

Research on Influencing Factors of Offline Fresh E-commerce Sales Intention Under the Background of Digital Economy

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Abstract. Under the background of digital economy, China's industries and Internet industries have also been further integrated. The e-commerce industry has achieved leapfrog development, and the proportion of agricultural products in e-commerce sales is increasing. The characteristics of fresh melons and fruits, such as short preservation period, easy to rot and high requirements for timeliness, restrict the development of e-commerce to a certain extent. Based on the field survey data of 110 silver melon growers in daguanying village, Weifang City, this paper analyzes the willingness and influencing factors of silver melon growers to participate in online sales. The results show that the growers have installed broadband, rich online shopping experience, large planting area, and the online sales price of silver melon is higher than that of offline, which has a positive impact on the online sales intention of silver melon growers, while the planting time has a negative impact on the online sales intention of silver melon growers. Finally, from the three aspects of growers' own situation, characteristics of silver melon industry and infrastructure construction, this paper puts forward countermeasures to improve growers' own literacy, enrich growers' theoretical knowledge and practical experience, cultivate e-commerce talents and establish high-quality silver melon demonstration village.

Keywords: Silver melon growers; Online sales intention; influence factor

1 INTRODUCTION

With the development of digital economy and the advent of the Internet era, e-commerce has developed rapidly and gradually developed from urban to rural areas. However, agricultural products have not been driven and developed rapidly in the early stage of e-commerce development. Most of the local industries in Qingzhou are traditional agriculture, and the development of e-commerce of agricultural products is relatively slow. No. 1 central document emerge in an endless stream from 2015. In 2021, the Central Document No. 1 also proposed that rural consumption should be promoted in an all-round way, and the three level rural logistics

system should be further improved, so as to further promote the development of e-commerce to the countryside and produce farm products, and promote effective docking between urban and rural production and consumption. The characteristics of fresh melon and fruit agricultural products, such as short preservation period, easy to rot and high requirements for timeliness, restrict the development of e-commerce to a certain extent. On the one hand, the development of e-commerce of fresh agricultural products is inseparable from the active participation of growers. Understanding the willingness and influencing factors of growers to use e-commerce to sell agricultural products is the key to promote the development of e-commerce of agricultural products; On the other hand, online sales of fresh agricultural products provide consumers with a variety of purchase channels for purchasing fresh agricultural products and provide convenience for consumers. Based on the above background, as one of the fresh melon and fruit agricultural products, it is important to study the influencing factors of silver melon growers' online sales intention.

2 RESEARCH STATUS AT HOME AND ABROAD

2.1 Research status abroad

M. Mahdi roghanizad, derrick J. Neufeld (2000) believed that the development trend of e-commerce for agricultural products should rise steadily, and the state should give corresponding policy subsidies and financial support to provide economic foundation for the development of e-commerce and vigorously develop the infrastructure construction related to e-commerce [22]. Jieshuang Wang (2005) summarized the author's experience in the construction of rural e-commerce, discussed the current situation of the development of rural e-commerce in China, put forward suggestions for the development of rural e-commerce according to the current situation, put forward the problems existing in farmers' use of e-commerce system and the outside world to help the development of rural e-commerce, and discussed the aspects that need to be improved in the future development of rural e-commerce in China, And put forward relevant suggestions [23]. Ping Gong (2019) believes that how to give play to the openness and fairness of the Internet and promote the fuller connection between farmers and the market, farmers and consumers is a major issue related to the national economy and the people's livelihood [24]. Jieying Miao (2020) studied the influencing factors of the development of cold chain logistics of agricultural products, and proposed that it is necessary for relevant departments to build an information sharing platform, improve infrastructure construction, improve relevant laws, regulations and logistics system, and provide external guarantee for cold chain logistics [25]. Ming Zhou (2020) believes that e-commerce has formed a huge service system and complete operation mode, which not only promotes the economic development of many industries, but also provides convenience for people's daily life. Based on the previous experience, this paper makes a simple evaluation on the construction of e-commerce platform for agricultural products and puts forward some suggestions [27]. Xiaopeng Zhao (2020), based on the investigation of the circulation of fresh agricultural products such as fruits and vegetables, fresh meat, aquatic products, milk and eggs, studied the supply and demand of cold chain logistics of fresh agricultural products, analyzed the contradiction between supply and demand of cold chain logistics, and finally put forward a series of suggestions to solve the contradiction between supply and demand of logistics in combination with the existing cold chain logistics resources and the logistics demand of fresh agricultural products [26].

2.2 Domestic research status

Zhang Juntao (2001) proposed that the quality of channel relationship mainly has three dimensions: channel satisfaction, channel trust and channel commitment. Channel satisfaction and channel trust have a positive and significant impact on channel commitment; There are four main factors affecting the quality of channel relations: communication, adaptability, opportunism and sharing value [1]. Long Zhaohui (2005) believes that e-commerce platform can solve the poor sales and backlog of agricultural products caused by the lag of agricultural product information [3]. Yang Ming (2019) believes that the e-commerce platform for agricultural products provides a platform for farmers and buyers, and the offline transaction mode has been greatly improved. It is imperative for cities to vigorously develop e-commerce for agricultural products [12]. Li Bingyuan and so on (2019) agriculture is the foundation of national development. Agricultural products are the basic materials for protecting the livelihood of the people. In recent years, with the rapid development of Internet and e-commerce, the Internet plus agriculture, rural areas and farmers has also made rapid progress. All the traditional industrial chains of agriculture are urgently needed to be changed and innovating [13]. Ren Jiaou (2020) believes that the supermarket purchase intention of fresh agricultural products is still higher than the online shopping mode, the integrated e-commerce platform and vertical e-commerce platform are more popular, and the purchase frequency is lower than the actual needs of life [16]. Guo Jiaqi (2020) believes that rural e-commerce is one of the main ways to develop rural areas in the new era, and its development promotes farmers to return home to start businesses and find jobs nearby; Changing the slow circulation of rural agricultural products and promoting the upward movement of agricultural products is the key path to the development of rural economic transformation. The main purpose of developing rural e-commerce is to increase the income of farmers stably, and the active participation of farmers is the premise of its development [15]. Ren hang (2020) believes that agricultural growers should establish brand image and expand business scale; E-commerce platform should improve the logistics service ability and further expand the service scope; The government pays attention to training talents and helps agricultural enterprises connect with e-commerce enterprises [17]. Zhang Shaqi (2020) believes that consumers' purchase intention directly determines the development of e-commerce transactions. In the process of e-commerce development of fresh agricultural products, it is very important to deeply understand consumers' purchase intention [18]. Cao Yanning (2021) believes that eight factors, including network coverage, the soundness of cold chain logistics, the convenience of transportation, government policy support, capital investment, the number of e-commerce training, the planting scale of agricultural products and farmers' cognition of e-commerce of agricultural products, have a positive effect on Farmers' willingness to participate in e-commerce of agricultural products [19]. Tang Qijuan (2021) believes that e-commerce of agricultural products is an effective way for small farmers to connect the big market with modern agriculture. Infrastructure status, business scale, farmers' cognition of e-commerce and external support are important influencing factors for farmers to participate in e-commerce decision-making [20].

2.3 Review of research at home and abroad

To sum up, domestic and foreign scholars mainly study the development status, development mode and Development Countermeasures of e-commerce for fresh agricultural products e-commerce, or from the perspective of consumers' online purchase. There are few studies on how

many growers use e-commerce to sell fresh agricultural products online and growers' willingness to sell fresh agricultural products online. Through literature review, it is found that the research on e-commerce of fresh agricultural products in China is later than that in foreign countries. With the development of social economy and Internet, the research on e-commerce of fresh agricultural products in China is gradually increasing, but most of the research is ordinary agricultural products such as vegetables. There is less research on the development of e-commerce of fresh melon and fruit agricultural products. The requirements of fresh melon and fruit agricultural products on transportation conditions, packaging and quality are much higher than ordinary agricultural products. Silver melon belongs to fresh melon and fruit agricultural products. This paper will specifically study the online sales intention and influencing factors of silver melon growers in daguanying village, and provide practical suggestions and reference basis on how to improve the online sales intention of growers and online sales of other fresh melon and fruit agricultural products.

3 DATA SOURCES AND DESCRIPTIVE ANALYSIS OF ONLINE SALES INTENTION

3.1 Basic information of growers

After one week, 115 questionnaires were distributed to silver melon growers in daguanying village. Excluding 5 invalid questionnaires, 110 questionnaires were effectively recovered, with a questionnaire recovery rate of 95.7%.

3.2 Gender and age status

Among the 110 silver melon growers surveyed, there were 72 men, and the number of silver melon growers accounted for 65.5% of the sample; There are 38 women in total, accounting for 34.5% of the sample. The majority of silver melon growers are men, and the proportion of men and women is quite different. The number of people aged under 25, 30-35, 35-45, 45-55 and over 55 are 1, 21, 3, 77 and 8 respectively, with the proportion of 0.9%, 19.1%, 2.7%, 70% and 7.3% respectively. Most of the growers are 45-55 years old, mostly middle-aged and elderly, and tend to be aging.

3.3 Educational level

There are 37 silver melon growers with education level of primary school or below, accounting for 33.6% of the sample, 28 in technical secondary school, accounting for 25.5% of the sample, 25 in junior middle school, accounting for 22.7% of the sample, 12 in senior high school, accounting for 10.9% of the sample, and 8 in undergraduate, accounting for 7.3% of the sample. The proportion of primary school and below is the most, the proportion of undergraduate is the least, and the overall education level of silver melon growers is low.

3.4 Planting time and planting area

The proportion of people who have planted silver melon for a total of 6-4 years is 7.7%; The proportion of those who spent 3-6 years was 20%, and there were 22 people in total; The time of 6-10 years accounted for 48.2%, with a total of 53 people; More than 10 years accounted for 25.5%, a total of 28 people. The planting area of 1-3 Mu accounts for 18.2%, with a total of 20

people; The area of 3-5 Mu accounts for 43.6%, with a total of 48 people; The area of 5-10 Mu accounts for 27.3%, with a total of 30 people; The area of more than 10 mu accounts for 10.9%, with a total of 12 people. In the investigated samples, most of the planters have been planting for a long time and have a large planting area.

3.5 Online shopping experience

Among them, 52 growers often buy online, accounting for 47.3% of the sample; There are 54 growers who occasionally buy online, accounting for 49.1% of the sample; There are 4 growers who never buy online, accounting for 3.6% of the sample. Among the investigated silver melon growers, the number of regular online shopping and occasional online shopping accounts for the most, and they have rich experience in online shopping.

4 AN EMPIRICAL ANALYSIS OF ONLINE SALES INTENTION

4.1 Variable setting and model hypothesis of logistic regression model

This paper uses logistic regression model to analyze the influencing factors of silver melon growers' online sales intention. The binary logistic regression model in SPSS software is used for regression analysis. Whether the grower is willing to sell online is the explanatory variable. The explanatory variables include age (x1), education level (x2), broadband installation (x3), smartphone use (x4), online shopping experience frequency (x5), planting years (x6), planting scale (X7) Offline sales channel (x8), online sales price of YINGUA is higher than offline (x9), whether to join cooperative (X10).

(1) The situation of growers themselves: the older they are, the more they can't keep up with their work energy, the stronger the feeling of disobedience. Moreover, they need to help look after their grandchildren, and the weaker their willingness to sell online; The higher the education level, the more knowledge reserves, the higher the ability to accept new things, the more innovative the spirit, and the stronger the willingness to sell online; Broadband installation: planters install broadband at home, have a stable network environment, and have a stronger willingness to sell online; The use of smart phones, now most people are skilled in using smart phones, can communicate with sellers at any time, shorten the distance between merchants and consumers, and the stronger the willingness of online sales; The higher the frequency of online shopping, the richer the experience, the more information about e-commerce will be exposed, the more you know about e-commerce, and the stronger your willingness to sell online; For the planting time, the longer the silver melon is planted, the more it depends on the stable offline sales channels, and the weaker the online sales intention is; The larger the planting area, the more the number of silver melons. In order to prevent them from being sold, it is necessary to broaden the sales channels in time. Online sales is one of the sales channels, so the growers who have planted silver melons for many years have a stronger willingness to sell online.

(2) Characteristics of silver melon industry: offline sales channels, which have close contact with consumers, are relatively stable, while there are many unknown situations in online sales. Compared with being familiar with offline channels, they need to bear certain risks. For example, after an order is delivered, consumers are dissatisfied and want to return it, and the risks need to be borne by growers, Therefore, the weaker the willingness to sell online; The online sales price

of YINGUA is higher than that of offline, and the requirements for packaging and transportation are higher. Accordingly, the sales price will be increased and the profit margin will be large. Therefore, the willingness to sell online will be enhanced.

(3) Infrastructure construction: whether to join the silver melon cooperative or not. The silver melon cooperative has special technicians and its own fixed sales channels. Therefore, its willingness to sell online will be weakened.

Table 1. The meaning of variables in the model and descriptive statistical analysis

<i>Variable name</i>	<i>Variable interpretation</i>	<i>average value</i>	<i>Expected direction</i>
Age	Under 25 = 1, 25-35 = 2, 35-45 = 3, 45-55 = 4, over 55 = 5	3.64	Negative
Educational level	Undergraduate and above = 1, junior middle school = 2, technical secondary school = 3, senior high school = 4, primary school and below = 5	3.41	positive
Broadband installation	Installed = 1, not installed = 2	1.19	positive
Smartphone usage	Used = 1, not used = 2	1.10	positive
Onlineshopping frequency	Regular online shopping = 1, occasional online shopping = 2, never online shopping = 3	1.56	positive
Planting time	More than ten years = 1, six to ten years = 2, three to six years = 3, one to three years = 4	2.07	positive
Offline sales channels	1-3mu = 1, 3-5mu = 2, 5-10mu = 3, more than 10mu = 4	2.31	positive
The price of silver melon online is higher than that offline	Very disagree = 1, disagree = 2, general = 3, agree = 4, fully agree = 5	1.85	Negative
Participation in cooperatives	Yes = 1, no = 2	3.96	positive
Are you willing to sell online	Unwilling = 0, willing = 1	1.84	Negative

(4) Table 1 is the meaning and statistical analysis of the variables in the model. It can be seen from the table that the variable names are respectively Age、Educational level、Broadband installation、Smartphone usage、Onlineshopping frequency、Planting time、Offline sales channels、The price of silver melon online is higher than that offline、Participation in cooperatives、Are you willing to sell online. Specific descriptive results are shown above.

4.2 Logistic regression analysis results

In this paper, SPSS statistical analysis software is used to conduct logistic regression analysis on the basic data of 110 silver melon growers investigated, summarize the factors affecting the online sales of silver melon growers in daguanying, Weifang, and obtain the coefficients and P values of 10 explanatory variables respectively. According to the significance test level, a total of 5 significant variables are obtained.

4.3 The impact of broadband installation and smartphone use on online sales intention

From the survey data, the larger the proportion of seafood farmers who have installed broadband who are willing to sell online. It can be seen that online sales intention is affected by broadband installation. Because the event of installing broadband itself can reflect that farmers are willing to access the Internet to a certain extent. Farmers who install broadband are more likely to access e-commerce than farmers who do not install broadband

4.4 Analysis of model results

(1) Situation of silver melon growers

According to the analysis results, the P values of age, education and smartphone use of silver melon growers are greater than 0.05, so it has no significant impact on the willingness of silver melon growers to sell silver melons online, but the p value of planting time is 0.036, less than the significant level of 0.05. It can be seen that planting time has a very significant impact on the willingness of online sales, including broadband installation, online shopping experience. The P values of the three variables of planting area are 0.075, 0.085 and 0.059 respectively, which are less than the significant level of 0.1. It can be seen that it has a significant impact on it, and the planting area has the greatest impact, because the more planting area, the more you want to expand sales channels, the stronger your online sales willingness, which is consistent with the above expectations; The higher the frequency of online shopping experience, the more you know about e-commerce and the stronger your willingness to sell online, which is consistent with the above expectations; Growers who install broadband at home have a stable network environment and stronger willingness to sell online, which is in line with the above expectations. The planting time coefficient is negative, which is negatively correlated with the online sales intention, which is inconsistent with the previous expected direction. Because the longer the silver melon is planted, the thinking may form a fixed mode. Because offline sales have been adopted all the time, they are more willing to continue to use stable offline channels to sell silver melons, so the weaker the online sales intention.

(2) Characteristics of silver melon industry

In the variables of silver melon planting industry, the significance of silver melon online sales price higher than offline sales price is 0.081, lower than the significance level of 0.1, which has a significant impact on growers' online sales, while silver melon offline sales channels, scattered buyers and high transportation conditions have no significant impact on it, and the significance test has not reached 10%. Among the significant variables, Yinhua online sales price is higher than offline sales price, which has a positive impact on online sales intention, which is consistent with expectations. Due to the strong seasonality of silver melon, the selling price at the initial stage of listing is high, coupled with additional costs such as packaging, the profit of online sales is sufficient and the willingness of online sales is strong.

(3) Infrastructure construction

According to the results, the significance of whether to join the cooperative is 0.149, which is greater than the significant level of 0.1, so it has no significant impact on the online sales intention of growers. Therefore, it can be seen that the online sales intention of growers will not change significantly with whether to join the cooperative. Through field visits, it is learned that

there are special silver melon growers in daguanying, as well as silver melon Industrial Technology Research Institute and silver melon research institute.

5 CONCLUSIONS

Using the methods of questionnaire, interview, descriptive analysis and binomial logistic regression analysis, this paper takes 110 silver melon growers in daguanying, Weifang as the research object, and analyzes the growers' own situation, the characteristics of silver melon industry and infrastructure construction. After analysis, the growers have installed broadband, rich experience in online shopping, large planting area The higher online sales price of silver melon than offline has a positive impact on the online sales intention of silver melon growers, while the longer the planting time has a negative impact on the online sales intention of silver melon growers.

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