

Research on International Competitiveness of Distinctive Agricultural Products in the Era of Big Data

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Abstract: In the era of big data, the development of agricultural products faces both opportunities and challenges. Under this background, it can not only allocate resources properly but also improve the regional supply of agricultural products to master the circulation law of agricultural products between the origin and the sales territory by depending on big data and Internet Plus. In addition, it is of great practical significance for exploring the international market of China's advantageous agricultural products and protecting the domestic agricultural market. First, this paper analyzes the development of advantageous agricultural products and the significance of big data on the improvement of international competitiveness of agricultural products. Second, it overviews the concept of international competitiveness of agricultural products. Third, it analyzes main factors affecting the international competitiveness of distinctive agricultural products. Finally, it puts forward a scheme to enhance the international competitiveness of distinctive agricultural products, which is to build an electronic commerce model for distinctive agricultural products based on big data from four aspects including the e-commerce brand operation of agricultural products, making different marketing plans for different agricultural products, the integration of online and offline resources, and information sharing.

1. Introduction

China is a big agricultural country. With the access to WTO and the deepening of economic globalization, the international competition of agricultural products is increasingly fierce. Especially in recent years, the wide opening of agricultural products market and the decline of average tariff have made China's agricultural trade deficit increase year by year. In order to change the trade deficit of agricultural products and expand the foreign trade of agricultural products, we should constantly improve their international competitiveness. This paper analyzes the international competitiveness of agricultural products in China and puts forward suggestions to improve their international competitiveness. Over the past few years, "Internet Plus" has started to go into various sectors of the society, which has played an important role in economic activities. The Big Data industry, which comes with the above changes, has been listed as a national core focus. In particular, the development of agriculture in the era of internet has brought to the forefront. The government even issues the *Suggestions on Promoting the Development of Big Data for Agriculture in Rural Areas*, aiming to promote the road of developing agriculture with information technology and intelligence.

2. Definition of International Competitiveness of Agricultural Products

International competitiveness was first proposed in the *Competitiveness Report* published in World Economic Forum, in which it defines international competitiveness as "capabilities and opportunities to design, produce and sell products and provide services business owners have with more attractive price and quality than other competitors both at home and abroad do." The international competitiveness of agricultural products is an industrial one. Based on the trade situation of agricultural products, this paper gives the concept of international competitiveness of agricultural products. Agricultural products with a strong international competitiveness must meet several conditions, including meeting the needs of the international market, making profits

consistently, maintaining a stable international market share. To be specific, the international competitiveness of agricultural products is that a country or a region can produce agricultural products that meet the needs of the international market in a fair and free manner. Furthermore, for a long period it can maintain the market share of agricultural products in the international market and make profits consistently.

3. Main Factors Affecting the International Competitiveness of Distinctive Agricultural Products

3.1 Low export grade of agricultural products and lack of competitiveness

The export volume of agricultural products in China accounts for a small proportion of domestic agricultural production. For example, in 2016, exports of vegetables and fruits accounted for only 1.3% and 4.2% of domestic production respectively. At present, lowly processed and low value-added agricultural products are mainly exported, which results in low export benefits. In 2012, the export proportion of China's deep-processed agricultural products was 41.2% while in 2016 that figure amounted to 50%. Though improved, it is still relatively low when compared with the developed countries whose proportion of deep-processed exports is above 80%.

3.2 Quality problems of agricultural products

The quality of agricultural products is generally not high in China, and excessive pesticide residue is the primary factor. Our fruits, vegetables and other advantageous agricultural products have also been repeatedly restricted in export because of the excessive residue of pesticide and fertilizer and other problems. Veterinary drug residues and animal diseases also negatively affect the export of animal products. Although these advantageous agricultural products can be exported to foreign markets, their international competitiveness will decline rapidly due to the quality problem. In recent years, some importing countries have made new importing standards for agricultural products, which requires for more high quality. As a result, the relatively low quality of agricultural products severely limits the export of agricultural products in China. In international trade, large quantities of agricultural products and their byproducts from China are sent back due to impurities, poor sanitation, pesticide residues, excessive bacteria, unclear labelling and other problems. At present, the food quality and safety problem has become the primary factor affecting agricultural trades in China.

3.3 Technical barriers to trade hindering agricultural Exports

Technical barriers to trade are the main obstacles to the export of Chinese agricultural products. With the progress of agricultural science and technology, the developed countries continuously improve the technical standards of imported agricultural products, and thus the technical trade barriers become more and more serious. In recent years, foreign countries have taken measures to impose more technical barriers on the export of agricultural products from China. China's main export markets, Japan and the European Union, have enacted and issued corresponding import standards for agricultural products, which makes the export of our agricultural products more difficult and increases the export cost. As a result, it has seriously affected the export of agricultural products and the healthy development of agriculture in China.

4. Enhancing the International Competitiveness of Distinctive Agricultural Products by Big Data

Although the development of internet has changed consumers' shopping way, consumers still value the quantity and variety of goods. Cloud computing can effectively screen out and display goods based on customers' requirements and transaction needs. The biggest advantage of Big Data is the rapid response to users' input, which can accurately provide customers with the needed goods. As shown in Figure 1, this paper constructs an electronic commerce pattern for distinctive agricultural products to improve the quality of service and strengthen the international

competitiveness.

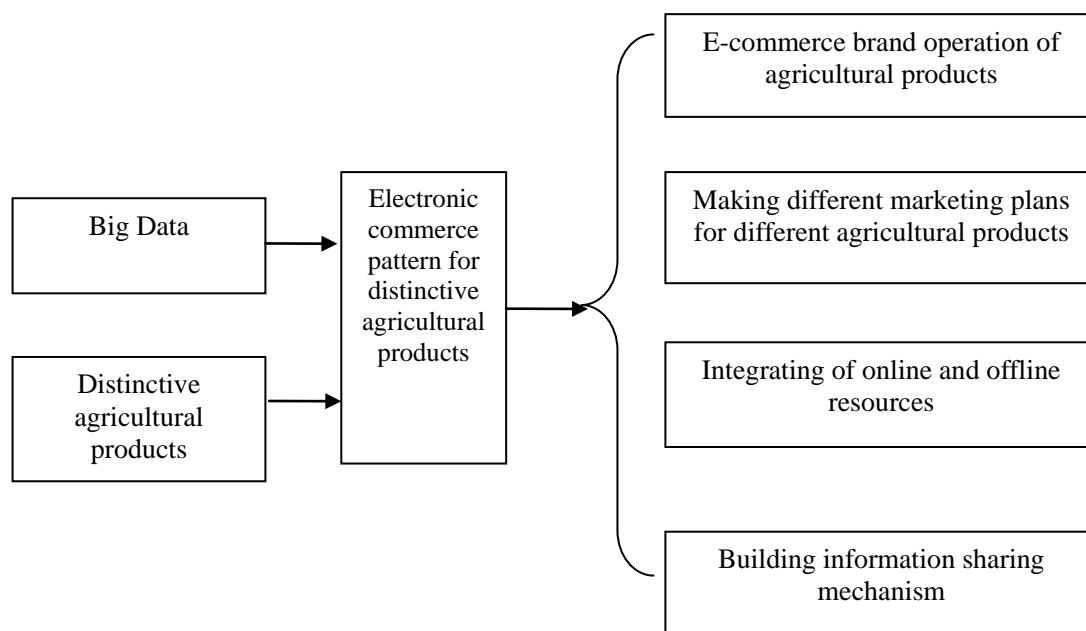


Figure1. The electronic commerce pattern for distinctive agricultural products based on Big Data

4.1 Emphasizing the quality of products and strengthening e-commerce brand operation of agricultural products

The quality of products is the core supporting its brand. Therefore, it is necessary to control the quality of products during the whole process from production, processing to circulation by the traceability system. It can fully explore the culture and values in them to make e-commerce brand operation of agricultural products. It is necessary to declare geographical indications actively to protect product marks and certify as green products. It can promote the brand image of distinctive agricultural products with cultural allusions, traditional crafts and brand concepts. In addition, it can use its brand stories to shape its brand image and visual designs to express the image, which makes the image more vivid and enhances the brand value identity in consumers.

4.2 Making different marketing plans for different agricultural products

It can build a precise marketing decision system that uses Big Data technology to collect, store and filter data, analyze consumers' behaviors of browsing and clicking on the internet, and find and use long tail keywords searches to increase the chance that users will search for related items. Based on different segments of customers, it should analyze personalized demands and then use personalized recommendation techniques to pinpoint and awaken potential needs. It attaches great importance to the import of WeChat, social network and self-media, and continuously improves the enterprise's marketing capability on network. It should pay attention to the public relation on internet, make brand-marketing events to expand its influence, respond to consumers more actively, and eliminate the negative impact timely.

4.3 Integrating online and offline resources and enhancing user experience

It should integrate regional resources and develop leisure agriculture by experience marketing to strengthen online promotion or establish cooperative relationship with mainstream tourism platforms, which promotes shopping, leisure, entertainment, sightseeing and other products and information. Using geographic information systems and mobile positioning technology, it can develop O2O experience platforms such as delicacies platform and leisure agriculture platform, which forms a distinctive agriculture industry chain that makes orders online and experiences offline to enhance the user's brand experience.

4.4 Building information sharing mechanism

It is of great significance for the production, development, logistics and sales of distinctive agricultural products to analyze the user image, demand information and order data based on Big Data. Led by the government and industry associations, information sharing can promote the division of labor and the formation of industrial clusters among upstream and downstream enterprises, which thus improves the overall brand competitiveness of distinctive agricultural products.

5. Conclusions

As a big agricultural country, China should make research on the e-commerce development pattern of agricultural products, which is of great significance to improve the international competitiveness of our distinctive agricultural products. At present, Big Data has exerted negative impact on the traditional economic development pattern, so it is necessary to study Big Data deeply and combine it with our own development areas to meet the needs of social development. Depending on electronic commerce, we can make great-leap-forward development of agricultural products and explore more roads for them. In the era of Big Data, we can develop agricultural products through e-commerce innovatively, which is beneficial to improve the competitiveness of agricultural products, make agricultural products form their own brand and achieve intensive development, and enhance the international competitiveness of distinctive agricultural products.

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