Study on the Supply Chain Model of Rural Characteristic Products—Taking Zhejiang Province as an Example

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Abstract: Vigorously developing rural characteristic products (RCP) is an effective way to implement the strategy of rural revitalization. Zhejiang Province has taken the lead in the construction of common wealth demonstration area in the country, and has formed a number of RCP with regional characteristics, high brand value and good economic benefits. The article analyzes the development status quo of RCP in Zhejiang Province, summarizes the current deficiencies in its supply chain, and proposes that according to the different attributes of RCP, the supply chain modes of leading enterprises, e-commerce platforms and consumers should be adopted respectively.

Keywords: Rural Characteristic Products, Supply chain model, Rural revitalization.

1. Introduction

In June 2021, “the Opinions of the Central Committee of the Communist Party of China and the State Council on Supporting Zhejiang’s High-Quality Development and Building a Common Wealth Demonstration Area” was officially issued, giving Zhejiang the important mission of taking the lead in building a common wealth demonstration area nationwide to help farmers increase their incomes and become rich. Zhejiang Province vigorously develops rural characteristic industries, drives rural revitalization with industrial revitalization, broadens income channels and narrows the gap between urban and rural areas. The development of Rural Characteristic Products in Zhejiang Province is in full swing, and a variety of representative products have been cultivated. Studying the current situation of its development and existing problems will be conducive to other provinces in China to learn from its development experience, promote the development of Rural Characteristic Products around the countryside, and help the work of rural revitalization.

2. Current Research Status of Supply Chain of Rural Characteristic Products

Rural products can generate income for local farmers and many scholars have studied rural products. S. Raveesh (2019) analyzed the possibility of rural festivals and town fairs to create markets for rural products [1]. Due to the high substitutability of rural products, it is important to create a brand for these products, which in turn will help them to sell. Japan’s “one village, one product” movement is progressing well, and by fostering brands, it is possible to promote the common development of “nature, people, society, and urban and rural areas” in the local area. Many countries are learning from Japan’s experience and applying it to the development of their own villages and towns. Miagina Aveanty (2021) analyzed the different effects of “one village, one product” in the two regions, and concluded that the local product development policies formulated by the society and the local government have a significant impact on the effects of “one village, one product”[2]. Jiaxi Luo (2022) analyzed the problems existing in the construction of “one village, one product” in Kangping County, and put forward the suggestion of expanding the construction of villages with special industries [3]. Ke Yang (2023) analyzed the development of regional brands of agricultural products in Jinan City, and made recommendations for strengthening the brand foundation and developing the regional brands[4]. Meanwhile, there are many problems in the supply chain of rural products. Chunrong YU (2016) analyzed three models of agricultural products supply chain in Jilin Province, and summarized the problems of these models in terms of benefit distribution, logistics level, organization degree and e-commerce [5].

3. Supply Chain Management Analysis of Rural Characteristic Products in Zhejiang Province

3.1 Analysis of Rural Characteristic Products in Zhejiang Province

Rural Characteristic Products (RCP) refer to products with strong local flavor, distinctive regional characteristics, excellent product quality and broad development potential, including specialty planting products, specialty breeding products, specialty food and specialty handmade products. Zhejiang Province is rich in diverse types of landform, and various places develop products according to local conditions, cultivating a variety of RCP, including Anji white tea, Taihu Lake crabs, Jinhua ham, etc. The Ministry of Agriculture and Rural Development announced the twelfth batch of the national “one village, one product” demonstration villages and towns, and 11 villages and towns in Zhejiang Province were selected, of which 9 villages and towns were selected with local specialty products, and 2 villages and towns were selected for their leisure tourism.

In recent years, Zhejiang Province’s RCP have been further developed with the help of the Internet, such as online sales with the help of e-commerce platforms, realizing the digital management of the whole process from production to sales, relying on the analysis of big data to predict the sales volume, and setting up production demonstration parks. More and
more enterprises realize the importance of e-commerce and have opened online sales channels. Enterprises and farmers working on RCP in Zhejiang Province have also kept pace with the times, using e-commerce platforms to promote their products and thus increase their sales. The local government also through a variety of platforms to live with goods to help rural specialty product sales, such as Huzhou City Tobacco Monopoly Bureau to carry out live to promote a variety of products, there are official government agencies to do the endorsement of the quality of RCP are guaranteed, the consumer’s willingness to buy has been improved. Some enterprises have developed special management platforms, such as Anji white tea APP, with the help of the Internet to realize the whole process of product management from production to sales. Relying on the platform, ordinary farmers can understand the soil conditions, air, humidity in real time, so as to achieve scientific production; enterprises and dealers can release order information on the APP, the ownership of the product handover and transfer of funds; consumers can scan the code to check the product information, the main body of the production, the tea plantation information, the production process, test reports and so on. This integrated digital management system of production, supply and marketing truly realizes the closed-loop traceability management of products. In recent years, more and more enterprises attach importance to big data analysis, according to the results of the analysis of their own production and business activities to make scientific arrangements to reduce costs and improve efficiency, such as Zhejiang characteristics of aquaculture products Taihu Lake crabs, local fishermen according to the results of the data analysis to arrange the amount of crab seedling input, to avoid the phenomenon of oversupply in the market, and very well safeguard the interests of farmers, food enterprises, consumers. The construction of demonstration parks for the integrated development of rural industries in Zhejiang Province is progressing hotly, and by the end of 2022, more than 30 demonstration parks are under construction in Zhejiang Province. The parks closely integrate rural primary, secondary and tertiary industries through the linkage of industrial chain, value chain and benefit chain, forming a unity of risk-sharing and benefit-sharing, thus promoting the extension of agricultural industry chain, the expansion of agricultural functions, and the enhancement of agricultural value. In demonstration parks, multiple industries are integrated, such as the Sanlin Demonstration Park in Deqing, Huzhou City, which combines fishery farming with digital technology, and silk processing with rural folk tourism, so as to organically combine rural specialty farming products, rural specialty handmade products and rural tourism, and jointly drive the development of the local economy.

3.2 Problems in the Supply Chain of Rural Characteristic Products in Zhejiang Province

Insufficient development of RCP. In recent years, the project of “one village one product” in Zhejiang Province has made good progress, but it is undeniable that these certified products do not have high popularity, and there are more substitutes in the market. Taking Anji white tea, a characteristic plantation product of Zhejiang Province, as an example, Chinese consumers recognize Fuding white tea, and the popularity of the product greatly affects sales. Insufficient efforts of local governments and enterprises to explore the cultural value of the product, weak publicity for the product and few support measures for the product have prevented the value of the product from being given full play, all of which have limited the development of RCP.

The logistics system of RCP is not sound and the operation efficiency is low. The special location of some RCP, backward logistics infrastructure, poor road transportation conditions, inadequate storage equipment, resulting in a large rate of product damage during transportation, damaging the interests of the producer. At the same time, multi-layer dealers increase prices for their own gains, resulting in product prices higher than the psychological expectations of consumers, and consumers’ willingness to buy declines, which is not conducive to market development. Take fresh vegetables, fruits and aquatic products as an example, these products have higher requirements for transportation conditions, and in order to ensure the quality of products, the whole process of cold chain transportation is often needed. However, the insufficient number of cold chain transportation vehicles and cold chain warehouses, the huge expenses required for the purchase of equipment and their subsequent maintenance, the shortages of professional operators, and the planning of the operation of the vehicles and warehouses in low season of product sales are all the problems faced by the construction of cold chain logistics. Finally, some RCP are still dominated by small-farmer type operation mode, without forming scale efficiency, and the quality of products cannot be guaranteed. Many merchants have given up the market of RCP for cost consideration.

The management of RCP has a low level of intelligent and low efficiency of information communication. Although some products have adopted digital management and some regions have established production demonstration zones, the supply chain management of the vast majority of RCP is still in a backward state. Consumers are unable to trace the production process of the products, and unstandardized processing techniques have led to the market being flooded with products of varying quality, all of which is detrimental to the brand image of the products. Some farmers are reluctant to enter the digital management system, and because farmers, intermediaries and consumers do not enter the same system, but only docking with the upstream and downstream, which makes the information flow slow and the timeliness of the information is not strong, and sometimes produces the “bullwhip effect”, which brings economic losses to the participants of the supply chain.

Shortage of practitioners in the supply chain of RCP. At present, there is still a big gap between the development of China’s villages and towns, and the conditions of housing, medical care, sanitation and recreation in villages are far away from those in towns, and there is a serious loss of talents. Young people with logistics and supply chain knowledge are reluctant to return to their hometowns, and middle-aged and old people staying in the countryside are slow to accept new knowledge and technology, which cannot meet the demand for supply chain talents. The current personnel engaged in supply chain related work of RCP have poor service consciousness, low innovation ability and low e-commerce awareness. All these limit the development of RCP.
4. Supply Chain Model of Rural Characteristic Products

From the above analysis, it can be found that there are some problems in the supply chain of RCP in Zhejiang Province, and choosing appropriate supply chain models for different types of RCP can better solve the above problems.

4.1 Supply Chain Mode Led by Leading Enterprises

Rural specialty planting products and specialty farming products have strong seasonal and cyclical characteristics, and the supply chain model of the two can basically be shared. For these two kinds of products, it is necessary to build a supply chain model led by leading enterprises.

First, cultivating leading enterprises can reduce the risk of ordinary farmers. General retail households produce a limited number of products, although the output of cooperatives has improved, but the quality still can not be effectively guaranteed, in the face of changing market conditions, retail households and general cooperatives are less able to withstand risks, such as in the face of COVID-19 in 2020, the sales of many products have been affected, and the initial capital investment can not be recovered, many farmers, cooperatives, small and microenterprises are facing the risk of a broken capital chain or even the risk of closure. Farmers can better guarantee their own interests by signing reservation orders with leading enterprises and transferring the risk. At the same time, relying on their own strong market acumen and a variety of sales channels, leading enterprises can avoid risks as soon as possible as soon as possible. Secondly, cultivating leading enterprises helps to maintain brand image. When the market is filled with different packaging, quality, pricing differences in the same products, consumers will have doubts about the brand image, can not do high-quality quality control products difficult to win the favor of consumers. Leading enterprises can purchase local goods for precision processing, classify products of varying quality, and price them uniformly, which is beneficial for maintaining the order of commodity circulation in the market. Leading enterprises can also purchase primary products for standardized packaging, which is conducive to improving the recognition of commodities, improve production and transportation efficiency, and reduce the cost of packaging recycling. Once again, leading enterprises can directly connect with large supermarkets and wholesale markets to improve circulation efficiency. Local specialty planting products and specialty breeding products due to low visibility, most of them are still sold directly in the local, leading enterprises and large supermarkets or wholesale markets directly docking, reducing the intermediate circulation links, reducing the rate of loss, improve the efficiency of commodity circulation, but also to ensure that the goods are delivered fresh. Finally, the leading enterprises to solve the employment problems of local farmers. Leading enterprises are connected to farmers, one end is connected to the market, through the production and marketing orders, land trusteeship, asset shareholding and other ways to lead small farmers into the development of modern agriculture. At the same time, leading enterprises provide new jobs for non-planting and farming households, product acquisition, packaging, storage and transportation, sales and other aspects of the need for human capital investment, a large number of jobs will also attract young people to return to their hometowns, to solve the social problems of empty-nesting elderly, left-behind children and other social problems.

4.2 Supply Chain Model Led by E-commerce Platforms

The supply chain mode led by e-commerce platform is constructed for the rural specialty food. The cyclical characteristics of rural specialty foods are weak, basically not affected by the seasons, in the case of the local market tends to be saturated, online sales through the e-commerce platform has become the way to go.

The supply chain model led by the e-commerce platform has many advantages. First, it shortens the transaction link and avoids middlemen making price difference. In the traditional supply chain, there are multiple layers of distributors, and middlemen at all levels increase prices layer by layer the goods arrive at the hands of customers at high prices, reducing the customer’s willingness to buy. Through the e-commerce platform, customers communicate directly with the producer, shipped by the origin, the interests of both are protected. Secondly, the e-commerce platform can tap potential customers. In the past, due to the lack of publicity of rural specialty food, resulting in low visibility of the goods, poor brand awareness, customers outside the province are less likely to buy, and through the e-commerce platform, the producer can be through the graphic and video and other ways of comprehensive and systematic introduction of the product, to enhance the customer’s willingness to buy. At the same time, the e-commerce platform can build a strong brand image for the product, and provide product quality assurance, which is beneficial to improve the recognition of commodities, improve production and transportation efficiency, and reduce the cost of packaging recycling.
time, e-commerce platforms have expanded the market by pushing targeted advertisements to customers searching for similar products through big data analysis. Again, e-commerce platforms provide subsidies for agricultural products. Take Pinduoduo as an example, the platform from its inception has implemented a zero-commission policy for agricultural merchants, to reduce the burden and cost for farmers and agricultural businesses, to encourage farmers and agricultural businesses to enter the platform, and through the creation of the “Harvest Festival Consumption Season” and other activities, to provide consumption coupons and other forms of subsidies for promotions to stimulate the vitality of the market. Finally, live promotion can be carried out through the e-commerce platform. With the popularization of 4G network, people can brush the video to watch the live broadcast anytime and anywhere, and more and more merchants are seizing this opportunity to promote their products through the way of live broadcast with goods. Rural specialty food based on product characteristics, looking for live broadcasting personnel to promote with the product image match. At the same time the choice of location of the live broadcast is also very important, some merchants choose to live in the origin, so that consumers can visualize the production process, and some merchants choose a virtual background to create an exclusive style.

**Figure 2:** Supply Chain Model Led by E-commerce Platforms

3.3 Supply Chain Model Led by Consumer-orientation

The chain model led by consumer-orientation is constructed for rural specialty handicrafts.

First of all, the consumer-oriented supply chain model can more accurately grasp the market preference. Due to the difficulty of inheriting rural specialty handicrafts, few young people are engaged in this work, and the commodities produced are single-patterned and old-fashioned, and have not gained wide recognition in the market. In the consumer-driven supply chain model, the consumer first transmits the pattern, size, material and other requirements for the product to the producer, the producer produces according to the requirements, and gives feedback on time during the period, and finally makes a finished product that the consumer is willing to pay for. This approach also meets the special needs of some high-standard consumers. Secondly, the producer can summarize the market trend according to the past orders, and update the style of the product iteration. Consumer orders as the basis for summarizing and updating the product, because the pattern has been tested in the market, the launch of the success rate is greater. Again, it can reduce storage costs. In the past, products are produced and then sold, when the market demand is high, the product can be sold out and get a better income, and when the market is not good, a large number of products backlog in the warehouse, the storage costs for producers become more. In the consumer-driven supply chain model, the consumer to pre-order the form of cooperation with the producer, the producer and then processing and manufacturing, the product can be quickly sent to the hands of consumers after the completion of the product, reducing the cost of storage. Finally, the producer’s potential revenue increases. In this framework of high efficiency of information communication, producers grasp the market dynamics relatively accurately, and reasonably arrange time to engage in other productive labor. For example, cooperation with vocational schools to teach the cultural commutation and production process of rural specialty handicrafts. It can also be modeled on netizen Li Ziqi and other internet celebrity to create videos to introduce the production process of handicrafts, and the traffic gained from the videos can be liquidated, which also strengthens the visibility of the handicrafts.
5. Summary

The article takes Zhejiang Province as an example to analyze the development status and problems of its rural specialty products, and puts forward three supply chain models to help product sales. At the same time, the local government should increase the brand cultivation, strengthen the infrastructure construction, focus on talent cultivation, let the rural specialty products and rural tourism organic combination, to take a variety of ways to promote the development of the local economy.

References