The Characteristics and Mode Selection of Agricultural Product E-commerce Distribution Marketing

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Abstract:—In recent years, China's e-commerce market has become the largest in the world. E-commerce of agricultural products can solve the problems of many traditional marketing modes and bring great convenience. To study the e-commerce mode of agricultural products, the secondary indicator factors of the e-commerce mode of agricultural products are constructed, and the structural equation of 7 hidden factors and 30 observation factors is designed based on the structural equation. On the basis of the above procedures, a questionnaire on the selection of agricultural products e-commerce mode is designed. Through the calculation and analysis of the mode, 6 recessive variables and 27 observation indicators are determined. After the analysis of their relationship, the e-commerce mode selection strategy for agricultural products is finally proposed.

Key-Words: Agriculture products; E-commerce; Marketing characteristics; Mode
Received: March 8, 2022. Revised: November 4, 2022. Accepted: December 4, 2022. Published: December 15, 2022.

1. Introduction

Since China joined the WTO in 2001, the Chinese economy has faced many pressures and challenges in the process of keeping pace with the world economy. E-commerce is characterized by high efficiency and low consumption, thus it has developed rapidly in the process of globalization. At present, China is in a critical period of comprehensive upgrading and reform, therefore optimization and reform of industries is imperative. In this context, the development of agricultural products e-commerce (Electronic Commerce) needs to meet the requirements of market development. China has accelerated the construction of infrastructure, however, even after the roads are built, many remote rural areas are difficult to improve the visibility of local agricultural products and sell them. E-commerce can promote the agricultural product market by forming an industrial chain of agricultural products, thus the simultaneous development of agricultural product planting, storage, warehousing, transportation and other fields can be realized.

In 2018, China's online retail trading volume reached 9 trillion CNY (China Yuan), accounting for 18.4% of the total retail sales of consumer goods, of which the rural online retail sales reached 1.37 trillion CNY. E-commerce has become an important way to fight poverty. Under the guidance of the government and the Ministry of Commerce, e-commerce marketing mode of agricultural products has been promoted nationwide, [1-3]. In the "Double 11" event in 2018, the sales volume of rural e-commerce network was 27.59 billion CNY, and the main products included nuts, edible oil, milk, etc. With the continuous development of e-commerce, various e-commerce platforms and e-commerce modes emerge one after another. Under this background, how to choose a suitable e-commerce mode for agricultural products is an urgent problem to be solved, [4]. This research aims to solve this problem. In addition, the research takes e-commerce as a breakthrough to develop modern and information agriculture, so as to solve the issues relating to agriculture, rural areas and farmers in the process of urbanization.

2. Related Works

Global agricultural development is directly related to global food supply. Ensuring the normal operation and development of agriculture is the basis for human survival and social stability. Therefore, a large number of researchers are conducting research with the purpose of promoting the development of agriculture. Zhao J and his team members studied the preservation strategies of agricultural products and analyzed it from the physical, chemical and biological perspectives. They also analyzed the ordering and storage strategies of fresh agricultural products under the premise of limiting carbon emissions. They believed that in the context of the digital age, appropriate e-commerce models were needed to realize the common interests of consumers, farmers and dealers, [5]. At present, the development of e-commerce is very fast, and many industries are trying to conduct transactions in the form of e-commerce. As an industry relying on cross regional sales, agriculture has also received a lot of research in recent years focusing on the combination of agricultural product sales and e-commerce. You J with his team studied the cross-border e-commerce transactions of agricultural products in Sichuan, and believed that the long delivery time and high cost of cross-border trade hindered the development of e-commerce of agricultural products in this region. According to the research results, the current cross-border e-commerce trade of agricultural products in the region uses a single logistics method, and expanding new logistics methods may improve the problem, [6]. Liao et al. studied the theme of using key opinion leaders to promote online sales of agricultural products. They established an evolution model of sales promotion strategy and verified the effectiveness of the model through simulation, [7]. Liu and Kao's team studied the customer satisfaction of characteristic agricultural products in specific regions in online platform sales. They established the influencing factor model and verified the hypothesis of influencing factors. Finally, on the basis of this model, the author proposed a strategy to improve the online sales satisfaction of local agricultural products, which promoted the development of e-commerce of local agricultural products, [8]. Sun and Lei analyzed the development status of a pepper agricultural product, and summarized the problems in the development of this agricultural product in terms of multiple influencing factors, including brand effect, natural environment factors, e-commerce platform factors, e-commerce infrastructure factors, etc. According to the analysis results, an effective growth strategy for online sales was proposed, [9].

By analyzing the relevant literature on the combination of e-commerce and agricultural products, it is found that the research in this field is gradually getting more attention. However, a large number of studies are limited to specific regions or agricultural products, leading to the lack of universality. Therefore, this research attempts to build an e-commerce mode that can be applied to various regions and agricultural products by means of influencing factor analysis.

3. Research Design

Performance indicators of agricultural e-commerce modes are analyzed, and these indicators are used to evaluate and decide the choice of e-commerce mode. Factors influencing agricultural e-commerce modes are classified as internal and external variables and analyzed according to different attributes. The variables are analyzed with structural equation modeling. This model is also known as latent variable model or covariance structure model. The model enables the construction of hypothetical models based on assumptions and validates the correctness of the assumptions by collecting and analyzing variable data. The hypotheses that are not correct enough are modified based on the validation results to improve the model performance. The validation method is to test the difference between the true covariance of the sample and the theoretical covariance of the model, and the smaller the difference, the closer the model is to the actual situation. After the correct model is established, the correct e-commerce model for agricultural products is selected and suggested based on the model analysis results.

4. Agricultural Products E-commerce Mode

E-commerce mode is a modern marketing mode combining Internet technology and modern marketing concept, which combines the operation and distribution of the industrial chain. There are many classifications of e-commerce modes. E-commerce modes can be classified into B2B (Business to Business), B2C (Business to Consumer) and C2C (Consumer to Consumer) according to the nature of e-commerce economic entities. It can also be classified from other aspects, [10]. The e-commerce mode of agricultural products is a marketing mode of agricultural products based on the conventional e-commerce mode. It is a new mode based on efficiency and cost benefit distribution. In this mode, the efficiency of e-commerce is evaluated by time indicators, the benefits are evaluated by the income of the business entity, the responsibilities are evaluated by market risk, and the costs are evaluated by profit space and profit rate, [11-12]. The design of e-commerce mode for agricultural products takes into account the advantages of economic entities and the pattern of interest relations, reflecting the interest distribution relationship among various economies, as shown in Figure 1.

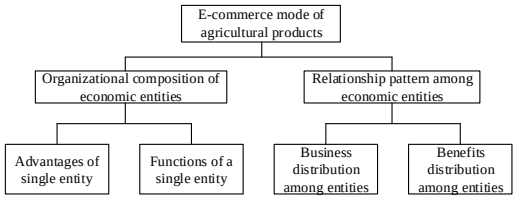

Figure 1 The relationship among economies in the agricultural E-commerce mode

When choosing the e-commerce mode of agricultural products, it is necessary to judge according to the main performance indicators of the mode, and select the appropriate mode according to its results. The main performance indicators are shown in Figure 2.

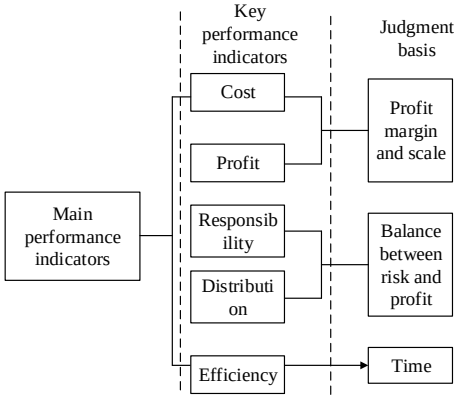

Figure 2 Performance indicators of agricultural products E-commerce mode

5. Analysis on the Constituent Factors of Agricultural Product E-commerce Mode

Due to the different environment and characteristics of different regions, the e-commerce operation modes required by different regions are also quite different. The corresponding cost control, operation mode and profit source are quite different as well, so there are many factors affecting the operation mode of e-commerce, [13]. Through the analysis of the characteristics of agricultural products e-commerce, several main influencing factors are sorted out, namely regional environment, platform, product, scale, capital and risk.

Regional environmental factors have the most significant impact on the choice of agricultural product e-commerce modes. There are great differences in consumption habits, consumption levels, logistics networks and consumption concepts in different regions. Even for the same business entity or the same product, the agricultural product operator still needs to choose different e-commerce modes adapted to local conditions according to different regions. With the development of modern Internet technology, various e-commerce platforms have been accepted by people, and platforms like Taobao, JD (Jingdong), etc. have achieved great success. These platforms can realize the large-scale operation of outlets at relatively low cost. They can obtain more profits through brand building and

promotion marketing. Different e-commerce platforms have different service levels and different operation modes, which will affect the business operation of agricultural product operators. Therefore, platform selection should also be considered as a factor when selecting e-commerce modes.

Agricultural products have their uniqueness, especially fresh products, which have higher requirements for logistics transportation and storage. The logistics costs of different products are different, thus there are certain differences when choosing the e-commerce operation mode. Most of the agricultural products of e-commerce business entities are planted for off-site sales, and through e-commerce platforms they can quickly complete the recovery of funds and obtain profits. Most farmers' capital and risk tolerance are limited, which makes it difficult for them to operate with large-scale companies and enterprises. The normal operation of an e-commerce platform requires sufficient technical and management capabilities as well as capital investment, so capital and risk factors must be considered. The planting and sales of agricultural products are characterized by scale and intensification. Only scale operation can fundamentally reduce marginal cost, improve operational efficiency and obtain more product income.

6. Assumption and Construction of Agricultural Products E-commerce Mode

A. Assumptions affecting the choice of agricultural products E-commerce mode

According to the constituent factors of agricultural product e-commerce mode, we can analyze the factors that affect the choice of agricultural product e-commerce mode, for which the following assumptions are proposed:

Assumption 1: Consumer experience has an impact on the choice of agricultural product e-commerce mode. A good agricultural product e-commerce mode can bring a good experience to consumers. An e-commerce mode is feasible only when consumers have a good experience. Consumer experience is related to multiple factors of agricultural products. The quality, price, reputation, logistics of agricultural products and other factors together constitute the influencing factors of consumer experience.

Assumption 2: Partner satisfaction has an impact on the choice of agricultural product e-commerce mode. A good e-commerce mode must be able to give consideration to all aspects of the business chain and meet the demands of different partners. There are many factors that determine partner satisfaction, including profit, operating cost, risk, etc.

Assumption 3: Government satisfaction has an impact on the choice of agricultural product e-commerce mode. The development of e-commerce can not be separated from the support of the government. A good e-commerce mode should be legal and can pay tax contributions to the government. Therefore, government satisfaction will determine the choice of agricultural product e-commerce mode to a certain extent.

Assumption 4: The main characteristics of agricultural products have an impact on the choice of agricultural e-commerce mode. Agricultural products may have their own unique product characteristics, such as origin, scale, branding, production cycle, etc. These characteristics will have an impact on the marketing mode and process of agricultural products e-commerce.

Assumption 5: The convenience of the marketing subject has an impact on the choice of agricultural product e-commerce mode. For the marketing subject of agricultural products, different e-commerce modes mean different costs and effects. A convenient mode for the marketing subject can effectively reduce costs and improve efficiency.

Assumption 6: The cooperation degree of circulation subjects has an impact on the choice of agricultural product e-commerce mode. The marketing mode of e-commerce can give full play to the characteristics of all people in the business chain, which reflects a multi-party cooperation. Therefore,

factors such as circulation efficiency and spillover benefits of circulation subjects have an impact.

Assumption 7: The performance of e-commerce platforms has an impact on the choice of agricultural products e-commerce mode. There are many e-commerce platforms that can be chosen, and different e-commerce modes have different performance requirements for e-commerce platforms. The performance of the e-commerce platform includes the click through rate, conversion rate and technical quality standards of the platform website.

Combining these assumptions, the main latent variables of agricultural product e-commerce mode can be obtained. Three exogenous latent variables and 12 corresponding measurable variables are obtained, in addition, there are four endogenous latent variables and 18 corresponding measurable variables.

B. Model construction

Structural equation model can deal with a lot of dependent variables and has the advantage of good fitting. The number of Latent variables to be analyzed in this study is 7, so structural equation model is selected. In order to clearly describe the interrelationship between various factors, the knowledge of marketing management discipline and the characteristics of agricultural product sales are analyzed together, and a structural equation diagram is constructed, as shown in Figure 3.

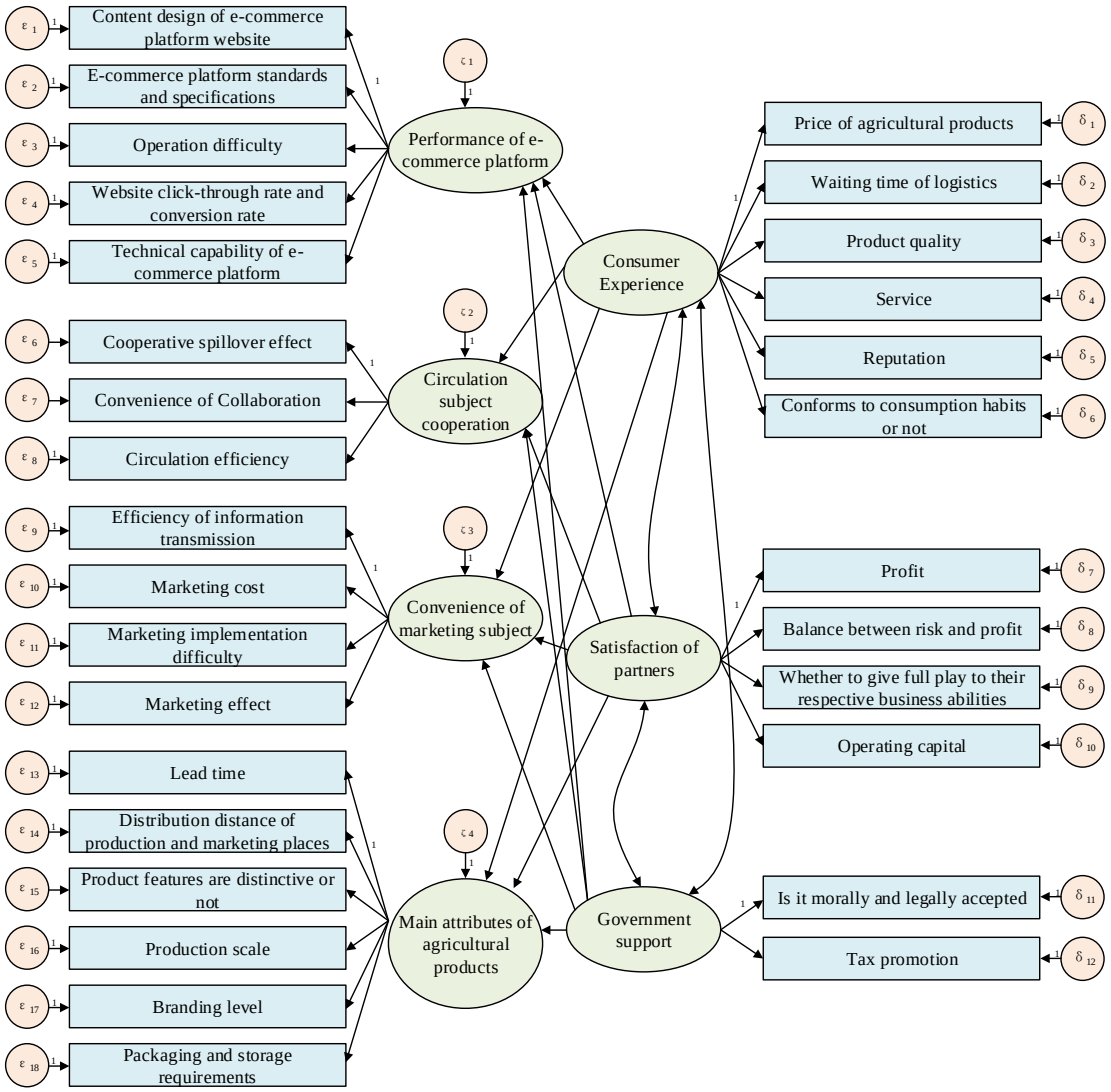

Figure 3 Structural equation of influencing Factors of Agricultural Product E-commerce model

According to the specific characteristics of agricultural products e-commerce, relevant variables are determined, as shown in Table 1.

Table 1 Variable definition table

	Endogenous variables		External variables	
	Variables	Explanation	Variables	Explanation
Latent variables	η1	Performance of e-commerce platform	ξ1	Consumer Experience
	η2	Circulation subject cooperation	ξ2	Satisfaction of partners
	η3	Convenience of marketing subject	ξ3	Government support
	η4	Main attributes of agricultural products		
Observed variables	Y1	Content of e-commerce platform website	X1	Price of agricultural products
	Y2	E-commerce platform standards and specifications	X2	Waiting time of logistics
	Y3	Operation difficulty	X3	Product quality
	Y4	Website click-through rate and conversion rate	X4	Service
	Y5	Technical capability of e-commerce platform	X5	Reputation
	Y6	Circulation efficiency	X6	Conforms to consumption habits or not
	Y7	Convenience of Collaboration	X7	Profit
	Y8	Cooperative spillover effect	X8	Balance between risk and profit
	Y9	Efficiency of information transmission	X9	Whether to give full play to their respective business abilities
	Y10	Marketing cost	X10	Operating capital
	Y11	Marketing implementation difficulty	X11	Is it morally and legally accepted
	Y12	Marketing effect	X12	Tax promotion
	Y13	Lead time		
	Y14	Distribution distance of production and marketing places		
	Y15	Product features		
	Y16	Production scale		
	Y17	Branding level		
	Y18	Packaging and storage requirements		

Circulation efficiency regards the e-commerce model of agricultural products as an intermediary variable, and sets the vectors composed of external indicators and endogenous indicators as x and y respectively. Assume that the endogenous latent variable vector is η, the factor load matrix of the endogenous indicator is Λ_y, the external latent variable vector is ζ, and the factor load matrix of the external indicator is Λ_x. Then let δ, ε be residual terms reflect the unexplained part of the equation, [14].

The measurement equation between indicators

and latent variables can be obtained as follows:

$$x = \Lambda_x \zeta + \sigma \quad (1)$$

$$y = \Lambda_y \eta + \varepsilon \quad (2)$$

Assuming that the influence of external latent variables on endogenous latent variables is Γ, the relationship between endogenous latent variables is B, and the residual term of structural equation is ζ, then the structural equation can be obtained as follows:

$$\eta = B\eta + \Gamma\zeta + \zeta \quad (3)$$

7. Data Analysis

7.1 Analysis of data reliability and validity

The questionnaire was designed according to the assumptions and corresponding indicator variables mentioned above, and the corresponding questionnaire survey was carried out from April 2019 to July 2019. The survey was conducted in the form of online e-mails. Totally 100 questionnaires were distributed, 70 valid questionnaires were recovered, and the availability rate was 70%. SPSS (Statistical Product Service Solutions) software was used to analyze the reliability and validity of the data. The specific results are shown in Table 2 and Table 3.

Table 2 Reliability analysis

Cronbach's Alpha	N of Items
0.898	30

In general, Cronbach's Alpha reliability coefficient of 0.8 means very good reliability, and generally it is not less than 0.6. As can be seen from the data in Table 2, α= 0.898>0.8, indicating that the reliability analysis is effective.

Table 3 Validity analysis

Test result of Kaiser-Meyer-Olkin (KMO)		0.698
Sphericity test	Chi square value	1098.042
	df	435
	Sig.	0

It can be seen from Table 3 that the KMO and Bartlett sphericity test values are 0.698>0.5, indicating that the factor analysis has good validity. It can be further seen that P=0.000<0.001, indicating that the correlation coefficient matrix can explain most of the variance and has good validity.

7.2 Fit analysis of the model

When using the statistical data of the questionnaire survey for analysis, the original assumption mode needs to be partly adjusted to meet the actual situation. The revised structure diagram is as follows in Figure 4.

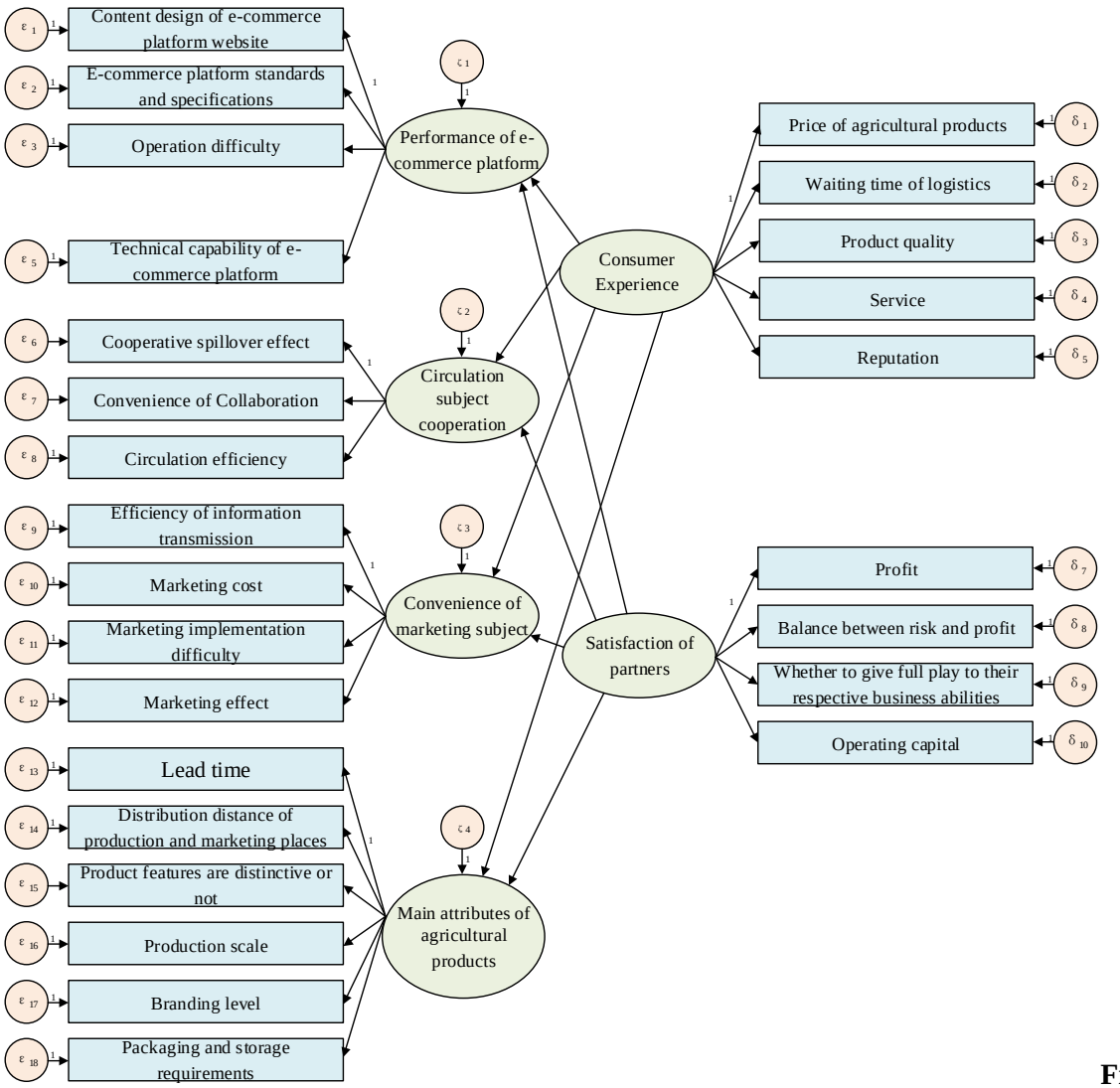

Figure 4

Modified structural equation diagram

The results of the fit analysis of the assumption model are shown in Table 4.

Table 4 Fit analysis of the model

Indicator	Indicator value	Indicator	Indicator value
DF (Degree of freedom)	346.000	IFI (Incremental fit index)	0.881
X^2 (Chi-Square Statistic)	650.587	GFI (Goodness-of-fit index)	0.877
P (P-Value)	0.000	AGFI (Adjusted goodness-of-fit index)	0.887
NFI (Normative fit index)	0.858	RFI (Relative fitting index)	0.882
NNFI (Non-normed fit index)	0.884	RMR (Root mean square residual)	0.026
CFI (Comparative fit index)	0.901	RMSEA (Root-mean-square error of approximation)	0.076

IFI, RMSEA, GFI, AGFI and RMR in Table 4 are all absolute fitting indexes, which are ideal structural equation model evaluation indexes. NFI, NNFI, CFI and RFI are value-added fitting indexes,

which are widely used structural equation model evaluation indicators. The larger the value, the better the fitting. X^2 and P are traditional statistical significance evaluation indicators, which are applied in all data statistics. DF is the difference between the amount of information provided by the sample data and the number of parameters to be estimated. In general, the X2/DF ratio is 2:1-3:1, X2/DF of this model is 2.06, P=0.000<0.1. According to the above conditions, combined with the fitting conditions of the structural equation model, this result can be considered acceptable, [15]. Further analysis of other fitness analysis indicators shows that RMR<0.035, RMSEA<0.08. Besides, NFI, CFI and other indicators are less than 0.08, indicating that the model and data fit well. Among the 6 variables and 27 measurement items in the model, some indicators cannot be less than 0.9, but considering the sample size, they are considered acceptable. The above results show that the hypothetical model is available for fitting.

7.3 Model analysis results

Table 5 and Table 6 are the analysis results of the model. In Table 5, considering the limited number of samples, the confidence interval of P<0.05 is set as the criterion of significance. *** indicates passing the inspection. The standard deviation, critical ratio, nonstandard estimate and significance P value of all data are included in the Regression Weights.

Table 5 Regression weights of variables

			C.R.	S.E.	Estimate	P
η4	←--	ξ2	2.789	.197	.551	***
η4	←--	ξ1	2.346	.204	.483	***
η3	←--	ξ2	2.107	.204	.431	***
η2	←--	ξ2	3.913	.229	.897	***
η2	←--	ξ1	2.722	.198	.539	***
η3	←--	ξ1	1.984	.115	.182	***
η1	←--	ξ1	2.384	.271	.646	***
η1	←--	ξ2	1.961	.135	.258	***
y6	←--	η2	3.736	.255	.953	***
y8	←--	η2			1.000	
y7	←--	η2	4.447	.238	1.059	***
y9	←--	η3			1.000	
y12	←--	η3	2.019	.900	1.817	***
y11	←--	η3	1.962	.414	.482	***
y10	←--	η3	2.104	1.230	2.588	***
y15	←--	η4	2.861	.457	1.308	***
y16	←--	η4	2.169	.405	.879	***
y18	←--	η4	2.485	.390	.970	***
y5	←--	η1	2.240	.461	1.033	***
y3	←--	η1	2.666	.601	1.602	***
y2	←--	η1	2.338	.473	1.106	***
y1	←--	η1			1.000	
y13	←--	η4			1.000	
y14	←--	η4	1.961	.3294	.501	***
x9	←--	ξ2	1.983	.200	.378	***

x10	←--	ξ2	3.687	.228	.841	***
x3	←--	ξ1	3.363	.341	1.146	***
x4	←--	ξ1	3.187	.165	.526	***
x5	←--	ξ1	3.1417	.352	1.204	***
x8	←--	ξ2	3.557	.256	.909	***
x7	←--	ξ2			1.000	
x17	←--	η4	1.964	.325	.502	***
x2	←--	ξ1	2.851	.304	.867	***
x1	←--	ξ1			1.000	
η4	←--	ξ2	2.789	.197	.551	***

When the number of samples is too small, some data in Table 6 will be close to 1. If the number of samples is sufficient and the value is greater than 1, it means that the latent variable of the structural equation has collinearity. Although there is no case greater than 1 in this table. The number of samples may be too small to explain the structural equation.

Table 6 Standard regression weights of each variable

			Estimate
η4	←--	ξ2	.942
η4	←--	ξ1	.695
η3	←--	ξ2	.984
η2	←--	ξ2	.956
η2	←--	ξ1	.530
η3	←--	ξ1	.503
η1	←--	ξ1	.806
η1	←--	ξ2	.382
y6	←--	η2	.477
y8	←--	η2	.543
y7	←--	η2	.613
y9	←--	η3	.178
y12	←--	η3	.328
y11	←--	η3	.103
y10	←--	η3	.424
y15	←--	η4	.501
y16	←--	η4	.291
y18	←--	η4	.367
y5	←--	η1	.408
y3	←--	η1	.590
y2	←--	η1	.441
y1	←--	η1	.405
y13	←--	η4	.346
y14	←--	η4	.207
x9	←--	ξ2	.257
x10	←--	ξ2	.564
x3	←--	ξ1	.630

x4	←--	ξ1	.570
x5	←--	ξ1	.652
x8	←--	ξ2	.537
x7	←--	ξ2	.579
x17	←--	η4	.184
x2	←--	ξ1	.476
x1	←--	ξ1	.510
η4	←--	ξ2	.942

After visualizing the weight data in Table 5, a structural equation diagram marked with regression parameters is obtained, as shown in Figure 5.

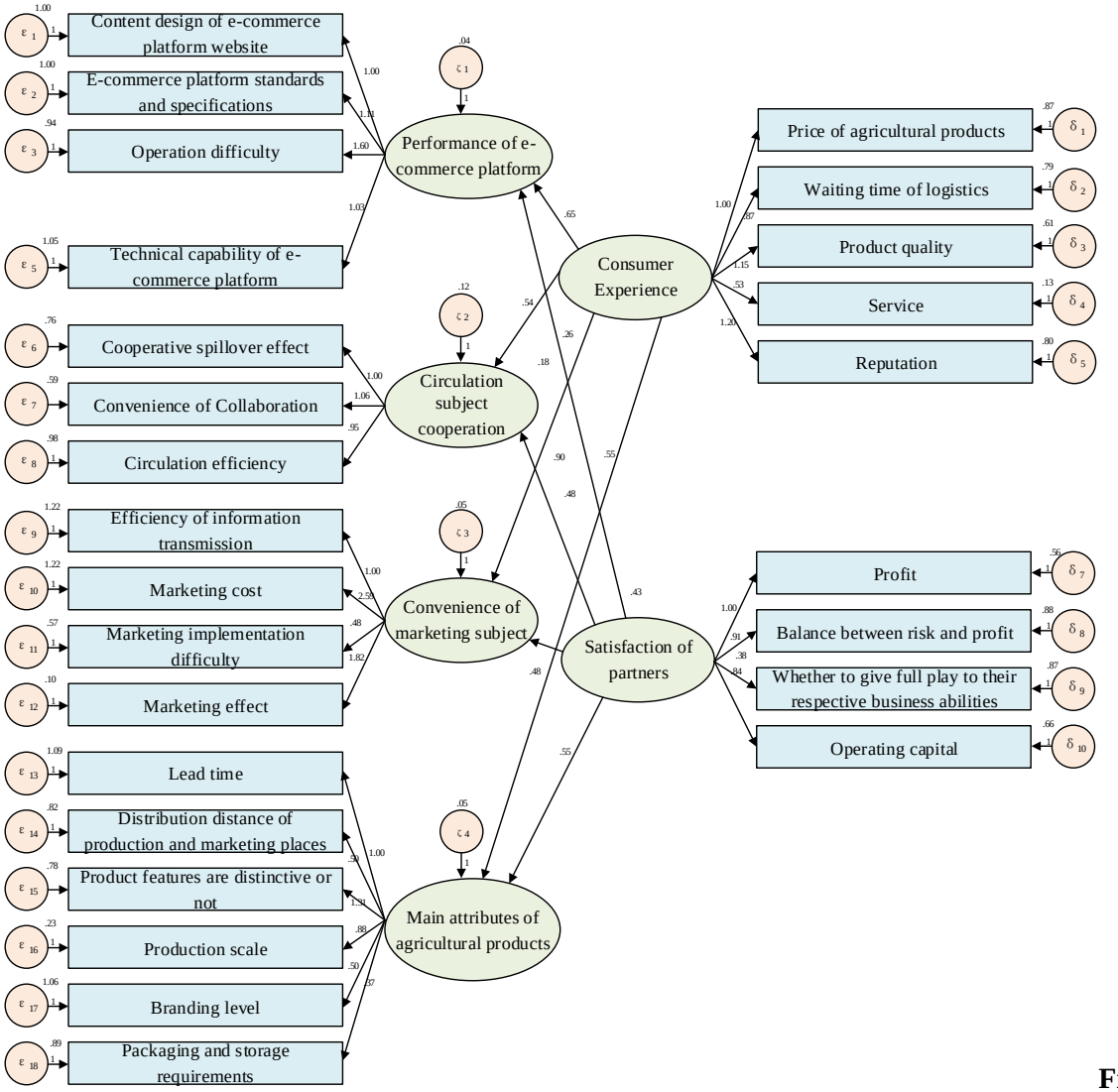

Figure 5

Structural equation diagram with regression parameters

It can be seen from the above analysis that excluding the latent variable of government support has little impact on the model. This is mainly because China is still in the primary stage of e-commerce development, and e-commerce development is just starting, thus the government lacks strictness and experience in supervision. The reason why consumers' habits are excluded from the consumer experience is that it is found that there are two extreme situations of this indicator in the questionnaire survey, either the impact is minimal or it is very important, which will result in excessive

variance. From the perspective of consumers, their consumption behavior may be out of consumption habits, or it may be to try new things. This kind of consumption behavior has a certain randomness, so it does not have a great impact on the choice of models. Further analysis of Latent variable influencing factors in the main performance of e-commerce platforms shows that there is a significant correlation between click-through rate, conversion rate and marketing effect, which makes the equation collinearity enhanced. Therefore, this influencing factor is eliminated. Considering that the correlation between consumer experience and satisfaction of partner business entities is small, the corresponding correlation analysis is also ignored.

The load coefficient of Satisfaction of partners on the main attributes of agricultural products is 0.55, and the load coefficient on the degree of collaboration is 0.9, indicating that its impact is significant. The collaborative load coefficient of consumer experience and Circulation subject cooperation is 0.65, and the collaborative load coefficient of e-commerce platform and Circulation subject cooperation is 0.54, which shows that they are closely related. The relationship load between consumer experience and Operation difficulty is 1.6, and the relationship load between consumer experience and Convenience of marketing subject is 1.06, which fully demonstrates that consumer experience has high requirements for e-commerce platform operation and efficiency.In addition, the load coefficient of partner satisfaction and profit is 1, the load coefficient of reputation is 1.2, and the load coefficient of product quality is 1.15. Marketing cost has a great impact on the convenience of the marketing subject. The corresponding load coefficient is 2.59, followed by the load coefficient of marketing effect, which is 1.52.

According to the analysis, there are six measurable main influencing factors that affect the choice of agricultural product e-commerce model, including marketing cost, profit, reputation, main attributes of agricultural products, the convenience of circulation subject, and the operation difficulty. After removing some factors that are less relevant, the five hidden factors are confirmed, namely, circulation subject cooperation, the attributes of agricultural products, consumer experience, satisfaction of partners and the performance of e-commerce platform subjects.

8. Suggestions on the Selection of E-commerce Mode for Agricultural Products

It can be seen from the above analysis that there are many influencing factors that need to be considered when choosing the e-commerce mode for agricultural products. In practical application, the circulation subject cooperation and the satisfaction of the partners should be considered from a macro perspective. The e-commerce platform is a platform that shares resources and can achieve mutual benefit. Five negative attributes were determined, including consumer experience, partner satisfaction, etc. The quality of agricultural products and the reputation of enterprises have a great impact on the experience of consumers. Especially in the e-commerce mode, more attention should be paid to the reputation of enterprises and branding of products, and stricter quality standards should be implemented, [16-18].

In order to realize the efficient operation of the agricultural product e-commerce chain, it is necessary to fully consider the profits of partners and make all participants have significant benefits. A mode that takes into account both risks and benefits can enable them to actively participate in the operation of agricultural products. When choosing e-commerce platforms, the difficulty of operation is a very important indicator. As online shoppers and marketing agents may come from rural areas, their computer operating skills may be poor. Therefore, the e-commerce platform should be designed according to the preferences and computer skills of users, so that various users can have a better experience in the operation process, [19]. Lead time also has a direct impact on the sales mode of agricultural products. Order farming mode and cycle purchase mode can be adopted.

Here, China is analyzed as a representative country. China has a large land area and relatively developed agriculture, so the marketing of agricultural products is very important in that country. The current e-commerce platform and the corresponding distribution system in China are quite developed, which means that the performance of the main e-commerce platform, the degree of collaboration of the distribution body and the ease of marketing are high. However, there is currently a problem of low price competition among Chinese agricultural e-merchants, which undermines the profitability and development potential of this market, and the negative effects of low price competition need to be avoided by improving the e-commerce model.

9. Conclusion

This study explored the influencing factors of agricultural e-commerce mode selection and established an influencing factor model through SEM. The results of the study identified five latent variables and their corresponding observed variables, and suggestions for the selection of agricultural products e-commerce models were made based on the modeling results. The agricultural products e-commerce mode should fully consider the benefits and risks of all participants, and fully consider customers' operational capabilities and shopping experience. In addition, the agricultural products e-commerce mode should fully consider the characteristics of the goods. For this point, other studies in this field have reached the same conclusion, [20]. This study has achieved successful results, but due to the small sample size, there is still room to improve the accuracy of the final results when conducting statistical analysis. In the follow-up work, the sample size can be further increased to obtain a more realistic agricultural products e-commerce model.

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