

## Research on blind box packaging design based on consumer psychology

<sup>1</sup>Ruiyu Li, <sup>2</sup>Alber Young Choi

<sup>1</sup>Doctoral Candidate, Dept. of Communication design, Hanyang Univ., Korea

<sup>2</sup>Prof., Dept. of Communication design, Hanyang Univ., Korea

E-mail 949126464@qq.com, aychoi@hanyang.ac.kr

### Abstract

A blind box is a kind of sales method in that you can only get the product information by opening the package. In 2019, blind box products began to grow rapidly in the Chinese market, and gradually formed a special "blind box economy". The particularity of blind box products is that driven by consumers' curiosity, consumers' purchasing behavior can be directly induced by the visual and tactile perception of commodity packaging. Therefore, it is necessary to explore the psychological needs of consumers and master the blind box packaging design elements under the influence of consumer psychology. This paper takes figurine blind box packaging elements as the research scope and Chinese blind box consumers as the research object. Through market research and literature study, We are designed to conduct a questionnaire survey and SPSS empirical study to find out the differences in the preferences of different consumer temperament types for blind box packaging, taking the characteristics of blind box products and consumer psychology as the relevant theoretical background.

The research results show that among the blind box consumers, choleric type consumers predominate, the color of the blind box packaging presents red, orange, and yellow preference, and the material presents metal, and plastic preference. The shape of the blind box shows a preference for special shape.

**Keywords:** Blind box, Package Design, Consumer Psychology, Temperament

## 1. INTRODUCTION

With the development of the times, people pay more and more attention to the multiple experiences of things, consumers are not only concerned about the results of consumption but also pay more and more attention to the experience of the consumption process. Consumers in the blind box product purchase process will produce a great sense of anticipation and an unknown sense of fun, prompting the rapid development of the blind box market in recent years. In addition to the brand effect of the product itself, the packaging of the product plays a crucial role in the sales of blind boxes. This paper analyzes the theory of consumer psychology, takes human temperament as the theoretical basis of one of the factors affecting consumer psychology, and explores the classification characteristics of temperament in consumer psychology and its relationship with packaging design. The questionnaire survey analyzes the data under the influence of different consumer psychology to draw the preference for blind box packaging design. To stimulate consumer motivation and increase the commercial value of the goods through packaging design, to promote the better sales and development of blind box goods.

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Corresponding Author: [aychoi@hanyang.ac.kr](mailto:aychoi@hanyang.ac.kr)

Tel:+82-31-400-5709

Professor, Dept. of Communication design, Hanyang Univ., Korea

## 2. THEORETICAL BACKGROUND

### 2.1 Investigation of Blind box

Blind box culture originated in the United States and flourished in Japan. Blind boxes usually sell figurine as shown in the Figure 1, anime, or movie peripheral products, with the development of the times blind box products also involved in the field of beauty, and so on. Modern packaging design pursues the principle of "transparency", that is, consumers can quickly identify the characteristics of the product through the packaging, a good display of the product, and then efficiently expand the promotion of the physical product, but the blind box products are different. The uniqueness of blind box products lies in the random consumption rule of "curiosity" created by blind box packaging. Psychological research has shown that uncertain stimuli increase the occurrence of repetitive behavior, and the form of the blind box is similar to the "gambler's mentality" that makes consumers continue to be addicted to the existence [1]. From the perspective of the macro-consumption environment, in the current era of more affluent material life, the sale of goods has evolved from the sale of goods to the sale of entertainment. In the first "Post-95 Gamers' Chopping Power List" released by Chinese shopping website Tmall.com in 2019, it was shown that blind boxes have become the hottest commodities in China's trendy game world [2].



Figure 1. Figurine blind box

### 2.2 Classification and Characterization of Consumer Psychology

Consumer psychology refers to the psychological activity of consumers in finding, selecting, buying, using, evaluating, and disposing of products and services that are relevant to them [3]. The purpose of the discipline of consumer psychology is to study the phenomena and laws of the psychological activity of people in the process of living and consuming. The psychological characteristics of consumer personality are reflected in all aspects of a consumer's personality, ability, and temperament [4]. According to the perspective of consumer psychology, temperament refers to the typical and stable dynamic characteristics of individual mental activity [5]. The word temperament is derived from the Latin temperament, which originally means proportion, mixture, and admixture. It is one of the most typical and stable psychological traits of human personality. Modern psychology defines temperament as temperament is a stable dynamic characteristic of mental activity that is expressed in people's mental activity and behavior, which is not shifted by the purpose and content of human activity. It includes the speed of reaction, the intensity of the

wave of mental activity, etc. Different combinations of these characteristics constitute the unique personality phenotype of an individual. The humoral theory of temperament was first proposed by Dr. Hippocrates, the founder of Western medicine in ancient Greece, who classified human temperament into four different types choleric, sanguine, phlegmatic, and melancholic [6]. According to the different ratios of four humors in the human body: blood, mucus, yellow bile, and black bile. When a certain body fluid predominates in a person, his or her emotions, reactivity, and behavioral habits will be characterized by this type. The different temperament types and their psychological characteristics, The behavioral characteristics of the four temperament types were summarized by reviewing information and literature [7]. (Table 1)

**Table 1. The behavioral characteristics of the four kinds of temperament types**

	Psychological Characteristics	Consumer psychology and behavioral characteristics
Choleric	Emotional volatility, extroverted personality, lack of patience, easy to emotional.	Their consumer psychology is positive, easily influenced by the packaging of goods, and the selection of goods based on intuitive feelings.
Sanguine	Emotionally rich, Lively and cheerful, enthusiastic and generous.	Their consumption psychology is characterized by strong self-control, careful consideration and tendency to rational consumption Behavior.
Phlegmatic	Calm and steady, good at controlling their emotions, with strong self-control.	Their consumer psychology is characterized by strong self-control, facing many products and their packaging, their interest and their behavior is easily influenced by their feelings the influence of emotions.
Melancholic	Have a strong sense of emotion, delicate, persistent, easy to be sentimental.	Their consumer psychology is timid, slow to respond to commodities and their packaging, and considers more when purchasing commodities.

### 2.3 Measurement of Temperament Type Determination Methods

There are many ways to measure temperament types, among which the Temperament Measurement Scale compiled by renowned Chinese developmental psychologists Zhang Tuoji and Prof. Chen Huichang is widely used in China. According to the classical classification of temperament and body fluid theory, this scale consists of 60 test questions, 15 questions for each temperament type, and is scored on a 5-point scale, with "+2" for those who are very compatible, "+1" for those who are more compatible, "0" for those who are uncertain, and "-1" for those who are more incompatible. A 5-point scale was used, with "+ 2" for very consistent, "+ 1" for relatively consistent, "0" for not sure, "-1" for relatively inconsistent, and "- 2" for not consistent at all [8]. The internal consistency reliability of the questionnaire was tested to be 0.7845, and the internal consistency coefficients of each latitude ranged from 0.5987 to 0.7316, which reached the level of significance [9]. so it is proposed to use the scale in this study of temperament type measurement to determine the temperament of the participants of the questionnaire.

### 2.4 Blind Box Packaging Design and Consumer Psychological Correlation Understanding

Packaging is a bridge between goods and consumers and is an important way to display goods information and induce consumer behavior. In packaging design, consumer-centered, maximizing the stimulation of consumer visual information reception, to meet the psychological needs of consumers, is a good packaging design. 1943 "Maslow's hierarchy of needs theory" put forward to illustrate that there is a certain developmental law of human needs, from material to spiritual sublimation [10]. With the development of society and the economy, consumers in the process of completing the consumer behavior, have not only been satisfied with the acquisition of commodity objects itself, while focusing on the quality of commodities, more began to pay attention to the subjective perception of the self, and further the pursuit of commodity packaging symbolized by the interests of hobbies, tastes and the pursuit of packaging design needs to meet the diverse psychological demands of consumers [11]. In addition to the special attributes of the blind box goods, through the psychological analysis of different types of consumers, the psychology of the relevant content is applied to the blind box packaging design, to promote the affinity of goods and consumers. Therefore, in packaging design, designers should master consumer psychology and think about it in combination with packaging design.

### **3. QUESTIONNAIRE PROCESS**

#### **3.1 Background and purpose of the investigation**

This research takes "the blind box packaging design preferences under the influence of consumers' psychology" as the starting point, and conducts a questionnaire survey. The purpose of this questionnaire survey is to analyze and understand the preferences of Chinese blind box consumers in the z era for blind box packaging, and then to propose a reference direction for different consumers' blind box packaging design elements.

#### **3.2 Questionnaire method**

The questionnaire survey of this study was conducted online from July 10 to 13, 2022, targeting 172 Chinese blind box consumers in the z-era. The first part of the questionnaire utilized the "Sixty" Temperament Scale compiled by Prof. Chen Huichang, a famous developmental psychologist in China, to determine the temperament types of the 172 Chinese consumers who received the questionnaire in Era Z. The second part of the questionnaire was about the consumer's preference for the packaging elements. The second part of the questionnaire is the test scale of consumers' preference for packaging elements, i.e., the selection of packaging element samples, which is mainly divided into the following three parts: 13 color samples, 4 packaging material samples, and 6 packaging shape samples. The data collected from the questionnaire survey was coded using an Excel program design and it was subjected to one-way ANOVA using SPSS program.

#### **3.3 Selection of the questionnaire sample**

**Selection of color samples.** Mr.Su Xianghong, vice president of the trade union of Huzhou Teachers' College in China, summarized the basic color words in the category of colors observed and perceived by the modern Han Chinese as "'red, yellow, white, black, green, blue color, gray, purple, brown, brown, orange, gold, silver, pink'" in 14 categories. Considering the operability of the research, according to the Munsell color system (Figure 2) and the current color research of the existing blind boxes in the Chinese market, the author finally selected "red, pink, orange, yellow, green, blue, purple, black, white, gray, brown, gold, silver" , a total of 13 color samples for this study.(Figure 3)

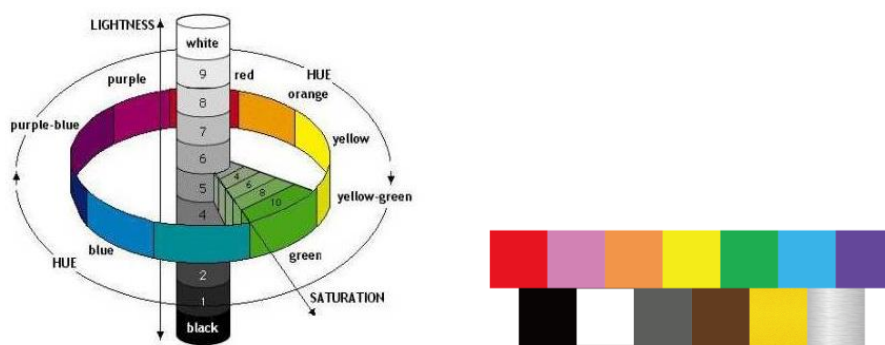


Figure 2. Munsell Color Stereo Hue Circle Figure 3. Questionnaire color sample

**Selection of material samples.** According to the research and summary of the blind box materials appearing in the Chinese market, the four most common materials in the market, paper, plastic, metal, and polyvinyl chloride, were selected as the material samples for this study. (Table 2)

Table 2. Questionnaire material samples

Paper	Plastic	Metal	Polyvinyl Chloride
			
			

**Selection of shape samples.** According to the research summary of the blind box shape appearing in the Chinese market, the six most common forms of square, rectangle, polygonal, spherical, cylindrical, polygon and special-shape in the market were selected as the morphological samples for this study.(Table3)

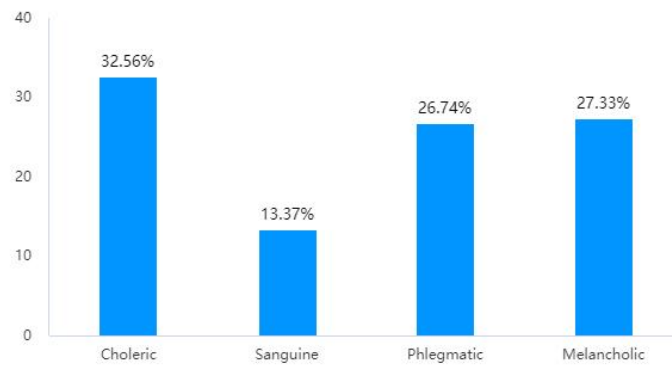
Table 3. Questionnaire shape samples

Square	Rectangle	Spherical	Cylindrical	Polygon	Special-shape
					

## 4. ANALYSIS OF QUESTIONNAIRE RESULTS

### 4.1 Statistical analysis of the questionnaire survey

The percentage of each type of surveyed consumers is shown in the figure: 56 people are defined as choleric, while the number of the sanguine group is 23. Also, the data of phlegmatic and melancholic is 46 and 47 respectively.(Figure 4)



**Figure 4. Percentage of respondents' temperament type**

#### 4.2 One-way ANOVA results

One-way ANOVA is a method of analyzing the results of a one-way test to test whether the factors have a significant effect on the results of the test. Which is when the P value is greater than 0.05 when there is no significant difference when the P value is less than 0.05 when there is a significant difference, and when the P value is less than 0.01 when there is a particularly significant difference. And the larger the mean Mean value represents the more significant difference.

Table 4 is a data analysis on color preference. One-way ANOVA Analysis of Variance was used to study the variability of the four temperament types for the 13 colors. In addition, the remaining 10 items showed significance ( $p < 0.05$ ), except for Silver, which showed 0.05 level of significance, and all other colors showed 0.01 level of significance. According to the specific comparison of the table data, it can be concluded that choleric consumers prefer red, orange, and yellow. Sanguine consumers prefer red, orange, and blue. Phlegmatic consumers prefer blue, white, and purple. Melancholic consumers prefer white, black and silver.

**Table 4. Color Variation Data Sheet**

	ANOVA					
	Temperament (Mean±Std. Deviation)				F	p
	Choleric (n=46)	Sanguine (n=56)	Phlegmatic (n=23)	Melancholic (n=47)		
Red	4.30±0.87	4.13±0.97	2.22±1.20	2.89±1.20	32.101	0.000**
Pink	3.22±1.36	3.29±1.33	3.09±1.12	3.02±1.21	0.416	0.742
Orange	4.35±0.71	4.46±0.66	3.26±1.05	3.55±1.02	18.676	0.000**
Yellow	4.04±1.15	3.46±1.14	2.35±1.15	2.36±1.13	21.951	0.000**
Green	3.54±1.29	2.82±1.21	3.43±1.04	3.43±1.10	3.926	0.010**
Blue	2.43±1.54	4.21±0.82	4.13±0.81	3.79±1.00	25.020	0.000**
Purple	3.35±0.97	3.70±1.09	4.13±0.87	2.53±1.38	13.745	0.000**
Black	2.67±0.99	2.86±1.35	2.96±1.19	4.09±1.04	14.195	0.000**
White	3.17±1.34	3.46±1.28	4.26±1.10	4.11±0.96	7.173	0.000**
Grey	3.13±1.15	2.50±1.32	2.57±0.99	2.83±1.31	2.452	0.065

Brown	3.26±1.16	2.32±1.36	2.48±1.08	2.96±1.23	5.619	0.001**
Gold	3.72±1.00	3.57±1.19	3.52±1.04	3.49±1.16	0.359	0.783
Silver	3.59±1.11	3.63±1.18	3.57±1.08	4.26±1.13	3.806	0.011*

\* p<0.05 \*\* p<0.01

Table 5 is a data analysis on material preferences. One-way ANOVA Analysis of Variance was used to investigate the variability of the four temperament types for the four material samples, as seen in the table above: the different Temperament samples showed significant (p<0.05) for all four materials, meaning that all were different and all showed 0.01 level of significance. All of them showed 0.01 level of significance. According to the specific comparison of the table data, it can be concluded that choleric consumers prefer metal and plastic. Sanguine consumers prefer paper and polyvinyl chloride. Phlegmatic consumers prefer polyvinyl chloride and paper. Melancholic consumers refer metal and paper.

**Table 5. Material Variation Data Sheet**

	ANOVA					
	Temperament (Mean±Std. Deviation)				F	p
	Choleric (n=46)	Sanguine (n=56)	Phlegmatic (n=23)	Melancholic (n=47)		
Paper	3.33±1.10	3.64±1.10	4.30±0.93	4.11±0.89	6.941	0.000**
Plastic	3.96±1.33	3.00±1.26	3.09±1.08	2.87±1.17	7.349	0.000**
Polyvinyl Chloride	3.37±1.18	4.27±0.96	4.26±0.92	3.15±1.04	13.689	0.000**
Metal	4.02±1.11	3.39±1.34	3.04±1.40	4.17±0.87	7.298	0.000**

\* p<0.05 \*\* p<0.01

Table 6 is a data analysis on shape preferences. One-way ANOVA Analysis of Variance was used to investigate the variability of temperament for the six shape samples. From the above table, it can be seen that different temperament samples do not show significance for cylindrical, polygon (p>0.05), while the remaining four samples show significance (p<0.05), among which for square and rectangle show 0.05 level of significance, and spherical and specialshape show 0.01 level of significance. According to the specific comparison of the tabular data it can be concluded that choleric consumers prefer special-shape. Sanguine consumers prefer polygons. Phlegmatic consumers prefer rectangle. Melancholic consumers prefer rectangle.

**Table 6. Shape Variation Data Sheet**

	ANOVA					
	Temperament (Mean±Std. Deviation)				F	p
	Choleric (n=46)	Sanguine (n=56)	Phlegmatic (n=23)	Melancholic (n=47)		





Square	3.70±0.89	3.48±1.24	2.83±1.64	3.66±0.94	3.423	0.019*
Rectangle	3.70±1.01	3.57±1.16	4.09±0.73	4.13±0.74	3.669	0.014*
Spherical	4.07±0.95	4.34±0.77	3.35±1.40	3.43±1.04	9.985	0.000**
Cylindrical	3.50±1.15	3.46±1.26	3.17±1.11	3.21±1.04	0.828	0.480
Polygon	3.76±0.95	3.66±1.21	3.43±1.08	3.62±0.90	0.514	0.673
Special-shape	4.09±1.07	3.43±1.25	2.74±1.21	2.85±1.18	10.926	0.000**

\* p<0.05 \*\* p<0.01

### 4.3 Questionnaire results

Integration of the results of the blind box packaging preference bias questionnaire data for consumers of different temperament types. (Table7)

**Table 7. Summary of the preferences of different consumer psychology types for packaging design elements**

Packaging elements	Temperament type			
	Choleric	Sanguine	Phlegmatic	Melancholic
Color				
Material	Metal, Plastic	Paper, Polyvinyl chloride	Polyvinyl chloride, Paper	Metal, Paper
Shape	Special-shape	Polygon	Rectangle	Rectangle

## 5. DISCUSSION

Through SPSS empirical studies analysis, it is concluded that there are differences in consumer preferences for blind box packaging among different temperament types, and the specific differences are as follows:

First, in the blind box packaging design, the choleric consumers prefer red, orange, yellow in terms of color. The material aspect prefers metal and plastic. Shape is more like special shape.

Secondly, in the blind box packaging design, sanguine consumers prefer red, orange, blue in terms of color. In terms of material, they prefer paper and polyvinyl chloride, and in terms of shape, they prefer polygon.

Third, in the blind box packaging design, phlegmatic consumers prefer blue, white, purple in terms of color. In terms of material, they prefer polyvinyl chloride and paper. In terms of shape, they prefer rectangle.

Fourth, in the blind box packaging design, melancholic consumers prefer white, black, silver in terms of color. In terms of material, they prefer metal and paper. In terms of shape, they prefer rectangle.

## 6. CONCLUSION

With the development of the times, emotional needs that tend to be emotional consumption have become an important part of the consumption process. Therefore, grasping the preferences of blind box consumers



and carrying out targeted packaging design can better adapt to the dynamics and development of the blind box market environment. In this study, a questionnaire survey was conducted to investigate the differences in the preferences of blind box packaging under the influence of different consumer psychologies, to provide design reference directions for blind box packaging design.

This paper shows that the packaging color, material, and shape preferred by each consumer psychology type are different and have a significant differential relationship between them. Among the blind box consumers, choleric type consumers predominate, the color of the blind box packaging presents red, orange, and yellow preference, and the material presents metal, and plastic preference. The shape of the blind box shows a preference for a special shape. Therefore, in the blind box packaging design, designers can use more bright colors, and exotic shapes, to meet consumer preferences, to promote product sales and development.

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