



# Customer Satisfaction Analysis of Agricultural Products E-commerce Platform Based on SERVQUAL Model

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## ABSTRACT

At present, the rapid development of e-commerce platform in China has promoted the increase of the number of e-commerce platforms for agricultural products and the expansion of its scale. However, the fast developing pace of e-commerce also has some problems. China's e-commerce platform starts late, while service concept cannot keep the same pace with it, leading to slow growth in the late. Based on the SERVQUAL service quality model, this study conducts a questionnaire survey on the service quality of agricultural products e-commerce platform, obtains the questionnaire data online and offline, analyzes the reliability of the questionnaire, and obtains the relationship between the various factors of service quality and customer satisfaction. This paper provides some references for the development of agricultural electricity supplier platform.

**Keywords:** SERVQUAL; Agricultural products; E-commerce platform; Customer satisfaction

## 1. Introduction and literature review

In 2017, Article 14 of Central Document No. 1 specifically addressed rural electricity suppliers and proposed to speed up the establishment and

improvement of a standard system for the development of agricultural electricity suppliers. We will support the construction of agro-products e-commerce platforms and rural e-commerce service sites and promote the integration of commerce and trade, supply and marketing, postal services and e-commerce, and further implement the e-commerce's comprehensive rural demonstration. With the reform of China's supply side, the number of e-commerce platforms involved in agriculture in China have surpassed 30,000 at present, of which 3,000 are e-commerce platforms for agricultural products.

With the rapid development of agricultural electricity suppliers, more and more attention needs to

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be paid to the impact of service quality on customer's satisfaction. This paper uses SERVQUAL model to conduct satisfaction survey of agricultural electricity supplier. SERVQUAL theory is based on the theory of total quality management, which proposed a new quality of service evaluation system. SERVQUAL quality of service is divided into five levels: ease of use, reliability, empathy, assurance and responsiveness inputs. Each level is subdivided into a number of questions. Through questionnaire survey, users are asked to rate the expected value of each question, the actual feelings, and so on, and specify the relevant 22 specific factors. Finally, through the questionnaire, customer scoring and comprehensive calculation of service quality scores. In view of the complexity of the investigation object, this article establishes 27 factors to carry on the questionnaire survey, including 5 factors of the original basis.

With the expansion of e-commerce platform's scale, many experts and scholars have conducted researches and explorations on e-commerce platform for agricultural products. Zhang Yong and Dong Hu stopped designing the questionnaire, and used the structural equation and the quality of service provided by AMOS to obtain the significant influence on the e-commerce platform of agricultural products. Wang Yan, Zhou Xiangzhen and others to agricultural service information system as a starting point[1], on the e-commerce platform for agricultural products service model for innovative research. Yuan Juanjuan, Gu Yuting, Dong Wenjie based on the user portrait of agricultural e-commerce platform for a precision marketing model design[2]. Many scholars have studied and researched on the agro-products e-commerce platform[3], but there is relatively few researches on the service quality of agro-products e-commerce platform. Therefore, this article starts the investigation and analysis at the starting point.

## 2. research methods

For the study, a combination of literature collection method and questionnaire method was used. Questionnaire production was conducted on the basis

of literature collection, questionnaires were distributed and surveys were conducted, and statistical data were obtained.

### 2.1 literature collection method

Based on the existing database retrieval and access to all kinds of related literature, we can see that a large number of scholars have invested in the agro-products e-commerce platform and have paid much attention to its development through analyzing the published quantity and time of the existing literature. Increase, cut into perspective is more detailed. However, based on the quality of service model, there are relatively few surveys on the satisfaction of agricultural products e-commerce platform.

### 2.2 Questionnaire method

Based on the SERVQUAL model, a questionnaire on the satisfaction of agricultural products e-commerce platform was made. 220 questionnaires were sent online and 220 questionnaires were returned. 100 questionnaires were distributed offline and 100 questionnaires all of them were collected. A total of 100% of the questionnaire recovery, excluding invalid, missed fill, fill in 26 failed questionnaires, the questionnaire effective rate of 91.9%.

## 3. satisfaction analysis of agricultural electricity supplier platform

### 3.1 Based on SERVQUAL model of agricultural products e-commerce platform satisfaction scale

Based on the service quality model design Satisfaction Scale, the quality of service quality model is divided into five dimensions to set up 27 questions, the questionnaire using Likert five-point scale[4], and five-point system to be assigned: 5 is very satisfied, 4 is satisfied, 3 is normal, 2 is not satisfied, 1 is very dissatisfied. Detailed scale in Table one

### 3.2 Scale reliability analysis

This article uses Alpha to test reliability. Under normal circumstances, alpha coefficient  $\alpha$  greater than 0.8 indicates that the reliability of the questionnaire is very high. When the alpha coefficient  $\alpha$  is between 0.8 and 0.35, the reliability is acceptable[5]. If  $\alpha$  is less than 0.35, the reliability is low. This paper uses

SPSS21.0 analysis of the questionnaire data, draw the following results, as shown in Table 2

**Table 1 SERVQUAL model**

Dimension	project
Ease of use	① The platform navigation division of labor is clear, easy to browse
	②The platform features quickly grasp by the user
	③The platform provides the ability to quickly search and filter products
	.....
reliability	①The product information provided by this platform is very specific and comprehensive
	②The information presented on this platform is real
	③The platform can properly solve customer problems encountered
	.....
Empathy	①The platform to buy agricultural products have instructions for consumption or processing
	②The platform has a variety of customer service shopping
	③The platform sends greetings from time to time
	.....
Guarantee	①The platform for the high degree of confidentiality of customer information
	②The system of the platform is safe and stable
	③The platform can provide a safe and secure payment environment
	.....
Responsive ness	①The platform is responsive to pre-sales consulting services
	②The platform aftermarket advisory services, fast response
	③The platform for the timely updating of agricultural products information
	.....

**Table 2 Reliability Statistics**

Cronbach's Alpha	Number of items
.951	27

It can be seen from the table that the alpha of the questionnaire is 0.951, indicating that the questionnaire has high credibility and is suitable for making a questionnaire survey. The internal consistency of the questionnaire is high.

### 3.3 Agricultural Products E-commerce satisfaction analysis

Customer Satisfaction is a kind of psychological activity, which is the sense of pleasure after the customer's demand is satisfied and the relative relationship between the customer's actual experience

value and the expectation value: Customer Satisfaction = Actual Value - Expectation value[6]. In order to know more about the E-commerce Platform customer satisfaction factors, it will be the results of the questionnaire statistics, according to different weight statistics out of the average value of the actual experience and expectations, the overall average customer satisfaction reached, as shown in Table 3

**Table 3 Agricultural Products e-commerce platform customer satisfaction questionnaire survey statistics table**

Dimension	Project	E	P	P-E
Ease of use	① The platform navigation division of labor is clear, easy to browse	3.92	3.87	-0.05
	②The platform features quickly grasp by the user	4.18	3.85	-0.33
	③The platform provides the ability to quickly search and filter products	3.91	3.83	-0.08
	.....			
reliability	①The product information provided by this platform is very specific and comprehensive	3.79	3.83	0.04
	②The information presented on this platform is real	3.92	3.65	-0.27
	③The platform can properly solve customer problems encountered	3.78	3.69	-0.09
	.....			
Empathy	①The platform to buy agricultural products have instructions for consumption or processing	3.89	3.74	-0.15
	②The platform has a variety of customer service shopping	3.56	3.73	0.17
	③The platform sends greetings from time to time	3.95	3.42	-0.53
	.....			
Guarantee	①The platform for the high degree of confidentiality of customer information	3.88	3.73	-0.15
	②The system of the platform is safe and stable	4.04	3.75	-0.29
	③The platform can provide a safe and secure payment environment	4.15	3.92	-0.23
	.....			
Responsive ness	①The platform is responsive to pre-sales consulting services	3.78	3.75	-0.03
	②The platform aftermarket advisory services, fast response	3.76	3.64	-0.12
	③The platform for the timely updating of agricultural products information	3.82	3.75	-0.07
	.....			

It can be seen from the table that there are various problems in the development of e-commerce platforms for agricultural products in different dimensions. Therefore, we put forward the following suggestions and opinions

#### **4. Improve agricultural products e-commerce platform customer satisfaction recommendations**

##### *4.1 Adoption of new e-commerce model to reduce intermediate links*

F2F e-commerce model for the sale of agricultural products, F2F e-commerce model refers to the agricultural products through the network platform from farm (Farm) to the family's new e-commerce model, this model allows farmers to communicate directly with customers so that they Can grasp the first-hand information of agricultural products sales information, so as to effectively organize production, to meet customer needs. At the same time, it can also solve the problem of information exchange is not smooth, deal with the problem of information asymmetry, reduce unnecessary intermediate links, reduce costs and improve efficiency.

##### *4.2 Establish and improve the rural logistics system and strengthen the development of third-party logistics*

By increasing the investment in infrastructure and supporting facilities, we will promote the facilitation of traffic and the development of network information in rural areas. In the meantime, we must continue to increase the maintenance of infrastructure to ensure the efficiency of infrastructure. For some agricultural products, large size, short shelf life, perishable and other factors, you can build a large-scale logistics base or logistics park around the city or the traffic artery. At the same time, to encourage the development of third-party logistics, third-party logistics make full use of the advantages of the Internet, relying on the advantages of the logistics side, using big data analysis, the entire Internet development direction[7].

On the basis of in-depth analysis of the data, the government and enterprises foresee the possible risks and form a risk defense plan.

##### *4.3 Strengthen government guidance*

Use of Internet technology, in the production and marketing aspects, timely collection and dissemination of agricultural information, order form of agricultural products sales. At the same time, governments at all levels should give full play to their service functions and macro-control functions and promptly set up government information platforms for agricultural products by stepping up the relationship between farmers and logistics enterprises. Through the implementation of relevant policies such as building a green channel, improve the local facilities. Increase financial, fiscal revenue, land and other policy support efforts to promote the rapid development of e-commerce in rural areas.

##### *4.4 Construction and improvement of online trading platform to achieve online transactions*

The establishment of agricultural marketing website, the use of dual-channel approach: that is, both direct sales channels and network sales channels, in order to achieve the maximum sales. The target group of consumer habits, hobbies, purchasing power and other conditions to be aware of the targeted construction of the company's Web site and take measures to improve the effectiveness of the site's publicity so that the site can play its due role[8]. Users can choose or request products or services under the guidance of enterprises through the Internet. Enterprises can timely produce and provide services according to customers' choices and requirements in order to improve production efficiency and marketing efficiency of enterprises. The research and development and positioning of products .

##### *4.5 E-commerce platform + direct supply*

The main body of direct supply of origin is not limited to farms and farmers, but also from the large-scale production based to participate in the sales process. Through large-scale fresh produce enterprises

self-built platform to B2B, B2C for the business model, this mode of operation, business self-built e-commerce platform and self-built logistics. In this context, through data analysis and marketing, both suppliers and production sites can send the agricultural products through the cold chain logistics or through the third party logistics to the consumers through the information provided by the e-commerce platform.

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