A Study on the Influence Factors of Consumer Shopping through Live Streaming Based on the Kano Model

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Abstract. With the development of the Internet, live streaming has gradually become a new type of shopping form, which has had a significant impact on consumer's shopping behavior. This study aims to explore the influencing factors of consumer shopping through live streaming, mainly using the qualitative analysis of the Kano model to determine the key elements. By analyzing the Better and Worse coefficients, it is possible to prioritize the functions or needs that can significantly enhance user satisfaction, while avoiding those that may cause a significant decline in user satisfaction. Then, a Better-Worse matrix is constructed to more accurately determine the influencing factors and their ranking.

Keywords: KANO model; Better-Worse coefficient; service optimization.

1 Introduction

With the continuous development of network technology, various e-commerce platforms are vigorously developing live streaming sales marketing models. All platforms in China have launched online live streaming sales marketing methods[1]. What factors will affect consumer purchasing behavior and decision-making? The purchasing behavior of consumers in online shopping mainly includes: demand generation, product browsing and comparison, product selection and payment, and post purchase evaluation[2]. Based on the touchpoints of consumers in the online shopping process, the influencing factors of consumer live shopping are divided into direct and indirect factors[3]. Direct influencing factors refer to the factors that directly affect consumer decision-making when consumers come into contact with products during live shopping. Usually related to the attributes of the product. Indirect influencing factors refer to the factors that influence consumer decision-making when interacting with live streaming platforms, merchants, and hosts during the online shopping process[4].

The Kano model primarily analyzes the nonlinear relationship between user needs and user satisfaction, which is inspired by the dual factor theory of behavioral scientist Herzberg. It differentiates quality factors that cause satisfaction and dissatisfaction[5]. In the Kano model, the basic attributes of product and service quality are divided into five main categories: must-be attributes (M-class), expected attributes (O-class), attractive attributes (A-class), indifferent attributes (I-class), and reverse attributes (R-

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class)[6]. From the research methodology perspective, the Kano model belongs to qualitative research method. This study builds on the quantitative research of the Kano model conducted by many scholars and utilizes valuable analysis methods and tools proposed by relevant scholars to explore the key service elements for service optimization identified by the quantitative Kano model in the live shopping platform. This study starts from the controllable and key factors of customer experience in live shopping platforms and explores the application of the Kano model and the Better-Worse coefficient as the basis for class analysis of customer needs to determine the key service elements and their priority levels.

2 Research Methods

Based on the Kano model's classification of five types of service quality, a structured questionnaire was designed with different dimensions, each containing both positive and negative questions to determine the frequency of the attribute. Finally, the data collected from the Kano questionnaire was sorted, and the total frequency of each element was determined to be the element's Kano category.

Based on the theory of usage and satisfaction and the quality improvement coefficient theory proposed by scholar Matzler, the Better-Worse coefficient was calculated to reflect the impact of the element on increasing the user's positive consumption degree or eliminating the user's unwillingness to consume. The Better coefficient is usually positive, indicating that having a certain element or function will enhance the user's willingness to consume live streaming products. The Worse coefficient is negative. Based on the discussion of Kano attribute classification, the Better-Worse coefficient was calculated by calculating the percentage of the element's attribute classification, to express the degree to which the element can increase the customer's consumption willingness or eliminate the customer's unwillingness to consume.

The formula is as follows:

$$\text{Increased consumption willingness coefficient (better coefficient)} = (A+O)/(A+O+M+I) \quad (1)$$

$$\text{Reduced unwillingness to consume coefficient (worse coefficient)} = -(O+M)/(A+O+M+I) \quad (2)$$

3 Empirical Analysis

3.1 Questionnaire Design

Through interviews with consumers and research on relevant theories, 18 service quality elements were determined[7]. See Table 1, left-hand column, for details. The questionnaire is divided into two parts. The first part is the basic information of the respondents, and the second part is the Kano's related service quality elements questions. Among them, the first part mainly includes: age, gender, industry, educational level,

and personal income. The second part sets questions related to each service quality element from both positive and negative aspects.

3.2 Data Processing

This article uses the network platform to distribute questionnaires and conduct surveys on different customer groups[8]. The surveyed number is about 600people, and 587 sets of data were obtained. 13 sets of invalid data were excluded, and finally, 574 sets of effective data were obtained. The survey response rate is 97.8%, and the effective rate is 95.7%. The collected data was analyzed and processed, and the Kano evaluation value of each element was analyzed. The classification of the indicator was determined based on the principle of highest frequency. As shown in Table 1, the answers that contradict (Q class) should be discarded.

Table 1. Analysis of KANO Demand for Consumer Live Shopping.

NO.	Impact Type	Impact Factors	M	O	A	I	R	Q	KANO Classification
I1	Direct Impact	Cost performance ratio of goods	150	185	80	110	0	0	O
I2		Product promotion situation	115	225	150	30	0	0	O
I3		Detailed Product Introduction	217	130	100	90	0	0	M
I4		Ranking Position of Product Link	140	120	145	165	0	0	I
I5		Product display details	155	180	75	120	0	0	O
I6		Convenient product search	125	140	165	125	0	0	I
I7		Product evaluation	233	120	75	83	0	0	M
I8	Indirect effect	Live barrage recommendation	190	140	125	130	0	0	M
I9		User shopping satisfactiony	155	140	125	85	0	0	M
I10		Consistency between store and product sales types	85	165	175	75	0	0	A
I11		Live streaming platform visibility	90	147	180	125	0	0	A
I12		Payment security	180	80	120	150	0	0	M
I13		Personal privacy protection	210	80	170	95	0	0	M
I14		The complexity of the purchasing process	140	90	180	100	0	0	I
I15		Anchor popularity	122	217	89	80	0	0	O
I16		Anchor credibility	183	178	88	67	0	0	A
I17		The anchor provides detailed product explanations	150	135	160	110	0	0	A
I18		Recommended products by the anchor	150	145	165	90	3	0	A

From the above results, it can be seen that:

The detailed introduction of I3 products, I7 product reviews, I8 live streaming bullet screen recommendations, I9 user shopping satisfaction, I12 payment security, and I13

personal privacy protection are all essential attributes (M); The cost-effectiveness of I1 products, promotion status of I2 products, display details of I5 products, and popularity of I15 anchors are all expected attributes (O); The consistency between the I10 store and product sales type, the popularity of the I11 live streaming platform, the credibility of the I16 anchor, the meticulousness of the I17 anchor's product explanations, and the product recommendations of the I18 anchor all belong to the charm factor (A); The ranking position of I4 product links, the convenience of searching I6 products, and the complexity of the I14 purchase process belong to the indifference influencing factors (I); No reverse quality elements were found.

Based on the survey results, organize the data and calculate the average value of the better coefficient as 0.52 and the average value of the | worse | coefficient as 0.56. The better and worse coefficients of each influencing factor are shown in Table 2.

Table 2. Best and Worse coefficients of various influencing factors on consumer live shopping.

NO.	Impact Type	Impact Factors	BETTER coefficient	WORSE coefficient
I1	Direct Impact	Cost performance ratio of goods	0.50	-0.64
I2		Product promotion situation	0.72	-0.65
I3		Detailed Product Introduction	0.43	-0.65
I4		Ranking Position of Product Link	0.46	-0.46
I5		Product display details	0.48	-0.63
I6		Convenient product search	0.55	-0.48
I7		Product evaluation	0.38	-0.69
I8	Indirect effect	Live barrage recommendation	0.45	-0.56
I9		User shopping satisfactiony	0.52	-0.58
I10		Consistency between store and product sales types	0.68	-0.50
I11		Live streaming platform visibility	0.60	-0.44
I12		Payment security	0.38	-0.49
I13		Personal privacy protection	0.45	-0.52
I14		The complexity of the purchasing process	0.53	-0.45
I15		Anchor popularity	0.60	-0.67
I16		Anchor credibility	0.52	-0.70
I17		The anchor provides detailed product explanations	0.53	-0.51
I18		Recommended products by the anchor	0.56	-0.54

4 Building a Consumer Online Live Shopping Influence Factor Better-Worse Matrix

In the Kano model, the Better-Worse matrix is a four-quadrant matrix diagram with the intersection of the Better coefficient and worse coefficient as the origin[9]. In this matrix, the elements are distributed in the four quadrants of the matrix diagram according to their coefficients. The four quadrants are arranged counterclockwise and are called the first quadrant, the second quadrant, the third quadrant, and the fourth quadrant.

From the first quadrant to the fourth quadrant are the willingness factors (O), the charisma factors (A), the indifferent factors (I), and the must factors (M). Based on this, the initial analysis of the data statistical results is conducted.

As shown in Figure 1:

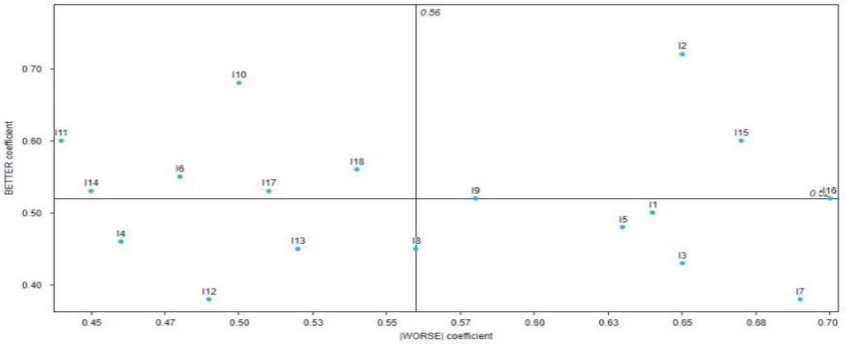

Fig. 1. |Worse| coefficient and Better coefficient quadrant diagram.

The factors falling within the first quadrant have higher values of the Better coefficient and the absolute value of the Worse coefficient, as shown in Figure 1. I2, I9, I15, and I16 are willingness factors. When these factors are satisfied, the user's consumption enthusiasm will increase, and vice versa, the user's consumption enthusiasm will decrease.

The elements falling into the second quadrant have high Better coefficient values and low Absolute Worse coefficient values, as shown in Figure 1. I6, I10, I11, I14, I17, and I18 are charm factors. When these factors are not satisfied, the user's online shopping intention will not decrease. Conversely, the consumer's shopping intention will greatly improve.

The factors falling within the third quadrant have low values for the Better coefficient and absolute Worse coefficient, as shown in Figure 1. I4, I12, and I13 are indifference factors, and whether or not the live shopping platform provides these factors will not affect user satisfaction.

The elements falling within the fourth quadrant have low values for the Better coefficient and high absolute values for the Worse coefficient, as shown in Figure 1. Factors such as I1, I3, I5, I7, and I8 are essential. When the live shopping platform provides these factors, user satisfaction will not increase. Conversely, user satisfaction will significantly decrease.

According to Kano's principle, the order of factors that affect consumer online live streaming shopping is: (M) class>(O) class>(A) class>(I) class[10]. Based on the absolute values of the Better coefficient and the Worse coefficient, which are greater than 0.52 and 0.56 respectively, as shown in Figure 1, it can be seen that in terms of promoting customer consumption enthusiasm, factors such as I2, I10, I11, I15, and I18 are more likely to promote customer purchases. From the perspective of enhancing customer demand for live shopping, factors such as I3, I17, I13, I10, and I11 can be seen as key factors in enhancing customer demand and promoting consumption. Combining the direct and indirect impacts on consumer live shopping, the direct influencing factors

I3>I2, and the indirect influencing factors I15>I10>I11>I17>I18>I13 are for reference only.

5 Conclusion

This article conducts qualitative and quantitative analysis of the relevant elements of 18 live streaming platforms based on the Kano model and better word coefficients, combined with direct and indirect influencing factors. Quantitatively distinguish the priority sequence of different elements under each Kano attribute by applying the Better Worse coefficient matrix diagram. We have accurately identified the factors that influence consumer shopping enthusiasm on live streaming shopping platforms, and determined the priority of these factors. The research results are only for reference by subsequent researchers.

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