

A Study on the Influence of Network Service Platforms on Increasing Income of Strawberry Growers in the Context of New Media

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Abstract With the rapid development of new media, the role of network service platforms in various fields is becoming increasingly prominent. In the agricultural field, network service platforms under the background of new media have brought new opportunities and challenges to strawberry growers. This paper conducted in-depth research on the impact of network service platforms on strawberry growers' income in the context of new media. Firstly, the concepts and characteristics of new media and network service platforms, as well as the theoretical basis of farmers' income increase, were explained. Then, the current application of network service platforms in strawberry cultivation was analyzed, including the cognition and use of the platform by strawberry growers, and the service content provided by the platform, such as market information push, technical guidance and training, and sales channel expansion. The influence mechanism of network service platforms on strawberry growers' income was deeply discussed, mainly reflected in reducing information asymmetry, enhancing product added value, and expanding sales channels. In summary, the network service platform under the background of new media provides strong support for strawberry growers' income increase, but still needs to be continuously improved and developed to better serve agricultural production and farmers' income increase.

Key words New media; Consumption; Rural e-commerce

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With the rapid development of new media, the application of network service platform in agriculture is increasingly extensive. Strawberry growers, as an important group in agricultural production, have received much attention for their income increase. In today's era, the rise of new media has brought profound changes to various fields, including agriculture.

Present Situation of New Media in Agriculture

Research background

New media, with its digital, interactive and real-time characteristics, has quickly integrated into people's lives. New media forms such as social media, short video platforms and live broadcast online are constantly emerging, which has changed the way and speed of information dissemination. People can get a great deal of information and communicate with each other through various new media channels, which provides a new way for the promotion and sales of agricultural products. With the continuous advancement of agricultural modernization, traditional agricultural production and sales model are facing the pressure of transformation and upgrading. As a part of agricultural producers, strawberry growers also need to adapt to the new market environment and consumer demand. Network service platforms provide strawberry growers with broader market space, more convenient sales channels and richer information resources, which helps promote the

modern development of the strawberry planting industry.

Research purposes

Under the background of new media, the research purposes of the influence of network service platforms on strawberry growers' income mainly includes following aspects: helping strawberry growers to increase their income. Clarifying specific influencing factors and pathways of online service platforms on the income growth of strawberry growers provides practical and feasible strategies and methods for increasing income for strawberry growers, thereby improving their economic benefits and enhancing their living standards.

The research aims to promote the development of strawberry industry. Giving full play to the advantages of network service platforms can accelerate the coordinated development of strawberry planting, sales and processing, enhance the overall competitiveness and sustainable development ability of strawberry industry, and promote the development of strawberry industry in the direction of modernization, intelligence and efficiency. The research also aims to promote rural economic prosperity. Increasing the income of strawberry growers is not only related to the interests of individual farmers, but also of great significance to the development of rural economy. The purpose of this study was to explore effective ways for promoting rural economic development by using network service platforms, and to provide practical experience for realizing the strategic goal of rural revitalization.

Research significance

This study is helpful to deeply understand the application of new media and network service platforms in agriculture and its influence mechanism on farmers' income, and provides a new research perspective and empirical basis for the theory of agricultural

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economic development.

Expanding the research field of new media application: Through the study on strawberry growers, we can further expand the application scope of new media in agricultural production and sales and enrich the content of research on new media application.

Helping strawberry growers increase their income and get rich: Studying the influence of network service platforms on strawberry growers' income can provide practical income-increasing strategies and methods for growers, and help them to expand sales channels, increase added value of products and realize income growth by using new media platforms. **Promoting rural economic development:** The increase of strawberry growers' income is not only related to the economic interests of individual farmers, but also of great significance to the development of rural economy. New impetus and support can be provided for rural economic development by studying the influence of network service platforms on the increase of strawberry growers' income.

Promoting the transformation and upgrading of strawberry industry: The application of network service platforms can accelerate the informatization, intelligence and modernization of strawberry industry, improve the overall competitiveness and sustainable development ability of the industry, and promote the transformation of strawberry industry from traditional planting mode to modern efficient agriculture.

Related Theoretical Basis

It mainly refers to a series of theoretical basis that can explain and support the influence of network service platforms on the income growth of strawberry growers in the current new media environment.

Concept of information asymmetry theory

According to the theory of information asymmetry, in market transactions, both parties have different degrees of mastery of relevant information. In traditional agriculture, strawberry growers often lack timely and accurate market information, which leads to blind production decision-making and poor sales channels. Network service platforms under the background of new media can break the information barrier and provide rich market information for strawberry growers, including price trends, demand changes, competitors and so on. In this way, growers can make more reasonable production decisions according to the information, such as adjusting planting varieties, controlling planting scale and choosing appropriate sales opportunities, thus reducing market risks and improving income levels.

Variety selection: Strawberry growers may not know the most popular strawberry varieties in the market and their future development trends due to asymmetric information. The market demand information, planting difficulty and yield performance of strawberry varieties in various places can be collected and published by establishing an agricultural information service platform, which can help growers make more informed variety selection decisions. For example, the platform can recommend some new varieties with

good taste, transportation resistance and high yield according to market data, and growers can adjust their planting varieties according to this information to better meet market demand and improve their income.

Procurement of agricultural materials: Farmers often face the problem of information asymmetry when purchasing agricultural materials such as seeds, fertilizers and pesticides, and do not know which supplier's products are of good quality and reasonable price. Online service platforms can be used to evaluate and rank agricultural suppliers and provide information such as price comparison and quality inspection report of agricultural products, so that growers can choose agricultural products with high cost performance. For example, some agricultural e-commerce platforms allow growers to check other users' evaluation and feedback on different agricultural products, thus reducing procurement risk.

Theoretical concept of agricultural industrialization

The theory of agricultural industrialization emphasizes the organic combination of agricultural production, processing, sales and other links to form an industrial chain, achieving large-scale, specialized and intensive management of agriculture. Network service platforms can promote the industrialization development of strawberry industry. Through the platforms, growers can establish closer cooperative relations with agricultural suppliers, processing enterprises and sellers, thereby realizing resource sharing and complementary advantages. For example, growers can directly sell strawberries to consumers through e-commerce platforms, reducing intermediate links and improving profits; and they can also cooperate with processing enterprises to process strawberries into sauce, juice and other products, so as to increase the added value of products. Meanwhile, the platforms can also promote large-scale and standardized strawberry planting, thereby improving production efficiency and product quality.

The extension of agricultural industrial chain should be promoted. **Developing processing of agricultural products:** Strawberry growers can be encouraged to cooperate with processing enterprises to process strawberries into products such as sauce, juice and dried fruit, thus extending the industrial chain and increasing the added value of products. For example, strawberry processing factories can be established, and advanced processing equipment and techniques can be introduced to produce high-quality processed strawberry products to meet the needs of different consumers.

The organization of agricultural industry should be promoted. **Establishing farmers' professional cooperatives:** strawberry growers can unite to set up cooperatives and jointly carry out activities such as production, sales and technical services. Cooperatives can purchase agricultural materials in a unified way, popularize new techniques, and expand the market, thereby improving farmers' market negotiation ability and risk resistance. For example, cooperatives can negotiate with agricultural suppliers to win more favorable prices; and strawberry growers can be organized to participate in training to improve the level of planting techniques.

Cultivating leading agricultural enterprises: A number of leading enterprises in strawberry industry can be cultivated through policy support and investment attraction. Leading enterprises can give full play to the advantages of capital, technology and market to drive strawberry growers to develop production and realize industrialized operation. For example, leading enterprises can sign orders with growers to guarantee the purchase price and provide technical guidance and services.

Influence mechanism of agricultural industrialization theory on farmers' income increase

Agricultural industrialization is to optimize the combination of various production factors while taking the market as the guide and economic benefit as the center and focusing on leading industries and products, and implement regional layout, specialized production, large-scale construction, serial processing, socialized service and enterprise management, so as to form an integrated management system involving planting and breeding, production and supply and marketing, trade and industry and agriculture, agriculture and industry and commerce, as well as agriculture and science and education, so that agriculture can embark on the benign development, self-accumulation, self-restraint and self-adjustment. It will enable agriculture to embark on a modern management mode and industrial organization form with a benign development track of self-development, self-accumulation, self-restraint and self-adjustment.

Scale economy effect^[7]: Agricultural industrialization achieves large-scale operation by integrating scattered farmers' production. The expansion of scale can reduce unit production cost, improve production efficiency, and thus increase farmers' income. For example, large-scale cultivation of agricultural products can adopt more advanced agricultural technologies and equipment to improve yield and quality.

Industrial chain extension: Agricultural industrialization connects agricultural production, processing and sales to form a complete industrial chain. Farmers not only participate in agricultural production, but also get more benefits by participating in the processing and circulation of agricultural products. For example, farmers can process their own fruits into fruit juice, canned food and other products to increase the added value of products.

Application Status of Network Service Platforms in Strawberry Planting Under the Background of New Media

Sales channels

Large e-commerce platforms such as Taobao, JD.COM and Pinduoduo have become important channels for strawberry sales. Growers can directly open stores on the platforms and sell strawberries to consumers all over the country, which breaks geographical restrictions and expands the sales scope. For example, strawberries from Yinan County are exported to Beijing, Tianjin, Shanghai and Guangzhou through e-commerce platforms^[5].

Some local e-commerce platforms and community group

buying platforms have also played an important role. They can respond to the local market demand more quickly, realize the rapid delivery of strawberries and ensure the freshness of strawberries^[2]. Farmers promote and sell strawberries through WeChat circle of friends and WeChat group. For example, growers in Jurong City sell strawberries through WeChat group buying groups, which has achieved good results.

Technical services

Professional planting technology service platforms like Strawberry Circle have emerged. They have professional technical teachers who provide one-on-one services for strawberry growers, including strawberry seedling cultivation, cultivation techniques, pest control, and water and fertilizer management, which help farmers solve problems encountered during the planting process, improve their planting skills, and achieve increased production and income.

Online agricultural course platforms provide a wealth of strawberry planting technology courses, and growers can learn the latest planting technology and management experience by watching video tutorials and reading articles.

Growers can monitor the environmental parameters such as temperature, humidity and illumination in strawberry greenhouses in real time through mobile phones or computers using the Internet of Things technology, and realize remote control of irrigation, ventilation and other equipment, which improves management efficiency and reduces labor intensity.

Some platforms also provide data analysis function providing planting suggestions and decision support for growers according to monitoring data, which helps to optimize planting schemes.

Strawberry Growers' Cognition on and Use of Internet Service Platforms

Selection of survey samples and introduction of basic situation

The method of random sampling was adopted. In areas where strawberry planting was concentrated, a certain number of growers were randomly selected as samples. Specific sample objects could be determined by random number generator or lottery to ensure the randomness and representativeness of samples.

Demographic characteristics of growers: Strawberry growers have a large age span, ranging from experienced middle-aged and elderly growers to young new farmers. For example, growers aged 40 – 60 may account for a large proportion. They usually have rich planting experience, but they may be relatively slow to accept new technologies and new marketing methods. Some young growers under the age of 30 are better at using new media and online service platforms for sales and promotion.

Level of education: The education level of growers is uneven. Some growers have received junior high school or high school education, and some growers also have received higher education. Growers with higher education are often more likely to accept new planting techniques and management concepts, and are more likely to use online service platforms to expand sales channels.

Strawberry growers' understanding and using frequency of various network service platforms (such as e-commerce platforms, agricultural information platforms and social platforms)

As can be seen from the Fig. 1 – Fig. 2, strawberry growers mainly use JD.com, Pinduoduo, Taobao and Weibo platforms. Among them, Pinduoduo platform has the highest usage ratio, accounting for 35.36%, followed by Taobao platform, accounting for 32.8%, and other platform accounts for 3.24%. It shows that e-commerce platforms and social platforms are the most commonly used network platforms for strawberry growers, while the usage ratio of agricultural information platforms and other platforms is relatively low.

Therefore, we need to strengthen the construction and management of e-commerce platforms^[8], reduce platform fees, and improve after-sales service quality, thereby providing better sales channels for growers. The content quality and customer service of social platforms should be optimized, so as to improve growers' brand promotion effect and customer satisfaction. It is necessary to perfect the interface design and function of agricultural information platforms, improve the accuracy and practicability of information, increase interaction, and provide better information services for growers. We should encourage and support the development of other platforms to provide strawberry growers with more choices and opportunities.

Mechanism analysis of the influence of network service platforms on strawberry growers' income

Reducing information asymmetry Providing comprehensive market information: Network service platforms can provide rich market information for strawberry growers in time, including the price trend, market demand dynamics and main sales areas of strawberries in various places. For example, some agricultural product trading platforms will update the wholesale price and retail price of strawberries in real time, and growers can understand the current market conditions through this information, reasonably arrange the planting scale and sales time, and avoid blind production and low-price sales caused by poor information^[3]. They can promote direct docking between supply and demand sides. New media platforms, such as social software and e-commerce platforms for agricultural products, allow strawberry growers to communicate and trade directly with consumers and buyers. Growers can display their strawberry products on the platforms, and introduce the planting process and characteristics, thereby attracting potential customers. Meanwhile, consumers and buyers can also directly put forward demands and feedback opinions to growers through the platforms, so as to achieve accurate docking between the supply and demand sides, reduce intermediate links and decrease transaction costs caused by information asymmetry^[4]. The platforms can strengthen industry communication and cooperation. Strawberry growers can join various agricultural communities, forums and industry associations through network service platforms, and exchange and cooperate with other growers, experts and schol-

ars, business representatives, *etc.*

Increasing the added value of products Creating distinctive brands: Network service platforms can excavate the unique quality of strawberries and the advantages of planting regional characteristics or planting methods, and give strawberries a recognizable brand name and image. For example, emphasizing organic cultivation, green pollution-free, unique climate and soil conditions of specific producing areas can let consumers quickly identify and remember brands.

Brand promotion and advertising: New media platforms can be used to promote brands. We can show the growing environment, picking process and quality advantages of strawberries on WeChat platforms such as WeChat official account, Weibo and Tik Tok by taking beautiful pictures and videos of strawberries. Online celebrities can be invited to conduct live streaming sales to enhance brand awareness and reputation. Strawberry culture festival and other activities can be also organized to attract consumers' participation and further promote strawberry brands.

Graded packaging: According to the size, color and sweetness of strawberries, they are packaged in different grades to meet the needs of different consumers. High-end packaging can provide selected high-quality strawberries for consumers who pursue quality, while ordinary packaging can meet the needs of the mass consumer market.

Promoting Network Service Platforms Has a Positive Impact on Strawberry Growers' Income

Strengthening growers' training and education

Developing training of new media skills^[9]: Strawberry growers should be organized to participate in training on the use of new media platforms, including how to use social platforms for publicity and promotion, how to open stores and operate on e-commerce platforms, and how to carry out live broadcasts. It is necessary to improve the familiarity and ability of growers to use new media tools. Providing agricultural techniques and market information training: Combining the information resources provided by the network service platform, we will provide strawberry planting technique training for growers, including introduction of new varieties, pest control and scientific fertilization. Meanwhile, explaining market information such as market dynamic analysis and consumer demand trend can help growers make more informed production decisions.

Improving the construction of network service platforms

Optimizing the function of e-commerce platforms: It is necessary to improve user' experience of e-commerce platforms, simplify the transaction process, and ensure payment security. The construction of logistics distribution systems should be strengthened to improve distribution efficiency and service quality and ensure that strawberries are delivered to consumers fresh. Enriching the content of agricultural information service platforms: Continuously updating strawberry planting techniques, market conditions, policies

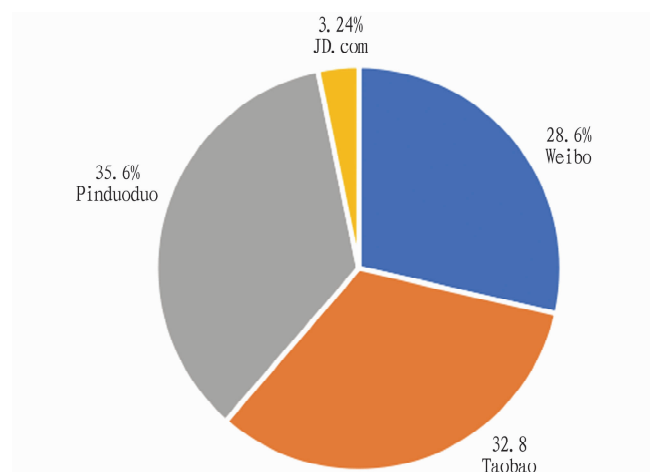


Fig. 1 Network platforms used by growers

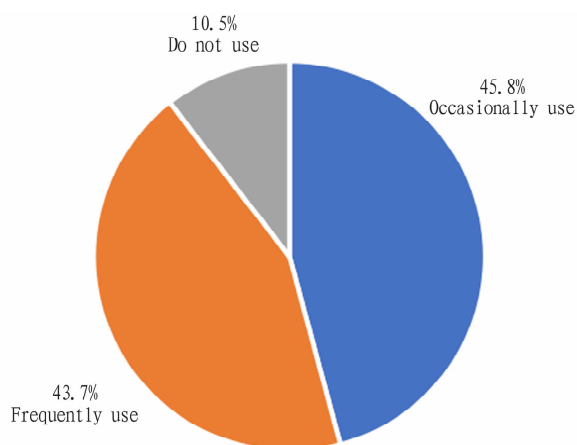


Fig. 2 Frequency of farmers' use of network service platforms

and regulations and other information can provide comprehensive, accurate and timely information services for growers. Expert online consultation services can be established to answer the problems encountered by growers in the production process. Expanding marketing channels of social platforms; It is necessary to encourage social platforms to develop marketing tools and functions for agricultural products, such as special recommendation of agricultural products and social group buying. We should support growers to establish long-term and stable relationships with consumers through social platforms to improve customer loyalty.

Strengthening policy support and guidance

Introducing support policies; Government departments can introduce support policies for strawberry growers to use online

service platforms, such as subsidies for e-commerce platforms, subsidies for logistics costs, and incentives for new media marketing, so as to reduce growers' operating costs. Strengthening infrastructure construction; Increasing investment in network infrastructure construction in rural areas and improving network coverage and network speed can provide good hardware conditions for growers to use network service platforms. Establishing demonstration projects; The government can choose some strawberry planting areas to establish new media application demonstration projects^[10], show the effect of network service platforms on increasing farmers' income, and guide more growers to actively participate.

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