Study on the Key Factors affecting Tea Farmers' Marketing Performance of Platform-type E-commerce: Based on the View of Resources and Capability

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Abstract—In order to identify the effect of resource endowment and E-commerce entrepreneurship capability on tea growers' marketing performance of e-commerce, this paper uses the structural equation model to test the results based on the survey data of 229 tea farmers. The results show that the platform based business model service system has a significant positive impact on resource endowment and E-commerce entrepreneurship capability. E-commerce entrepreneurship capability has a significant positive impact on the survival performance and development performance of tea farmers' e-commerce marketing. But resource endowment has no significant impact on the survival performance and development performance of tea farmers' e-commerce marketing. In the current academic circles, there are very few results about the factors affecting tea farmers' marketing performance of e-commerce. This study helps to enrich the theory research results in this field and provide more reliable decision reference for the decision-making departments.

Keywords—Platform-type e-commerce; Marketing performance; Tea; Structural equation model

I. INTRODUCTION

The rapid development of the Platform e-commerce website based on Taobao and Jingdong mall provides a new tea sales channels for farmers. The majority of tea farmers rely on platform based e-commerce websites to actively participate in e-commerce business and promote the rapid development of electronic commerce tea. Take Anxi County as an example, There are more than 70 thousand employees engaged in tea e-commerce business, among them, the individual tea farmers more than 35 thousand people. In this paper, we take tea farmers relying on the platform of e-commerce sites for electricity providers entrepreneurs as the object of study, and focus on resource endowment and entrepreneurship ability as well as the actual impact of the platform service system on farmers e-commerce marketing performance, which can provide some useful reference for Chinese tea e-commerce development strategy design and compensate for the field theory research, with a certain theoretical innovation and practical significance.

II. VARIABLE DESIGN AND MODEL BUILDING

A. Variable design

First, the measurement variables design of tea farmers' e-commerce marketing performance is important. In the evaluation of the performance of start-ups, Chrisman [1] argue that start-ups need to go through start-up and growth periods, and their primary goal is to survive and grow smoothly, so the performance evaluation of start-ups focused on Survival dimension and growth dimension, which is recognized by most scholars [2]. As a special representative of small and micro enterprises, tea farmers have relatively short years of e-commerce activities and most of them are in the start-up stage or the start-up stage of enterprises. In view of this, this paper draws on practices of Chrisman and others [1] and divides the tea farmers' e-commerce marketing performance evaluation system into two dimensions: survival performance and growth performance.

Second, the potential influencing factors design of tea farmers' e-commerce marketing performance is significant. In the study of factors affecting performance, resource-based theory and enterprise competence theory play very important roles. Resource-based theory holds that the competitive advantage of an enterprise comes from the resources that an enterprise can control, and that different enterprises have different performances because of the heterogeneity of their resources. However, with the increasingly fierce market competition, enterprise development has become more complex, and the ability of enterprises to integrate and utilize their internal and external resources is directly related to its formation and consolidation of core competence. The change of market competition trend leads to the key influence factor of enterprise performance based on resource-based theory. With some limitations, it needs to reflect the new intermediary factors of resource utilization ability to further dig out the impact of resources on performance [3]. According to the enterprise competence theory, enterprise is the aggregate of ability, but it is difficult to imitate and irreplaceable [4] and determine the heterogeneity of different enterprises; The internal capability of an enterprise determines the resource allocation capability of an enterprise, and affect the ability of enterprises to gain competitive advantage and enhance the market position, finally

it has indirect effect on business performance. In addition, different e-commerce business models have different resource endowments and ability requirements for tea farmers. On the one hand, the platform based electricity supplier model (such as Taobao, Tmall, Jingdong mall and so on) can reduce the farmers resources endowment and resource allocation capability requirements, such as sales channel resources, market information collection and utilization ability so that it has a positive impact on farmers e-commerce marketing performance; On the other hand, with the platform type in the main business model increasing, the intensity of online competition has been the same as the level of competition under the line, and then put forward higher requirements for the resource endowment and

allocation ability of tea farmers, and then have a negative impact on operational performance.

In summary, this paper uses the theory of resource and enterprise competence theory, the influence formed from the 3 dimensions of resource endowment, entrepreneurship ability, platform type electricity supplier model service system causal model of farmers e-commerce marketing performance as the analysis basis, based on the 3 factors as structure variables. And each structural variable corresponds to the measured variables of the tea farmers' platform e-commerce marketing performance factors that are influenced by the structural equation model (as shown in Figure 1).
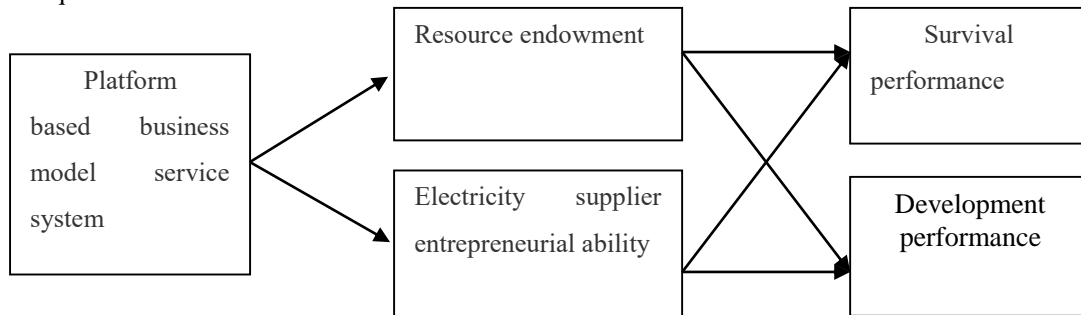

Fig. 1. Conceptual model of the factors affecting tea farmers' marketing performance of platform-type e-commerce

The specific measurement items of he resource endowment of the tea grower and the electricity supplier entrepreneurial ability, the platform based business model service system, and

the survival performance and growth performance are shown in table 1.

TABLE I. DESCRIPTIVE STATISTICS SUMMARY TABLE

	Measurement item	Mean value	Factor loading	CICT index	Cronbach's avalue
CZ1	What's the growth rate of your tea sales?	3.11	0.819	0.84	0.824
CZ2	What is the growth rate of the net profit of your tea sales?	2.99	0.747	0.75	
CZ3	What is the rate of return on investment in your tea sales?	3.18	0.759		
CZ4	How about the new customer flow of your tea?	3.02	0.774	0.73	
CZ5	How many new customers are there in your family?	2.99	0.695	0.57	
CZ6	What's your customer retention rate?	3.11	0.651	0.55	
SC1	What's your average tea sales in the last two years?	2.52	0.756		0.853
SC2	What is the average net profit of your tea sales in the last two years?	2.48	0.698	0.68	
SC3	What do you think of the profitability of tea sales relative to inputs?	2.46	0.691	0.87	
SC4	How about your customer visits?	2.43	0.559	0.71	
SC5	How many customers are there in your family?	2.65	0.624	0.72	
ZY1	What is the level of financial adequacy you need to develop your e-commerce?	3.32	0.592	0.56	0.867
ZY2	How well do you need the hardware for your e-commerce?	3.38	0.75	0.73	
ZY3	How well do you work for e-commerce in your family?	3.39	0.671	0.66	
ZY4	How well do you know the skills of e-commerce in your team?	3.34	0.665	0.58	
ZY5	What is the basis for long-term cooperation between your home and your major partners?	3.49	0.683	0.73	
ZY6	How reliable is your family with your major partners?	3.49	0.59	0.71	

Table I, cont.					
NL1	How about your team members' e-commerce education background or training experience?	2.98	0.735	0.67	
NL2	How rich is your team's e-commerce experience?	3.21	0.798	0.72	
NL3	What is your ability to integrate your team's internal and external resources?	3.21	0.834	0.79	0.836
NL4	What's your ability to collect tea market information?	3.23	0.821	0.81	
NL5	What's your ability to handle tea market information?	3.2	0.778	0.73	
NL6	What is your home's capacity to use tea market information?	3.21	0.662	0.62	
DS1	How about the influence of Taobao platform on the operation of tea industry chain?	3.21	0.779	0.71	
DS2	Taobao platform operating system mature, how much help to the business?	3.54	0.76	0.78	
DS3	Taobao platform can facilitate and timely communication with customers and services	3.75	0.76	0.81	0.834
DS4	Selling tea on Taobao platforms requires less resources for your home	3.57	0.629	0.67	
DS5	The sale of tea on Taobao platforms requires less business	3.46	0.673	0.69	
DS6	The Taobao platform has many partners and can outsource many businesses	3.39	0.698	0.68	

III. DATA COLLECTION

In view of the research target and Taobao is China's largest platform for e-commerce sites, the survey sample is defined as the tea seller who has the status of tea farmers in Taobao, and the so-called "tea grower" is the farmer who grows tea and tea. The questionnaire design is based on 29 specific measurement items designed in the previous paper, the data collection was made by Likert scale 5 scale. For example, how about the growth rate of your tea sales? The optional answer is "very low, low, average, high, very high", assigning 1, 2, 3, 4, 5 respectively. The questionnaire was conducted in two ways: field surveys and the use of Taobao' chat tools "Aliwangwang" to randomly investigate online sellers of tea growers. Field surveys were conducted in representative cities in Fujian, Anxi, Wuyishan, Xiamen and Fuzhou. Finally, a wide range of questionnaires was completed in July 2015 and completed by the end of 2015. A total of 400 questionnaires were issued and 229 valid questionnaires were collected, including 98 network questionnaires and 131 field questionnaires.

IV. KEY FACTORS IDENTIFICATION RESULTS ABOUT THE MARKETING PERFORMANCE OF TEA FARMERS

A. Validity test

The validity test of the questionnaire is mainly to verify the reliability of the design for each variable. The Bartlett test and KMO statistics are used to judge the factor analysis. Among them, the KMO value was greater than 0.7, the lowest standard passed by the scale validity test. The greater the KMO value, the better the measurement scale. Through the analysis method, the KMO value of the 29 measurement items is 0.838, and the p value of the Bartlett sphericity test statistics is 0. The above results show that the validity test results are good so that it is suitable for subsequent factor analysis. Then, set the number of

factors to 5, and the cumulative variance interpretation ratio of the five common factors is 61.73% and more than 60%, which indicates that the extracted common factor has a good representation of the original data. From the factor load, 29 items loaded on the corresponding common factors, including the factor loading which were above 0.6. Among them, factor 1 is the electricity supplier entrepreneurial ability dimension, factor 2 is the resource endowment dimension, factor 3 is growth performance dimension, factor 4 is platform type electricity supplier mode, service system dimension, factor 5 is survival performance. The above data show that the scale of measurement is tested by validity. It is reasonable to assign 29 items to 5 structural variables, which can be used for subsequent econometric analysis (See Table 1 for details) [The length of the article is limited, and the data of the analysis process can be obtained from the author.].

B. Reliability analysis

The degree of internal consistency of the measured results ensures the reliability of the whole measurement result, that is, the measured items can accurately and comprehensively reflect the problems under study. In this paper, the CITC (Corrected Item-Total Correction, CITC) is used to determine whether the measurement has better internal consistency, and then use the Cronbach's a coefficient to test the reliability of the questionnaire, the results are shown in table 1. We can see from table 1that the CITC of CZ3 and SC1 is less than 0.5 and will be eliminated; Excluding the above two items, 5 dimensions of resource endowment, entrepreneurship ability, platform type electricity supplier model service system, survival and growth performance of Cronbach 's coefficients were 0.867, 0.836, 0.834, 0.824, 0.853, which were more than 0.7. The results showed that the 5 dimensions were tested by reliability test, and could be used in structural equation model analysis

C. Normality test

The structural equation model requires that the observed values of each measurement item conform to the normal distribution. In the test of normality, it is generally believed that the coefficient of skewness (Skew) and kurtosis coefficient (Kurtosis) are closer to 0, the better, and the skewness coefficient <3 and the kurtosis coefficient <8 are within acceptable limits. According to the observation of 29 measuring items, the results show that the skewness coefficients of all the items are between -0.575 and 0.673, and the kurtosis coefficient is between -0.747 and 0.343 which were close to 0. It basically meets the normal distribution requirements.

D. Key factors identification results -- Based on structural equation model

After completing the reliability test, the validity test and the normality test of the measurement scale, this paper uses AMOS21 to fit and optimize the structural equation. The results are shown in Table 2 and table 3. The fitting degree of model is shown in Table 2, and the goodness of fit of the whole model is acceptable. For example, the statistical value of χ^2/df is 2.89, less than 3, which indicates that the model has a simple adaptation degree and the fitting degree of a model is acceptable.

TABLE II.   INTEGRAL MODEL FITTING INDEX

χ^2	df	P	χ^2/df	RMR	GFI	CFI	RMSEA
919.22	318	0	2.89	0.08	0.77	0.80	0.09

Table 3 shows the path coefficients of "resources - platform business model service system", "business entrepreneurship - platform based electricity supplier model service system" were 0.673 and 0.658, which were significant at the 99% confidence level and show that the platform type electricity supplier mode service system has a significant positive impact on the tea grower resource endowment and the business ability of the electricity supplier. The main reason may be that the rapid development of Taobao has boosted the development of its auxiliary industry chain, such as numerous research institutions, training institutions and third party logistics organizations, which carry out research and detailed interpretation of platform operating rules and provide consulting, training and operation service for major enterprises so as to increase farmers resources endowment and e-commerce business capacity. Moreover, compared with the traditional channels, it greatly reduces the demand for the resource endowments of tea farmers, and indirectly increases the resource endowment of tea farmers' perception; At the same time, Taobao's complete auxiliary industry chain and its related institutions have helped tea farmers to rely on tea supply advantages and outsource their weakness to the third parties, such as store operation, operation structure and training organization, which reduce the basic requirements of farmers electricity supplier management ability to a certain extent.

The path of coefficients "survival performance - entrepreneurship ability, growth performance through entrepreneurship ability" were 0.158 and 0.020, which was significant at 90% confidence and shows that the business ability of the electricity supplier has a significant positive impact on the survival performance and development performance of the tea farmers' e-commerce marketing. But the path of "survival performance - resources" and "growth performance - resource endowment coefficient" did not pass the significance test, it shows that the performance of survival performance and development resources for tea e-commerce marketing does not have a significant impact. The possible reason for the above empirical conclusions is: First, as the above theoretical analysis, Under the condition of fierce competition of tea consumption market and mature industry chain, having resources is not a necessary condition for farmers to build competitive advantages, while the integration and optimization of the allocation of internal and external resources is a necessary condition for competitive advantage. The ability of resource integration can optimize the resource allocation of tea farmers, build the core competitiveness, and then improve the performance of enterprises; Second, Taobao is an extremely open platform, the difficulty and cost of imitation between sellers are greatly reduced, and the perfect supporting third party organizations are outsourcing, and the difficulty and cost are dramatically reduced. It reduces the knowledge of tea farmers, talents, hardware facilities and other resources to a certain extent.

TABLE III.   SUMMARY OF STRUCTURAL EQUATION HYPOTHESIS TEST RESULTS

Route	Coefficient	S.E.	C.R.	P	STD
Electricity supplier entrepreneurial ability←Platform based business model service system	0.658	0.088	7.515	0	0.717
Resource endowment←Platform based business model service system	0.645	0.085	7.610	0	0.673
Survival performance←Electricity supplier entrepreneurial ability	0.158	0.092	1.721	0.085	0.160
Survival performance←Resource endowment	0.025	0.085	0.295	0.768	0.027
Growth performance←Electricity supplier entrepreneurial ability	0.222	0.078	2.835	0.005	0.269
Growth performance←Resource endowment	0.020	0.077	0.256	0.798	0.023

V. RESEARCH CONCLUSIONS AND INSPIRATIONS

The study was based on questionnaire data from 229 tea farmers, using structural equation model to identify the impact of resource endowment, electricity supplier entrepreneurial ability and the influence of platform electricity supplier mode service system on the marketing performance of tea farmers' E-commerce. Results show that Platform type electricity supplier mode service system has a significant positive impact on tea grower resource endowment and electricity supplier entrepreneurial ability, electricity supplier entrepreneurial ability has a significant positive impact on the survival performance and development performance of tea farmers' e-commerce marketing, and the resource endowment has no significant influence on the survival performance and development performance of the tea farmers' e-commerce. The policy implications of the above conclusions are as follows: construct rural training system and improve the ability of entrepreneurs. At the same time, we should encourage and support educational institutions at all levels to provide agriculture related e-commerce majors and courses, and train people with multi levels of proficiency in agricultural e-commerce, which will play an important role in the training of e-commerce talents. In addition, we will encourage the development of agricultural e-commerce service institutions to provide employment export for e-commerce talents and provide more intellectual support for the vast number of agriculture related e-commerce, farmers and enterprises.

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