platform that is not only conducive to the rapid and accurate circulation of information, but also to quickly find a sales market and reduce the cost of agricultural products.

4.2. Speeding up the Construction of Logistics Infrastructure

First, the government or enterprises can increase their investment in scientific and technological research and development, technical facilities, and professional talents by investing special funds in the field of informatization; second, they should also increase their efforts in the construction of industry standards, especially Standard systems such as logistics operations, information technology service standards, and information data transmission and transmission standards, strive to be in line with international standards as soon as possible, and form agricultural products logistics industry standards that adapt to China's national conditions; third, weigh the population, consumption structure and income level of each region According to these gaps, the agricultural product distribution center shall be planned and arranged rationally.

4.3. Build an Agricultural Product Logistics Information Platform

Intensify efforts to promote the construction of software and hardware. We can refer to the integrated information of the China Railway Customer Service Center and the operation mode of providing real-time query services to build a logistics information service platform that can be used uniformly across the country. At the same time, the government also A third-party enterprise can build an agricultural product logistics information platform on a mature platform by purchasing information services to facilitate the participation of farmers.

5. Conclusion

First, in the current information age, the impact of agricultural product logistics informatization on the agricultural economy is becoming more and more obvious, and its status is becoming more and more important. Promote the rational construction of agricultural product logistics informatization, and apply modern information technology to the construction of informatization. And then improve the level of development and utilization of information resources to promote the rapid development of social economy. Second, the construction of agricultural product logistics informatization is difficult and long. Although we still need to face many difficult problems, we must have the confidence to face it and optimize various resources and talents. The goal of agricultural product logistics informatization will eventually be realized.

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