

Evaluation of Service Quality of Self-Media Online Stores Based on Online Comments -Taking Toutiao Online Stores as an Example

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ABSTRACT

As a new force of self-media, Toutiao(www.toutiao.com) has broken the traditional self-media marketing model. Through fan advantages accumulated by short video producers for a long time, Toutiao with platform supervision and self-media credit as endorsement has carried out a series of activities such as poverty alleviation, agricultural assistance and brand cooperation. In this paper, six self-media with more than 2 million fans are selected to capture 5862 valid online comments of products through web crawler technology. Keywords are extracted by TF-IDF method and the service quality of online stores in Toutiao is evaluated by AHP analysis method.

Keywords: *Service quality, self -media online stores, online comments*

1. INTRODUCTION

At the beginning of 2020, the commodities stored by merchants for festival and the crops planted by farmers are faced to sales difficulties and the plight of poor sales due to the sudden epidemic. As a new force of self-media, Toutiao precisely connects with agricultural products or brand owners and carries out network marketing through online live broadcast or shop opening with the customer advantages accumulated by self-media short video producers.

1.1. Related Work

For the concept of self-media, different views are established among scholars at home and abroad due to the different content and mode of communication and the different marketing environment. In July 2003, the concept of self-media is firstly proposed by Schein Bowman and Chris Willis. It is pointed out that self-media is a way for the general public to provide and share their own facts and news after being strengthened by digital technology and connected with the global knowledge system. Wei Wuhui [1] believes that the domestic media environment is different from that of the United States, and the domestic self-media should be defined as a digital media with strong personal style characteristics operated and maintained by one person (or a very limited number of people). However, what can be seen in these two definitions is only the beginning of self-media, not its development [2]. Therefore, It is suggested that self-media, which takes WeChat, Weibo, Toutiao and other media as platforms with the aid of mobile intelligent

terminals, mainly disseminates personal opinions to the public in the form of posting personal short videos or short essays within the scope of the law by registering personal accounts, and obtains revenue through forwarding, click through, praise and other means. The self-media online stores mentioned in this paper refer to the self-supporting shops set up by short video producers in Toutiao who have a certain number of fans.

AHP is used as the evaluation method in most of the studies on quality evaluation, but there are differences in the methods of data acquisition. For example, Liu Wenlong et al. [3] grabbed the online comments of 216 rural lodging in Jiangsu province on the Public Comment through the Python program, and concluded the evaluation index system of rural tourism accommodation quality.

At present, most of the domestic research on self-media is focused on the marketing strategies of WeChat official account, Weibo and short video, mainly based on qualitative analysis. However, there are few quantitative researches related to the evaluation of self-media service quality. Therefore, it is suggested that the service quality can be divided into three parts: pre-sale, in-sale and after-sale. This paper classifies the online comment information captured by web crawler technology, then constructs the evaluation index system of the self-media service quality, and evaluates the service quality of self-media by AHP method.

1.2. Research on Service Quality Indexes of Self-media Online Stores

Since October 2017, the author has continued to observe the short video produced by self-media people and the resulting online comments. It is found that, unlike the sales model of

Taobao and Jingdong, the authors of self-media short video of Toutiao show their own products or local featured products through video in the form of gourmet production and launch products according to people's needs. Through online shopping, product evaluation is generated, and service quality is improved based on online review information.

1.2.1. Keyword analysis

In this study, pre-sale service quality is defined as product introduction, forecast, screening and other services. In-sale service quality refers to the quality of interaction between merchants and consumers after watching live broadcast or entering the store. After-sale service quality is defined as comment reply, logistics, compensation, etc. Taking 6 self-media producers with more than 2 million fans in Toutiao as research objects, 6000 service information has been grabbed. And 5862 valid information is obtained after eliminating invalid information. TF-IDF is used to analyse the word frequency. The top 20 words are buyback, check, quality, free, activity, broken, compensation, same, ignore, time limit, coupon, screening, multiple times, maintenance, improvement, logistics, distribution, customer service, supervision, homemade, etc.

1.2.2. Data coding

Based on above keywords and test analysis of the top 20 comments, many factors affecting the service quality of self-media online stores have been expanded and sorted out, and then coded and

classified. The pre-sale service part includes three indicators: promotion method, product introduction and means of competition; The part of in-sale service includes three indexes, namely, sales method, product quality and product source. After-sale service part includes business attitude, logistics and return and exchange. The extracted indicators and relevant comments, i.e.

1.3. Our Contribution

This study has the following theoretical and practical significance. Firstly, the comment information is captured online by crawler technology and the quality evaluation index is constructed by the way of keywords, which is a beneficial supplement to the existing index determination methods and has objectivity. Secondly, according to the characteristics of self-media online stores, the service is divided into pre-sale, in-sale and after-sale services, which are further segmented and then evaluated. Thus, an independent and interactive closed-loop service is formed, and the influence of each index on service quality can be observed more intuitively. Finally, by combining qualitative analysis with quantitative analysis, the problem of multi-index decision making can be better solved, and the evaluation can be more specific, objective and accurate.

1.4. Paper Structure

The rest of the paper is organized as follows. Section 2 introduces Construct the Evaluation Model of the Service Quality of Self-Media Online Stores. Section 3 is Conclusions and Recommendations.

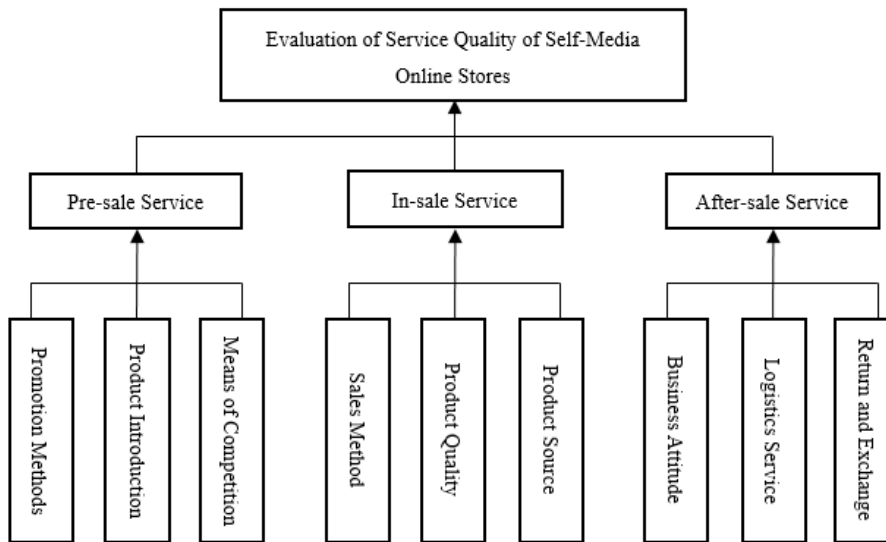


Figure 1 Hierarchical model of service quality of self-media online stores

2. BACKGROUND

2.1. Construct the Evaluation Model of the Service Quality of Self-Media Online Stores

Based on the coding in Figure 1, this paper constructs the service quality index evaluation system for self-media online stores, including the target layer, 3 preparation layers and 9 index layers.

2.2. Construct Comparison Matrix

In order to increase the accuracy of determining the importance of factors, a questionnaire survey with a total of 24 questions is used to obtain the relative importance degree of factors. The questionnaires are distributed through social software. Then, the weight of each point at each level is calculated by AHP according to the content of the questionnaires. A comparative discriminant matrix is constructed by comparing the importance of each factor in the same layer to that in the upper layer.

2.3. Hierarchy Single Ranking and Consistency Test (calculating the weight value of each index)

Hierarchy single ranking is defined as the relative weight of each factor in each judgment matrix against its criteria. This process is carried out from the highest level to the lowest level.

Step 1: Calculate the consistency index CI

$$CI = \frac{\lambda_{max} - n}{n - 1}$$

Step 2: Determine the corresponding average random consistency index RI by looking up table

Step 3: Calculate the consistency ratio (CR) and make judgment

$$CR = \frac{CI}{RI}$$

When $CR \leq 0.1$, it is considered that the consistency of the judgment matrix is acceptable, that is, it passes the consistency test. When $CR > 0.1$, it is considered that the judgment matrix does not meet the consistency requirement, and the judgment matrix should be revised.

The study is undertaken to acquire the degree of importance between factors by questionnaires. In order to ensure the authenticity of data, the consistency test is adopted as the standard to test the validity of questionnaire. Therefore, consistency test is conducted on all questionnaires first. A total of 120 questionnaires are collected in this study, of which there are 106 questionnaires tested for consistency. The effective recovery rate of questionnaires is 88%.

2.4. Weight Calculation

The weights of the valid questionnaires are calculated by Yaahp software, and the arithmetic average of the weight results of all questionnaires is obtained, as shown in Table 1.

Table 1 Results of AHP

Evaluation Factors	Weight	Evaluation Index and Weight	Evaluation Index and Evaluation Relative Weight of Factors	Relative Weight to the Overall Goal	Total Ranking
Pre-sale Service	0.2605	Promotion Method	0.6232	0.1623	3
		Product Introduction	0.2395	0.0624	5
		Means of Competition	0.1373	0.0358	7
In-sale Service	0.6333	Sales Method	0.2829	0.1791	2
		Product Quality	0.6434	0.4075	1
		Product Source	0.0738	0.0467	6
After-sale Service	0.1062	Business Attitude	0.5889	0.0624	4
		Logistics Service	0.2519	0.0267	8
		Return and Exchange	0.1592	0.0169	9

$$\frac{CI}{RI}$$

According to the formula $CR = \frac{CI}{RI}$, $CR < 0.1$ is calculated by the analytic hierarchy process software, which passes the consistency test.

As can be seen from Table 1, in the three dimensions of service quality of self-media online stores, in-sale service (0.6333) is the main factor that consumers consider when shopping on self-media websites. Most of self-media producers are grassroots, so the distance with consumers has been narrowed. Compared with the single reply service of traditional online stores, self-media online stores provide more diversified services, such as short videos and live broadcast, which enables consumers to understand the products more directly. Therefore, the service in sale is of vital importance. The pre-sale service (0.2605) is equivalent to a product promotion book, which can make consumers have a consumption expectation and pave the way for the in-sale service. Most of the products sold do not support "no reason for 7 days" and are purchased during preferential promotion, so after-sale service (0.1062) is not concerned by consumers as the main factor. In the pre-sale service dimension, promotion method (0.6232) has the highest weight, which is higher than product introduction (0.2395) and means of competition (0.1373). Different from the traditional way of network product promotion, the product introduction of self-media online stores is mainly embedded with product information in the form of short videos, which are then embedded in the main page of Toutiao recommendation column. By this way, the exposure rate of products will be effectively improved. In the process of product promotion, product introduction and competition will be carried out alternately, and the weight of promotion method is higher than the other two factors.

In the In-sale service dimension, product quality (0.6434) has the highest factor weight, which indicates that with the popularization and application of mobile consumption, consumers' concept of online shopping is also upgrading, and product quality begins to be valued. For example, a netizen in Shenzhen has been following a short video shot by a self-media in Shandong Province and put forward the idea of buying vegetables. However, the vegetables in the garden were only to meet the needs of the family and were not sold to the public. Forced by the strong demand of consumers, the video company charged 120 yuan for vegetables according to the market price, and the buyer was responsible for up to 300 distribution fees. Nevertheless, the buyer was satisfied with this transaction simply because of the quality of the product. At the same time, self-media also begins to pay attention to strict quality control, personally selects products to ensure product quality. Therefore, product quality has a higher weight in self-media online stores than the other two factors, and ranks first in the overall index.

In the dimension of after-sale service, the weight factor of business attitude (0.5889) is higher than that of logistics service (0.2519) and return and exchange (0.1592). The main reason is that most of the customers who buy

products from the self-media online stores are also fans of the self-media producer. If the after-sale service is not good, the amount of short video playback will be directly affected, and even a bad comment will affect the next sale. Therefore, business attitude is crucial in after-sale service.

On the whole, the top three of the nine sub elements are product quality (0.4075), sales method (0.1791) and promotion method (0.1623). The first two elements are owned by the dimension of in-sale service, while the promotion method is owned by the dimension of pre-sale service. This result is almost consistent with the result of key word frequency analysis, so it is shown again that product quality, sales and promotion methods are the most important factors in responding to the service quality of self-media online stores. In other words, the service quality still needs to be improved based on above factors for the sustained and stable development of self-media online stores.

3. CONCLUSIONS

As a new shopping mode in the recent three years, it is difficult for consumers to make accurate judgments on the service quality of online stores. Therefore, online comments become the main source of acquiring online stores' information. The online store services of merchants can be improved and standardized by clarifying the evaluation indexes of consumers on self-media online stores. Based on the 6000 online reviews of 6 self-media online stores which have more than 2 million online reviews, 9 project indicators are determined in this study. The weight of each index is defined through analytic hierarchy process (AHP), and the evaluation model for service quality of self-media online stores is constructed. It is shown that product quality is the most concerned factor for consumers. In addition, promotion and sales methods are also the matter of concern to consumers, after all, no one wants to miss good quality products.

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