Original Research Article

Research on the Influencing Factors of the E-commerce Adoption Behavior of New Agricultural Business Entities under the TAM Model

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Abstract: Based on the theoretical model of technology acceptance, this paper uses 372 questionnaire data to explore the influencing factors of the e-commerce adoption behavior of new agricultural business entities. The results show that: (1) Among the factors affecting the e-commerce adoption behavior of new agricultural business entities, perceived usefulness has the strongest impact, followed by perceived ease of use, and its standardized impact path coefficients are 0.81 and 0.20, respectively; (2) Perceived ease of use Usability not only positively affects the e-commerce adoption attitude of new agricultural business entities, but also positively affects the perceived usefulness of new agricultural business entities; (3) The e-commerce adoption attitude of new agricultural business entities positively affects their adoption behavior. Therefore, this paper puts forward relevant suggestions to improve the willingness of new agricultural business entities to adopt e-commerce, and then guide the sustainable development of e-commerce platforms.

Keywords: New agricultural business entities; Technology acceptance model; E-commerce adoption;

Influencing factors.

1. Introduction

At present, with the rapid development of modern information technology such as “Internet plus” and big data, and the gradual improvement of communication and logistics infrastructure, the scale of rural e-commerce is increasing. As a new business model born in the era of digital technology development, live streaming e-commerce can solve the problem of information exchange deficiency in previous e-commerce models, reduce the asymmetry of online transaction information, improve users' online shopping experience, promote the connection between agricultural product production and sales, effectively help rural areas develop new agricultural momentum, accelerate the organic integration of small farmers and modern agriculture, and have great significance in comprehensively assisting rural revitalization. Moreover, since the outbreak of the epidemic, farmers and new agricultural operators have actively utilized online e-commerce platforms to carry out agricultural product sales activities through live streaming sales, short videos, and other means. According to the 2020 national online retail market development data from the Ministry of Commerce, the total online retail sales of physical goods in China reached 9.76 trillion yuan, a year-on-year increase of 14.8%. It can be seen that agricultural e-commerce has become an important channel for agricultural product sales, and its impact on agricultural production and operation is becoming increasingly significant. At present, multiple scholars have conducted extensive research on the advantages of agricultural e-commerce. They found that agricultural product e-commerce can control agricultural production risks and market risks (Zhou Yueshu et al., 2020), increase farmers' income (Zeng Yiwu et al., 2018), expand the scale of agricultural land management by new agricultural operators (Li Ning et al., 2021), positively promote the growth of farmers' entrepreneurship (Su Lanlan et al., 2020), and promote brand building of new agricultural operators (Han Xudong et al., 2018).

However, even so, the new agricultural business entities that adopt agricultural product e-commerce are still only a part. A study has found that previous work experiences of farmers can inhibit their adoption behavior

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in e-commerce, while entrepreneurial and training experiences can promote their adoption behavior (Zeng et al., 2019). In addition, factors such as industry pressure, livelihood pressure, technology expectations (Cai Bo et al., 2021), and subjective norms (Guo Jinyong et al., 2019) can all affect the e-commerce adoption behavior of new agricultural operators. Although the country has repeatedly pointed out in policy documents to actively promote the development of agricultural e-commerce, it still faces problems such as poor infrastructure, incomplete logistics chains, and lax market supervision at this stage. Therefore, in this context, an urgent problem arises: what mainly affects the e-commerce adoption behavior of new agricultural operators? How do these factors affect their adoption behavior?

Although research on new agricultural management entities provides a solid theoretical foundation for this article, there are still shortcomings: firstly, previous studies have mostly focused on ordinary farmers, agricultural enterprises, farmer cooperatives and other agricultural producers and operators, with few studies starting from the perspective of new agricultural management entities; Secondly, most previous studies have only identified some influencing factors without delving deeper into the underlying mechanisms. Therefore, if we can further focus on the level of new agricultural management entities and conduct deeper discussions on the above-mentioned issues, it will not only provide theoretical basis for improving the adoption behavior of new agricultural management entities in e-commerce, but also help the government formulate more effective, accurate, and realistic policies, promote the development of rural e-commerce, and sort out the factors affecting the adoption behavior of new agricultural management entities in e-commerce, Under the guidance of policies, we aim to gain attention from various sectors of society and provide a favorable environment for the sustainable and healthy development of rural e-commerce.

Therefore, this article takes the new agricultural management entities as the starting point, and through sorting out the theoretical foundation and previous scholars' research, conducts empirical analysis based on the TAM model to deeply explore the e-commerce adoption behavior mechanism of the new agricultural management entities.

2. Literature Review

2.1 Agricultural Product E-Commerce

The rural e-commerce model with Chinese characteristics is rooted in rural areas in the wave of e-commerce development, forming a new model that serves agriculture, rural areas, and farmers (Zhang Zhengrong et al., 2019). On the one hand, agricultural product e-commerce has enabled urban goods to go to the countryside, enriched farmers' consumption choices, increased their willingness to consume, and stimulated the consumption potential of rural areas. On the other hand, agricultural e-commerce also enables rural agricultural products to be sold directly to cities, increasing farmers' income (Luisa et al., 2013). Many scholars have found that compared to physical retail, agricultural e-commerce has advantages such as greater convenience, lower operating costs (Horrigan, 2008), and diversified product types and channels (Rohm et al., 2004). However, at the same time, the characteristics of the Internet also make consumers face higher perceived risks when shopping online, such as product risks, psychological pressure caused by information asymmetry (Horrigan, 2008), and transaction costs for returns and refunds.

In recent years, academic research on agricultural product e-commerce has mainly focused on two aspects: first, the adoption of agricultural product e-commerce by farmers. Scholars have found that mass media, organizational channels (Li Xiaojing et al., 2019), online coverage, online shopping experience, and the presence of village officials in society or at home, as well as the number of non-agricultural employees (Lin Haiying et al., 2019), are all important factors that affect the sales behavior of farmers in e-commerce. The second aspect is the promotion of agricultural product e-commerce for rural economic development. Scholars have found that agricultural e-commerce can not only improve the income level of farmers by reducing transaction costs (Zeng Debin et al., 2020), but also improve the current situation of information congestion and sales channels for

farmers (Zheng Chenyu et al., 2018).

2.2 E-commerce Adoption of New Agricultural Management Entities

The "new agricultural management subject" was first proposed in the No. 1 central document in 2007. At first, it was a systematic definition of the concept of agricultural modernization, and then it was extended from the concept of modern agriculture. The concept of "new agricultural management entities" gradually improved after 2012. At present, most scholars generally believe that the new types of agricultural management entities mainly include four types, namely professional large households, farmer cooperatives, family farms, and agricultural leading enterprises. Many scholars have conducted research on new agricultural management entities and found that they can increase the sales volume of agricultural products (Cook, 1995). Compared to ordinary farmers, new agricultural management entities have higher levels of scale, organization, and socialization, can effectively reduce operating costs, have higher efficiency (Ashok, 2011), and have better resources and conditions to explore new agricultural development methods compared to ordinary farmers, It is the main force in promoting the integration and development of rural industries (Chen Lu et al., 2019).

There are many studies in the academic community on the willingness of new agricultural operators to adopt e-commerce. Scholars have found that many rural e-commerce platforms generally exhibit characteristics such as relatively high education levels, youthfulness, and short entry time (Lu Zheng et al., 2015). Scholars have also found that regional logistics, agricultural product quality, online payment (Song Mengqiu et al., 2014), infrastructure, security and privacy, third-party e-commerce services, operating costs, e-commerce training, etc. (Hou Zhenxing, 2018) can all affect the willingness of new agricultural operators to adopt e-commerce. In addition, different categories of new agricultural operators have different cognitive behaviors in e-commerce. For example, the scale of operation will significantly affect the adoption behavior of family farms and professional large households in e-commerce, while farmer cooperatives and agricultural leading enterprises are exactly the opposite (Yao Zhi, 2017).

2.3 Technical Acceptance Model

The TAM (Technology Acceptance Model) model, also known as the Technology Acceptance Model, was proposed by Davis in 1989 when he applied the theory of rational behavior to study user acceptance of information systems. It mainly consists of two determining factors: Perceived Usefulness and Perceived Ease of Use. This model suggests that external variables can have an impact on the perceived usefulness and ease of use of technology by users, which in turn affects their attitude towards adopting the technology and ultimately affects their actual adoption behavior (Davis and Venkatesh, 1996; Venkatesh et al., 2003).

In recent years, the TAM model has been widely adopted by scholars in the field of management due to its concise structure and strong ability to explain to users. Scholars have used the TAM model to study the impact of consumer perception of cross-border e-commerce platforms on overseas purchasing attitudes. They found that perceived usefulness and perceived ease of use have a significant positive impact on attitudes, while perceived risk has no significant impact on attitudes (Chai Shousheng et al., 2019). Some scholars have also used the TAM model to study the adoption behavior of farmers in e-commerce, and found that it is also applicable and pointed out that subjective norms have a positive impact on the adoption behavior of farmers in e-commerce (Liu Shuang, 2013). In addition, many scholars have introduced different variables into the TAM model to study the adoption behavior of farmers in e-commerce, such as perceived risk (Pavlou, 2003; Li et al., 2008), subjective norms (Paul et al., 2010; Qiao Yan et al., 2016), and network externalities (Pan Yanjie et al., 2009; Guo Jinyong et al., 2019), continuously enriching the model.

3. Research Hypotheses and Models

The technology acceptance model is a widely recognized classic model in the academic community for studying individual adoption behavior of new technologies (Guo Jinyong et al., 2019). Therefore, based on the

TAM model, this article constructs a research model as shown in Figure 1. Among them, perceived usefulness refers to the degree to which new agricultural operators believe that agricultural product e-commerce is helpful, and perceived ease of use refers to whether new agricultural operators believe that agricultural product e-commerce is convenient for their use. In addition, based on previous research, this article sets external control variables such as age, gender, education level, time spent in the e-commerce industry (Lu Zheng et al., 2015), and type of operation (Yao Zhi et al., 2017) to analyze the influencing factors of e-commerce adoption behavior of new agricultural operators, in order to reduce model estimation bias.

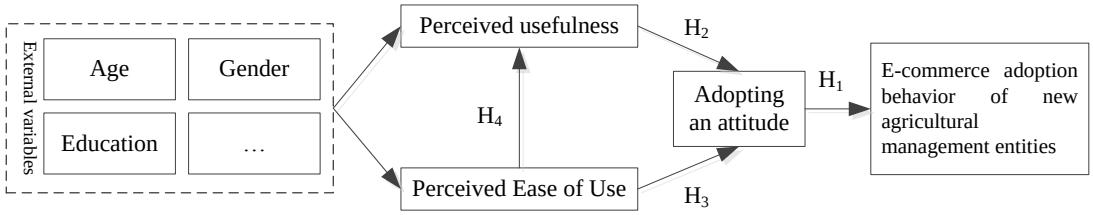

Figure 1 Intention Model for E-commerce Adoption Behavior of New Agricultural Business Entities Based on TAM Model.

3.1 Attitudes and Behaviors Towards Adoption

The Technology Acceptance Model (TAM) proposed by Davis (1989) suggests that when a new thing is presented to users, both perceived usefulness and perceived ease of use will have an impact on the user's adoption attitude, ultimately affecting their adoption behavior. Many scholars, based on this theory, have confirmed the positive impact of adoption attitude on adoption behavior when studying the willingness of the new generation of migrant workers to use information channels (Tao Jianjie, 2013), the influencing factors of campus consumer finance installment product selection (Xie Hui et al., 2020), and the influencing factors of B2C online consumption behavior among college students (Wu Yang, 2019). Similarly, in the field of Agricultural Bank of China, many studies have also confirmed that adoption attitudes have a positive impact on adoption behavior. (Liu Shuang, 2013; Chai Shousheng et al., 2019) Therefore, this article believes that the adoption attitude of new agricultural operators towards e-commerce platforms will have a positive impact on their adoption behavior towards e-commerce. Based on this, this article proposes the following assumptions.

H1: The adoption attitude of new agricultural operators towards e-commerce technology has a positive impact on their e-commerce adoption behavior.

3.2 Perceived Usefulness and Adoption Attitude

In the context of this study, perceived usefulness refers to the benefits that new agricultural operators subjectively believe can be brought by adopting agricultural product e-commerce. When studying the impact of perceived usefulness on the adoption behavior of farmers in e-commerce, some scholars introduced two external variables: accessibility and experience. The results showed that perceived usefulness played a significant mediating role, and accessibility and experience also played an important role (Wang Yanling et al., 2020). After analyzing data on the willingness of farmers to adopt e-commerce sales in 54 counties in Jiangxi Province, scholars have found that the adoption of e-commerce by farmers is significantly influenced by the perceived usefulness of e-commerce technology. The stronger the perceived usefulness of e-commerce technology by farmers, the higher their willingness to adopt e-commerce sales (Wang Xingdong et al., 2021). For new agricultural operators, the question they are concerned about is whether using e-commerce platforms for sales can cost less and achieve higher profits. Only by making new agricultural operators truly feel the usefulness of e-commerce platforms can they have an impact on their adoption attitude. Based on this, this article proposes the following assumptions.

H2: Perceived usefulness has a positive impact on the adoption attitude of new agricultural operators

towards e-commerce technology. The more helpful they feel, the more positive their attitude becomes.

3.3 Perceived Ease of Use and Adoption Attitude

In the context of this study, perceived ease of use refers to whether new agricultural operators consider agricultural product e-commerce to be convenient for their use. Scholars have found that perceived ease of use directly affects the attitude of farmers towards adopting e-commerce platforms, which in turn affects their behavioral intentions (Patel et al., 2016). Some scholars have also introduced two external variables, network externalities and subjective norms, into the study of the adoption behavior mechanism of agricultural product e-commerce by farmers. The results show that both network externalities and subjective norms have a significant positive impact on perceived ease of use, and perceived ease of use also has a significant positive impact on adoption attitude. To encourage more new agricultural operators to adopt e-commerce, it is necessary to increase their enthusiasm for e-commerce. Therefore, simple and easy to learn operating methods, well-developed logistics systems, and matching software and hardware facilities are essential. Based on this, this article proposes the following assumptions.

H3: Perceived ease of use has a positive impact on the adoption attitude of new agricultural operators towards e-commerce technology. The more convenient they feel to use, the more positive their attitude is.

3.4 Perceived Ease of Use and Perceived Usefulness

Perceived ease of use not only affects the adoption attitude of new agricultural management entities, but also affects their perceived usefulness. Scholars have found that perceived ease of use indirectly affects user adoption attitudes through perceived usefulness (Wangpipatwong et al., 2018), and the impact of both on user adoption attitudes is not independent (Al adawi et al., 2005). When new agricultural operators recognize that new technologies are easier to learn and master, their perceived usefulness of the technology will be enhanced, At the same time, the attitude towards adopting new technologies will also be more positive (Igbaria et al., 1997; Sorebo et al., 2008). Based on this, this article proposes the following assumptions.

H4: Perceived ease of use has a positive impact on the perceived usefulness of e-commerce technology by new agricultural operators.

4. Research Design

4.1 Questionnaire Design and Distribution

This study collected data using a questionnaire survey method, which consists of two parts: the first part is the basic information of the survey subjects, including gender, age, education level, business type, and duration of engaging in e-commerce operations. The second part is to study the measurement terms of each variable in the model. On the basis of combining previous research and referring to previous studies on the TAM model (Tian Xiao et al., 2020), this questionnaire adopts a five level Likert scale format, with 1-5 representing “completely disagree”, “relatively disagree”, “general”, “relatively agree”, and “completely agree”. During the questionnaire design process, suggestions from mentors and experts were consulted multiple times, and after further revisions and improvements, 40 participants were invited for testing on a small scale. Subsequently, the questionnaire was finally modified through discussion of items with the participants. The questionnaire was distributed online through Wenjuanxing, with a survey period of November 2021. A total of 401 questionnaires were collected. After excluding invalid questionnaires (such as short response time, inconsistent responses, and too many identical choices), 372 valid questionnaires were collected, with an effective response rate of 92.77%.

4.2 Sample Descriptive Statistics

From the sample characteristics (Table 1), in terms of gender, there were 206 males, accounting for 55.38%, and 166 females, accounting for 44.62%, among the surveyed subjects, with males slightly higher than females; In terms of age, the highest proportion is between 21-30 years old, accounting for 29.84%, followed by 31-40

years old, accounting for 24.73%. This is due to the strong support of the country for rural innovation and entrepreneurship in recent years, which has led to rapid development of the rural economy. As a result, many young people who have just graduated from universities have started returning to their hometowns to start businesses and set up family farms, turning the main force of rural economic development into young people; In terms of educational background, 80.11% of them are high school graduates or above, with the majority having a certain level of education. This is because proficiency in agricultural e-commerce requires strong learning and organizational coordination abilities, and individuals with higher education often have these advantages, which meets the needs of sample research. From the perspective of business types, the proportion of professional large households, farmer cooperatives, family farms, and rural leading enterprises is relatively uniform, which can comprehensively reflect the common characteristics of new agricultural management entities. Therefore, this sample has good representativeness; From the perspective of time spent in the e-commerce industry, 87.1% of respondents have experience in e-commerce, which is roughly equal to the proportion of those who are optimistic about the future development of agricultural e-commerce (86.29%). Therefore, the survey data meets the research needs and has good representativeness.

Table 1 Basic characteristics of samples.

project	Question items	Number of people	Proportion (%)	Accumulated proportion (%)
Gender	male	206	55.38	55.38
	female	166	44.62	100
Age	Under 20 years old	23	6.18	6.18
	21-30 years old	111	29.84	36.02
	31-40 years old	94	25.27	61.29
	41-50 years old	92	24.73	86.02
	Over 51 years old	52	13.98	100
educational background	Junior high school and below	74	19.89	19.89
	High school/vocational school/vocational school	96	25.81	45.70
	College/Vocational Education	110	29.57	75.27
	Undergraduate or above	92	24.73	100
Business type	Professional tycoons	75	20.16	20.16
	farmers' cooperative	91	24.46	44.62
	Family Farm	71	19.09	63.71
	Agricultural leading enterprises	131	35.22	98.93
	other	4	1.08	100
Engage in e-commerce Industry time	nothing	48	12.9	12.9
	0-1 years	124	33.33	46.23
	1-2 years	78	20.97	67.20
	2-3 years	89	23.39	90.59
	Over 3 years	35	9.41	100
Are you optimistic about the development of agricultural e-commerce	Keep an eye on it	321	86.29	86.29
	Not optimistic	51	13.71	100

5. Data Analysis and Hypothesis Testing

5.1 Reliability and Validity

The reliability and validity of the questionnaire data were tested, and the results are shown in Table 2. The α values of the four latent variables are 0.889, 0.876, 0.872, and 0.867, all greater than 0.8. The overall Cronbach's α value is 0.960 and greater than 0.9, which meets the reliability standard, indicating that the questionnaire data has high reliability. The factor loadings of each measurement item are all greater than 0.8,

indicating that the questions corresponding to each latent variable have high representativeness. In addition, the AVE of each latent variable is greater than 0.7, and the combined reliability CR is greater than 0.9, indicating ideal convergent validity and high validity of the questionnaire data. The discriminant validity analysis table is shown in Table 3. The open root values of the diagonal AVE are all greater than the correlation coefficients outside the diagonal, indicating that different dimensions of the scale can be well distinguished.

Table 2 Reliability and validity test results.

Variables	Measurement items	Factor loading	Cronbach's α	CR	AVE
Perceived usefulness (PU)	PU1	0.885	0.889	0.923	0.751
	PU2	0.865			
	PU3	0.861			
	PU4	0.855			
Perceived Ease of Use (EU)	EU1	0.881	0.876	0.915	0.730
	EU2	0.848			
	EU3	0.847			
	EU4	0.841			
Adopting an attitude (ATU)	ATU1	0.900	0.872	0.922	0.797
	ATU2	0.895			
	ATU3	0.883			
Adoption behavior (AU)	AU1	0.895	0.867	0.919	0.790
	AU2	0.889			
	AU3	0.883			

Table 3 Differential validity analysis.

	Perceived usefulness	Perceived Ease of Use	Adopting an attitude	Adoption behavior
Perceived usefulness (PU)	0.867			0.889
Perceived Ease of Use (EU)	0.782**	0.854		
Adopting an attitude (ATU)	0.857**	0.791**	0.893	
Adoption behavior (AU)	0.866**	0.798**	0.854**	

Note: ** * At the 0.01 level (double tailed), the correlation is significant.*

Next, KMO and Bartlett's tests were performed on the measured variable data, and the results are shown in Table 4. The KMO value is 0.975, with an approximate chi square value of 4218.079 and a significance level of 0.000, indicating that the obtained sample data is suitable for factor analysis.

Table 4 KMO and Bartlett's test.

KMO sampling suitability quantity		0.975
Bartlett's sphericity test	Approximate chi square	4218.079
	degree of freedom	91
	Significance	0.000

5.2 Adaptability Testing

The AMOS software was used to test the model, and the model fitting indicators are shown in Table 5. As shown in the table, the ratio of chi square to degrees of freedom of the model is 1.403, which is less than the ideal value of 3. The RMSEA value is 0.033, which is less than the ideal value of 0.05. The GFI value is 0.962, which is greater than the ideal value of 0.9. The AGFI value is 0.945, which is greater than the ideal value of 0.9. The CFI value is 0.993, which is greater than the ideal value of 0.9. In summary, all the fitting indicators of the model have met the target requirements, indicating a high degree of fit between the questionnaire data and the

hypothetical model. That is, the model has good adaptability and can be used for the next step of path analysis.

Table 5 Model fitting results.

Fit indicators	Reference value	Inspection results
χ^2 / *df*	<3	1.403
RMSEA	<0.05	0.033
GFI	>0.9	0.962
AGFI	>0.9	0.945
CFI	>0.9	0.993

5.3 Hypothesis Testing and Result Analysis

Using AMOS software for analysis, the significance level and path coefficient are shown in Table 6. According to Table 6, the standardized path coefficient between adoption attitude and adoption behavior is 0.997, with a P-value less than 0.001, indicating a significant statistical difference. This indicates that the e-commerce adoption behavior of new agricultural operators becomes more frequent as their adoption attitude becomes more positive, indicating a significant positive correlation between adoption attitude and adoption behavior. Hypothesis H1 is validated. The standardized path coefficient between perceived usefulness and adoption attitude is 0.807, with a P-value less than 0.001, indicating a significant statistical difference. This indicates that the e-commerce adoption attitude of new agricultural operators becomes more positive with the increase of perceived usefulness, indicating a significant positive correlation between adoption attitude and perceived usefulness. Hypothesis H2 is validated. The standardized path coefficient between perceived ease of use and adoption attitude is 0.202, with a P-value of 0.005, which is less than 0.05. The statistical difference is significant, indicating that the e-commerce adoption attitude of new agricultural operators becomes more positive with the improvement of perceived ease of use. That is, there is a significant positive correlation between adoption attitude and perceived ease of use. Hypothesis H3 is verified. The path coefficient between perceived usefulness and perceived ease of use is 0.882, with a P-value less than 0.001, indicating a significant statistical difference. This indicates that the perceived usefulness of new agricultural operators increases with the improvement of perceived ease of use, indicating a significant positive correlation between perceived ease of use and perceived usefulness. Assuming H4 passes the test.

Table 6 Significance level and path coefficient table.

Path	Non standardization	S.E.	C.R.	P-value	Standardized path coefficient	Corresponding hypothesis
ATU→AU	1.029	0.054	19.164	***	0.997	H1
PU→ATU	0.821	0.083	9.832	***	0.807	H2
EU→ATU	0.195	0.070	2.793	0.005**	0.202	H3
EU→PU	0.839	0.056	15.056	***	0.882	H4

In summary, it can be concluded that the fitting index of the model meets the requirements, the adaptability is good, and all path coefficients have passed the significance level test. Therefore, the overall model and standardized path coefficient graph are obtained (Figure 2).

6. Research Conclusions and Inspirations

6.1 Research Conclusion

This article starts from the perspective of new agricultural management entities, using the technology acceptance model as the theoretical framework, introduces external variables such as age, gender, education

level, business type, and time spent in e-commerce, and constructs a factor model based on TAM theory for the willingness of new agricultural management entities to adopt e-commerce platforms. Through online distribution of questionnaires, data analysis was conducted using SPSS 26.0 software and AMOS 26.0 software on 372 successfully collected valid questionnaires to validate the four hypotheses proposed. The specific conclusion is as follows:

Firstly, the e-commerce adoption attitude of new agricultural operators has a positive impact on their e-commerce adoption behavior. The research results indicate that as long as new agricultural operators have a positive attitude towards e-commerce adoption, adoption behavior will occur, which is consistent with previous research findings. Secondly, perceived ease of use positively influences the adoption attitude of new agricultural operators towards e-commerce platforms, thereby influencing their e-commerce adoption behavior. The research results indicate that simple operating procedures, a sound logistics system, supporting network facilities, and convenient transportation conditions are several aspects that affect the perceived ease of use of e-commerce platforms by new agricultural operators. When new agricultural operators believe that they can achieve the above points after using e-commerce, it will improve their attitude towards e-commerce adoption. Thirdly, perceived usefulness positively influences the adoption attitude of new agricultural operators towards e-commerce platforms, thereby influencing their e-commerce adoption behavior. The research results indicate that increasing product sales, reducing buying and selling costs, increasing brand awareness, and lower operating costs are several aspects that affect the perceived usefulness of new agricultural operators towards e-commerce platforms. In addition, the standardized path coefficient (0.81) of perceived usefulness on the adoption attitude of new agricultural operators towards e-commerce is significantly higher than that of perceived ease of use (0.20). This means that compared to perceived ease of use, perceived usefulness has a greater impact on the adoption attitude of new agricultural operators towards e-commerce. Fourthly, perceived ease of use has a positive impact on the perceived usefulness of new agricultural management entities. The research results indicate that a concise and clear e-commerce platform interface and easy to learn operating methods can effectively enhance the positive attitude of new agricultural operators towards the platform, making them feel that the e-commerce platform can create more profits, reduce operating costs in the future, thereby increasing their willingness to accept e-commerce, and ultimately affecting adoption behavior.

6.2 Inspiration

The above research conclusions have certain implications for promoting the adoption of e-commerce platforms for new agricultural management entities:

Firstly, based on the conclusions of this study, it is necessary to increase the promotion of e-commerce, develop e-commerce platform promotion plans tailored to local economic conditions and existing resources, fully utilize public media to comprehensively popularize e-commerce knowledge, and create a good atmosphere for the sustainable development of new agricultural business entities. While promoting e-commerce technology, it is also necessary to promote the extension of the agricultural product internet industry chain, especially logistics, cold chain, etc. In terms of transportation and network signal coverage, through e-commerce platforms, help new agricultural operators increase sales of agricultural products, reduce operating costs, and quickly increase visibility. Secondly, while improving e-commerce infrastructure, we will strengthen the cultivation of new agricultural business entities, actively support the participation of returning college students, migrant workers, and others in e-commerce, and create a leading team of e-commerce talents. By relying on capable e-commerce service enterprises or professional training institutions, participants will be trained through centralized on-site training and one-on-one training for rural e-commerce service station owners. Multi channel training for e-commerce practitioners of new agricultural business entities. Finally, it is also possible to simplify the tedious steps of e-commerce operations, develop a simple and easy to understand e-commerce platform, and provide a more suitable and convenient e-commerce platform that is more compatible with the capabilities of new

agricultural management entities, in order to achieve better promotion effects.

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