

Dimensions and focus of consumer perceived value in blind box economy: An empirical study based on web text analysis

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Abstract: With the increasing of living standards, Chinese people's entertainment and social ways are also constantly updated and iterated. In recent years, a kind of entertainment commodity called "blind box", hand-made dolls have been brought into the vision of the majority of consumer groups from the niche market, and have grown rapidly in the commodity market, becoming the subculture circle of the Z era. In order to explore the reasons for the popularity of blind boxes, a framework of consumer perceived value of blind boxes was constructed on the basis of literature review, and the results found that consumers pay more attention to its functional value than cognitive value. Therefore, it is hoped that while enriching consumer perceived value, it can also provide effective suggestions for the future operation and development of blind box industry.

Key words: blind box economy, perceived value, functional value

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In recent years, many emerging cultural trends and consumption hotspots have originated from the Generation Z subculture. Observing how these subcultures have become popular, it can be found that to grasp the subculture of Generation Z is to grasp the opportunities of new era consumption. Since 2019, the continued popularity of the blind box economy is a typical representative of Generation Z's consumption pattern. Therefore, it is valuable to study the value perception of blind box consumers.

1.Literature Review

1.1.Blind Box

The origin of the blind box can be traced back to Japan's Fukubagu, which was introduced to China in the early 1990s in the form of collection cards and quickly became popular. With the popularity of fashion toys, businesses combine the IP of fashion toys with the shopping method of Fu bag to create a new form of blind box. The blind box is similar to a lottery, where merchants put various anime, movie accessories or designer dolls into sealed boxes, and consumers can only see the specific goods they have obtained after opening them.

In view of the fact that contemporary young people tend to pursue experiential cultural and entertainment consumption, blind boxes are usually carried by fashion toys with IP, and the process of dismantling the blind box is similar to buying a lottery ticket in pursuit of surprise and excitement, which makes blind boxes highly sought after by young people.

At present, the blind box industry is in a stage of rapid development, and the close combination of blind boxes and economic effects makes it a unique economic phenomenon, which has aroused widespread attention in the society, and continues to maintain high heat and discussion on the Internet. Many businesses across the Internet and media fields, with their keen insight into market trends, innovative launch of the "blind box +" model, the development of unique blind box products, attracting the attention of many consumers. Consumers are also happy to share their experiences on social platforms, further boosting the popularity of blind boxes.

1.2.Blind box consumer perceived value

1.2.1.Blind box perceived value

From the perspective of customers, Zeisemore's theory emphasizes that when customers evaluate products or services, they will consider the balance between the benefits they get and the costs they pay. Such evaluation is the key to measure the overall utility of products or services and the key factor to understand customer behavior. For the fashion industry, the perceived value of customers also has an important impact on consumer behavior. At present, only a few researchers have explored the perceived value of blind boxes, and the main focus is on cognitive value. In fact, consumers' perceived value is multi-dimensional, including product quality, service level, consumption environment and many other aspects. In addition, the price of the product and the time invested by the consumer are also important factors affecting the perceived value, and consumers usually evaluate the practical value (i.e., functional value) of the product based on the comparison of the value obtained and the cost.

1.2.2. Blind box consumer perceived value dimension

When discussing the multi-dimensional framework of consumer perceived value, SHETH et al. proposed a model containing five dimensions, namely functional value, social value, emotional value, cognitive value and conditional value. On this basis, SWEENEY et al. further developed the perceived value scale and identified key dimensions such as emotional value, social value and functional value related to price and quality. Based on the existing understanding of the perceived value of blind box consumers, this paper will adopt a four-dimensional classification, including functional value, cognitive value, emotional value and social value.

Although current research tends to focus on the average consumer's perceived value of gaming, the perceived value of consumer groups is actually much more than that. The perceived value of consumers is a multi-faceted concept, which not only includes product quality, service level, consumption environment and other specific content, but also involves the price of products and the time invested by consumers. Consumers often evaluate the utility value (i.e., functional value) of a product based on the value they receive versus the cost they spend. This evaluation process is complex and personalized, and different consumers may have different perceived values for the same product or service based on their own experience and expectations.

First, functional value, which relates to the basic attributes of the product, such as quality, service, consumption environment, as well as price and time cost.

Second, cognitive value, which is related to consumers' novel experience and knowledge pursuit. In blind box consumption, consumers often seek novel and unknown experiences, and this process of exploration and discovery is a value in itself. Curiosity plays an important role in this process, stimulating consumers' curiosity, which in turn influences their purchasing behavior.

Third, social value is reflected in the connection between consumers and specific social collectives, and the utility brought by this connection is an important factor for consumers to consider when choosing blind boxes. In the blind box market, brands often partner with high-profile stars or influencers to use their influence to promote blind box products. By widely sharing the blind box unpacking video on social media, the brand has stimulated the public's interest and enthusiasm for the blind box. In addition, the brand set up vending machines in busy commercial areas, so that consumers in the real world can also experience the craze of blind boxes, whether online or offline, consumers can directly feel the trend of blind boxes.

Blind boxes especially appeal to young people, who are always paying attention to the latest topics and trends, and their social activities are often closely linked with the trends of The Times. Outside of social interaction, they shape their image through purchasing behavior, which is widely discussed in consumer behavior. Consumers choose a product not only based on its own value, but also because of the additional benefits it can bring. These added values, such as the symbol of social status, the display of personal taste, etc., become an important reference for consumer decision-making.

Fourth, emotional value comes from consumers' emotional experience after purchasing products, which is usually divided into two categories: positive and negative. In the context of blind box consumption, researchers have pointed out that blind boxes can meet consumers' material and emotional needs and stimulate positive emotions, such as happiness, surprise and satisfaction. However, if the contents of the blind box fail to meet consumers' expectations, it may also trigger negative emotions, such as disappointment, regret and anger. Such emotional fluctuations are an integral part of the blind box consumption experience, so emotional value is an important aspect of the perceived value of blind box consumers.

2.Data sources and research methods

2.1.Data source and processing

This study focuses on the flagship store of Bubble Mart on Jingdong platform. In the highly competitive fashion market, Bubble Mart, as the largest blind box brand in China, not only leads the blind box trend, but also becomes the first blind box company listed on the Hong Kong stock market in December 2020. The company has not only launched a variety of blind box products, but also launched its own social app - Sorbet, and built a diversified sales network including retail stores, vending machines, online malls, fashion exhibitions and wholesale, which has huge market potential.

In view of the richness and reliability of user reviews on JD.com, this study chooses JD.com as the data source. By screening the user reviews of the top five products in the hot sale and praise list of Jingdong Bubble Mart flagship store, the representativeness of the sample was ensured. Using a web crawler written in Python and the Gooseeker tool, this study collected consumer review data up to June 2024 to provide comprehensive data support for the analysis.

Before data analysis, this study preprocessed the data in order to eliminate the potential impact of invalid information on the analysis results and ensure the quality and consistency of the data. Ultimately, 2,759 valid consumer reviews were collected, which will serve as the basis for the analysis in this study.

2.2.Research Methods

In this study, information related to blind box is extracted from reviews, and the frequently appearing feature words are statistically summarized and analyzed. The collected consumer review texts are systematically summarized, sorted out and analyzed through content analysis, thus revealing each dimension of the perceived value of blind box consumers and their concerns.

2.3.Research results

2.3.1.Analysis of high-frequency feature words

Word frequency analysis is an index to measure the importance of words in a text, and it reveals the focus of text authors. Therefore, this research selects the top 50 feature words with the highest frequency through statistics and sorting out words in consumer reviews, as shown in Table 1.

Table 1 High-frequency characteristic words of consumer evaluations (top 50)

排名	关键词	词频	排名	关键词	词频
1	Like	733	26	Ship	108
2	Appearance	504	27	Repeat	106
3	Jingdong	479	28	Baby	106
4	Good	424	29	Bubble	105
5	Cute	385	30	Sophisticated	103
6	Productpackaging	380	31	Grab	99
7	Workmanship	371	32	Speed	97
8	Look good	340	33	First time	96
9	Genuine	339	34	Next time	94
10	Hide	326	35	Quality	90
11	Texture	257	36	Purchase	83
12	Happy	205	37	Blemish	81
13	Series	194	38	Out	78
14	Bought	180	39	Things	75
15	Very soon	177	40	Ha ha ha	75
16	Verification	177	41	Dimoo	75
17	Logistics	157	42	Gemini	73
18	Want	153	43	Boy	66
19	Two	148	44	Astronauts	66
20	Super	144	45	Pink	64

21	Constellation	139	46	Delivery	57
22	Satisfied	136	47	Praised	57
23	Very good	132	48	Friends	56
24	Special	127	49	Love me	56
25	Express	111	50	Perfect	52

As can be seen from Table 1, most high-frequency words can reflect the characteristics of the perceived value of blind box consumers. From the top ten high-frequency words, we can obviously perceive that consumers are highly concerned about the quality of blind box products. In order to analyze the meaning of each dimension, this study divides the above feature words into four categories: functional value, cognitive value, social value and emotional value, as shown in Table 2.

Table 2 Classification of high-frequency words

Main category	subcategory	High frequency feature words
Functional value	Product quality	Appearance (504), packaging (380), workmanship (371), authenticity (339), texture (257), verification (177), refinement (103), quality (90), perfection (52)
	Product category	Jingdong (479), Bubbles (105), Dimoo (75), Gemini (73), Boy (66), Astronaut (66), Pink (64)
	Service quality	Fast (177), Logistics (157), Express (111), Delivery (108), Speed (97), Delivery (57)
Cognitive value	Curiosity and other psychology	Hide (326), Want (153), Special (127), Baby (106), First Time (96), Out (78), Something (75)
	Social interaction	Horoscope (139), Next Time (94), Friends (56)
Social value	Image building	Series (194), Bought (180), Two (148), Grab (99), Buy (83), Love Me (56)
	Positive emotion	Like (733), good (424), Cute (385), good-looking (340), happy (205), Super (144), good (132), satisfied (86), Hahaha (75), Praise (57)
Sentimental value	Negative emotion	Duplicates (106), Defects (81)

2.3.2.Function value

The data in Table 2 shows that consumers mentioned high-frequency words related to functional value a total of 3908 times in their reviews, accounting for 44.99% of the total word frequency. Based on the classification of functional value by scholars and the data analysis in this study, functional value can be subdivided into three sub-categories: product quality, product diversity and service quality. When consumers discuss product quality, they most often mention "packaging" and "workmanship", which shows that they attach great importance to product quality. At the same time, the emergence of words such as "appearance" and "exquisite" also highlights the importance of visual appeal of products.

In terms of product diversity, Bubbmart's Dimoo line of products is a popular choice in consumer reviews, which indicates that consumers have a high level of trust in well-known brands' popular gaming IP. In addition, consumers' frequent mention of logistics speed reflects their expectation of service efficiency, which becomes an important aspect of service quality perception.

2.3.3.Cognitive value

In our in-depth analysis of consumer reviews, we found that words related to cognitive value appeared frequently, a total of 961 times, accounting for 11.06% of the total word frequency. These words are usually closely related to the psychological experience of consumers, indicating that when consumers buy blind boxes, they are often not only for the commodity itself, but more for the pursuit of psychological satisfaction of exploring the unknown and experiencing novelty.

Psychological research has shown that uncertainty and surprise can greatly enhance consumers' repeat purchase behavior. The designers of the blind box have cleverly set up a variety of different roles and styles in each series of products to meet the needs of consumers seeking freshness and personalization. In the process of collecting blind boxes, consumers can not only experience the fun of collection, but also show their unique taste and personality in the social circle.

Merchants also cleverly take advantage of the "Didro effect" of consumers in their sales strategies, that is, when consumers get a new blind box, they tend to feel dissatisfied and eager to collect more. The success of the blind box lies not only in its product itself, but also in the unique consumer experience and psychological satisfaction it creates. This consumption model with cognitive value as the core has made blind box a great success in the market and cultivated a large number of loyal consumers.

2.3.4.Social value

When analyzing consumer review data, we found that high-frequency words related to social value appeared 1,049 times, accounting for 12.08% of the total. These words reveal that the blind box is not only an entertainment product in the life of consumers, but also an important medium for social interaction and personal image building.

As a social tool, the blind box allows consumers to establish new social connections in the process of buying and exchanging. Through activities such as "sun blind box" and "baby exchange", young people have formed a distinctive blind box culture and circle on social and second-hand trading platforms. The role of this social currency allows consumers to gain a sense of accomplishment and belonging in sharing and communication.

It is worth noting that whether through online communities or offline activities, blind boxes have become an effective way for young people to maintain and expand social relationships. The realization of this social value makes the blind box go beyond the scope of material consumption and become a cultural phenomenon and the embodiment of life style.

2.3.5.Emotional value

In the word frequency analysis of consumer reviews, we noticed that words related to emotional value appeared 2768 times, accounting for 31.87% of the total word frequency. This data shows the importance of emotional value in the blind box consumption experience. Consumers' positive emotional responses, such as "like" and "cute," highlighted the joy and satisfaction the blind box brought them.

However, there were also negative emotional responses, such as "duplicate" and "defect," which directly expressed consumers' dissatisfaction with the product. This dissatisfaction usually stems from the product failing to meet their expectations and thus failing to meet the standard of functional value. This feedback underscores the importance of product quality in the minds of consumers.

In order to show the distribution of emotional value of blind box consumers, this paper analyzed the Emotion of the review text with the help of emotion software and drew a Wino chart. The larger the proportion, the more common the emotion would be. The total positive emotions accounted for 76.11%, indicating that consumers generally hold positive emotions towards the blind box, and 28.31% of consumers in the positive emotions express warm emotions, as shown in Figure 1.

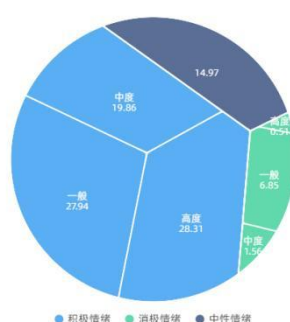


Figure 1. Winot Diagram of blind box consumer sentiment analysis

Study, work, life and other multiple pressures make the loneliness and anxiety of contemporary young people follow, but the reality requires them to carry out rational emotional management, they need to find the object of their inner desire, so the blind box has become one of the simple and rational ways for them to digest negative emotions.

From the word frequency statistics and the classification of high-frequency words, the perceived value of blind box consumers mainly includes functional value, cognitive value, social value and emotional value. This verifies the hypothesis of this study on the composition of consumer perceived value. However, contrary to expectations, consumers are most concerned about functional value, especially the quality of products, rather than cognitive or social value. This shows that

consumers still maintain a rational attitude when buying products.

For merchants, providing core functional value, especially ensuring product quality, is a key strategy to attract and maintain consumer interest. This means that regardless of the marketing and social value of the blind box, it is the quality and functionality of the product itself that ultimately determines consumer satisfaction and loyalty.

2.3.6 Semantic network analysis

In order to more intuitively show the components of the perceived value of blind box consumers and their interrelationships, this study uses ROST NAT46 software to analyze the semantic structure of the identified high-frequency feature words, and builds a semantic network diagram accordingly. The network diagram presents a radial structure, in which words closer to the center are more closely related to the core nodes, as shown in Figure 2. This visual approach helps to understand the multi-level perception and evaluation of blind box value by consumers.

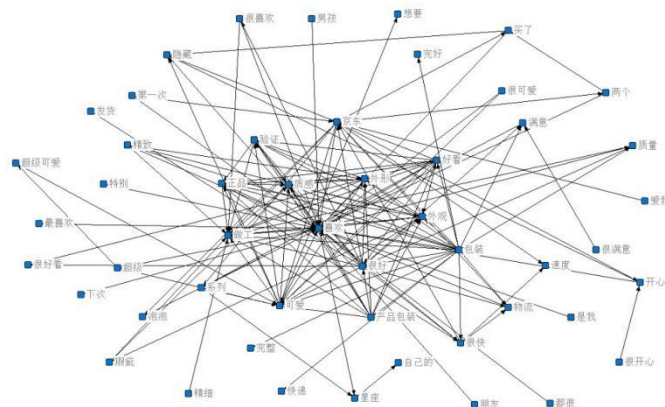


FIG. 2 Semantic network diagram of blind box consumers

Figure 2 shows that the words "like" and "texture" are located at the center of the semantic network with a large number of dense connecting lines around them, indicating that these words are central elements of consumers' perception of the value of the blind box function and occupy a dominant position in the semantic network. This shows that functional value occupies a significant dominant position in the perception of blind box consumers.

Nonetheless, the other three types of perceived value - cognitive value, social value, and emotional value - also occupy a portion of the web, suggesting that they also play an important role in consumer perception, and their importance should likewise not be underestimated. These value dimensions together constitute a comprehensive consumer perception of the blind box.

3 Research conclusions and operational implications

In order to further demonstrate the specific dimensions and focus of blind box consumers' perceived value, this paper draws a chart based on the research results, as shown in Figure 3.

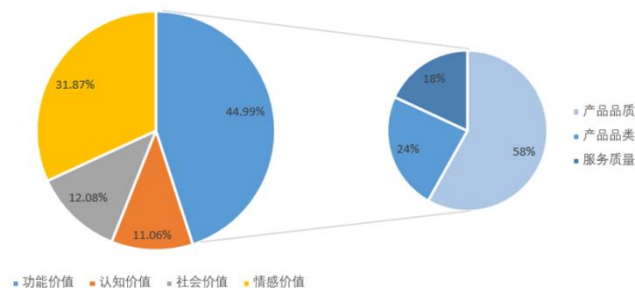


FIG. 3 Dimension of blind box consumer perceived value research

Figure 3 shows the distribution of perceived value of blind box consumers, from which it can be intuitively seen that consumers pay attention to different values. While all four dimensions of value are represented, functional value is clearly what consumers pay the most attention to, a finding that diverged from previous expectations based on social phenomena.

The results of the study revealed that consumers attach great importance to product quality, especially the frequent

occurrence of words such as "workmanship" and "texture", indicating that consumers attach great importance to the quality of the blind box, they expect the blind box not only to be attractive, but also to have good quality.

This conclusion helps to correct the misconception that some blind box merchants may have, that consumers do not care about the quality of the product itself. It reminds businesses that improving the quality of blind boxes is the key to attracting and retaining consumers. In addition, the timeliness of logistics is also an important consideration, which not only requires the protection of goods during transportation, but also requires ensuring efficient transportation.

The main consumer group of blind boxes is concentrated in young women in metropolitan areas, who are adaptable to new trends and willing to pay for interest. However, the blind box is not all they are interested in, and any fad product may face a temporary popularity.

In order to promote the continuous development of the blind box industry, the Chinese government has issued a series of policies, such as the "13th Five-Year Plan" market Supervision Plan and the "13th Five-Year Plan" National Science and Technology Innovation Plan, emphasizing strengthening product innovation, developing local brands, enhancing industry competitiveness, and raising product quality standards to standardize the industry order and prevent market chaos. In order to extend the popularity cycle of blind boxes, when businesses target female consumers, blind box design companies need to constantly introduce innovative characters and eye-catching designs to maintain consumer interest. Failure to do so risks losing existing and potential blind box enthusiasts.

In the blind box market, male consumers are also an important group, and their consumption potential has not been fully tapped. By co-branding with popular IP, more male consumers can be attracted to join the blind box collection. Businesses should seize this opportunity to not only expand their share of the male market, but also strive to penetrate the broader market.

In terms of social value, the blind box is not just a commodity, it also carries the function of social interaction and image building. With the increasing social needs, blind boxes can become a medium for social interaction and create an environment that promotes Chinese cultural characteristics. By opening more offline physical stores, blind Box can provide consumers with a good social place to meet their social interaction needs, while also helping to enhance the image and reputation of the blind box brand.

Therefore, while pursuing innovation, blind box businesses should pay attention to the combination of products and culture, strengthen the construction of social value, and constantly improve product quality to meet the emotional needs of consumers. In this way, the blind box industry can better meet the diversified values of consumers and achieve long-term development.

4. Future research direction

The future research can be further discussed from the following aspects: First, this study takes Bubble Mart as an example, and the future research can be extended to other brands of blind boxes to explore whether there are differences between different brands; Secondly, we can study other fashion products except blind boxes to verify the applicability of this research model. Third, by analyzing high-frequency words and key nodes of semantic network, this study concludes that functional value is the core of blind box consumers' perceived value. Future studies can adopt different methods to verify this conclusion, and further explore the specific impact of each dimension on consumers' perceived value. Finally, although this study has identified four dimensions of the perceived value of blind box consumers, it has not yet explored the relationship between these dimensions in depth. Future studies can analyze the interaction between these dimensions in more depth, such as whether emotional value is affected by other value dimensions.

Through the deepening of these research directions, we can understand the perceived value of blind box consumers more comprehensively, and provide theoretical support and practical guidance for the sustainable development of blind box industry.

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