

The influence of choice set size and time-lapse accuracy on E-commerce Decision-Making under different product types

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Abstract. Previous studies have shown that in the case of time restrictions, consumers can indeed stimulate their willingness to buy. However, there is another important influence on the sale of goods-the size of the selection of goods. The conclusions of previous studies on the size of the selection set have diverged. Some scholars believe that consumers can benefit from a wealth of choices, while others believe that they spend a lot of time and effort and fail to find the satisfaction that meets their needs. Thus, the study began with two main factors, studying the influence of the size and accuracy of the selection set on consumers' choice satisfaction and choice difficulty, and adding common commodity categories: hedonistic products and practical products. The study has conducted 3 pre-experiments and one formal experiment. The main purpose of the pre-experiment is to identify specific hedonistic and practical products. In the main experiment, between-subject design of 2 (large selection set, small selection set) $\times$ 2 (milliseconds, seconds) $\times$ 2 (hedonics, utilities) was used. A total of 254 students (133 males and 121 females) were randomly assigned to eight groups. The results of the research ultimately showed that consumers had the best choice satisfaction and difficulty in the large choice set-low time elapsed accuracy (seconds) group and the small choice set-high time elapsed precision (milliseconds). For utilities, consumers are more satisfied with their choices at the large selection set (12 pieces) - low time elapsed accuracy (seconds) setting, and less difficult to select at the small choice set (4 pieces) - high time elapsed precision (milliseconds). For hedonists, under the setting of the small choice set (4 pieces) - high time elapsed accuracy (milliseconds), consumers have higher satisfaction with their choice and lower sense of difficulty in choosing.

Keywords: Choice set size; Time-lapse accuracy; Hedonics; Utilities; E-commerce Decision-Making.

1. Preface

1.1 Basis of Topic Selection

The 21st century is the age of information explosion, and it is the age of the Internet. Perhaps if the time goes back to the 1970s, when Robert and Winton may not have imagined that in a few decades because of their invention of the Internet and the birth of rapid development of the emerging industry - e-commerce. It permeates every aspect of people's lives, and "online shopping" has almost become an essential activity in people's daily lives. With the wave of online shopping more and more roll higher and higher, "618", "double eleven shopping festival" all kinds of promotional activities are endless, while people are immersed in the convenient world of online shopping, the e-commerce companies also racking their brains to earn wealth. Merchants often take advantage of these promotional days, in the form of a countdown to the goods on sale for a limited time, to stimulate consumers' desire to buy. After browsing through several major e-commerce platforms, it can be found that promotional countdowns are designed by different merchants with different precision. Some merchants are precise to "seconds" or even "milliseconds", while others adopt a low-precision countdown method, with "days" or "hours" as the unit. Others count down to "days" or "hours" with low precision. This difference in precision has aroused the desire of many scholars to explore which precision of countdown is more capable of arousing consumers' desire to buy. In addition, there is another important factor for sales - the size of the selection set of goods. Since online shopping can only be presented through pictures or videos, the number of items of the same type on the page often has a crucial influence on the final purchase behavior. Choice set size has been one of the hot topics

studied in many fields. It has been seen as an important factor influencing consumer behavior in the fields of social psychology, consumer psychology, and management, and researchers have all achieved fruitful research results (Yanping Chen, 2019; Yuwen Li, 2019; Lei Liu, Yuhuang Zheng, and Rui Chen, 2015; Tong Liu et al. 2017; Shijian Wang, Liangyan Wang, 2016). For example, Chen Yanping (2019) found in her study that the overloading effect of large choice sets as well as would negatively affect consumers' choice satisfaction, in addition to the moderating model moderates the relationship between choice set size and choice satisfaction with cognitive difficulties having a fully mediating role.

In addition, different consumers will make different consumer decisions when faced with different types of goods. Hedonic and practical products are a common classification in marketing and consumer behavior research. When consumers make purchases, they are inevitably affected by both hedonic and practical product attributes. Some studies have shown that consumers' evaluation and attitude toward products will be influenced by the consideration of these two attributes. And it allows consumers to distinguish products from practicality and hedonicity (Wang Shijian, Wang Liangyan, 2016).

In the face of such a complex online consumption environment, consumer psychology and behavior appear to be more complex and variable than traditional physical transactions in the past. Therefore, analyzing the main factors affecting online consumption decisions and learning what consumers really feel about their psychology is the key to attracting customers to consume, boosting merchandise sales and increasing consumer satisfaction for major e-commerce companies today. Only by choosing the appropriate marketing methods, it is possible to get good result.

Individual's consumption decision involves many aspects, especially choice satisfaction, purchase intention, choice difficulty feeling, choice self-confidence, choice regret and so on. In the process of individual consumption, these factors, as important psychological experiences of consumers, have a significant impact on the final results of individual consumption decisions and sales of merchants (Li Yuwen, 2019). Therefore, this study will investigate the effects of choice set size and time elapsed precision on consumers' choice satisfaction as well as choice difficulty under different product types.

1.2 Purpose of the study

The selection of set size has been a widely debated topic in the field of consumer research. And for time elapsed precision is an emerging research topic in the field of consumption. One is for the discussion of time, and the other is for the study of quantity in space, and both of them have a crucial impact on people's daily online shopping behavior and attitude. There has been no research that combines the two variables to explore the impact on consumers' online consumption decisions. Moreover, in daily life, products are usually categorized in specific ways. The categorization of real goods and pleasure goods is one of the most common types of product categorization.

Therefore, this study aims to investigate whether the interaction of choice set size (large/small) and time elapsed precision (high/low) affects consumer decision making (choice satisfaction/choice difficulty) based on online shopping scenarios. In addition, based on the categorization of hedonic and utilitarian goods, it is investigated whether there is an interaction between time elapsed precision, choice set size and product type on choice satisfaction and choice difficulty, i.e., whether there exists a relatively optimal promotional setting for a certain type of goods.

The practical significance of this study is to help companies understand consumer psychology, which will help e-commerce companies to be able to provide better product display interfaces and bring consumers a better online shopping experience. The theoretical significance lies in exploring whether there exists a more optimal setting with different choice set sizes and time-passing precision for practical and hedonic products, expanding the field of research on the influence of choice set size and time-passing precision on consumer decision-making.

1.3 Literature Review

1.3.1 Research on Time Passage Precision and Choice Set Size

Time passing precision is the representation of time with different accuracies through metric tools (Lu Shuang, 2020). People utilize various timing instruments such as stopwatches and clocks to

measure time objectively. However, in addition to the objective measurement of time, people usually perceive the speed of time from their perspectives. The time perceived by people tends to be faster or slower depending on the mood of the perceiving individual or the importance of an event. In a study by Sackett et al. (2010), it was found that the subjective perception of the speed of time passing had an impact on people's emotional responses. The results of previous studies have shown that different precise units of time affect people's perception of time and ultimately their decision-making behavior (Chengming Jiang et al., 2016). Lewis and Miall (2009) suggested that in different occasions, we measure and estimate different time ranges and need to use different measurement mechanisms to do so. For example, in a 100-meter race, the referee's record of an athlete's performance is often accurate to milliseconds or even smaller units. However, for notifying a meeting, the unit of measurement is usually "days" or "hours", such as "the meeting will start in two hours". And it is easy to realize that we are much less sensitive to hours than to minutes and seconds. That is to say, different precision of time passing will affect people's estimation of time perception (Lu Shuang, 2020). Thus, people have utilized the previous findings to introduce time elapsing precision into the marketing field. In promotional scenarios, time elapsing precision is used as a promotional tool in the form of a countdown to purchase, which promotes consumers' purchase intention by influencing people's emotions. Different time elapsed precision affects consumers' decision-making behavior, and organizing previous related studies, many scholars have explored the influence of time elapsed precision on consumer decision-making from different perspectives. From the perspective of time domination, in the studies of Beatty & Ferrell, 1998; Kwon & Armstrong, 2002, it is found that our decision-making time is negatively correlated with our purchase intention, and the less time we have, the less we can make effective estimation judgments, and the easier it is for us to produce impulsive consumption results. From an emotional point of view, making consumption decisions in a limited amount of time often brings consumers a sense of pressure and tension, which generates an emotional experience related to time pressure and may cause consumers to have the feeling of "regret not buying", which promotes consumers' consumption behavior (Xi Kaiyuan, Wang Xin, Liang Hao, 2019). In Zhu Hui's (2014) study, it was found that the post-purchase emotional response triggered by impulsive buying behavior positively affects customers' post-purchase satisfaction. Again from the perspective of cognitive resources, Chen Jun (2009) concluded through empirical research that when in the same period of time, the faster our perceived time passes, the higher the cognitive load, which in turn affects our decision-making behavior.

Cognitive resource theory also applies to another popular topic in the consumer field, that is, choice set size. Choice set size refers to the number of items that a subject is offered to choose from during the decision-making process. In the field of consumer decision-making, choice set size is considered to be the number of similar items that a merchant offers a certain number of item sets and that a consumer can choose to compare and analyze and ultimately make a purchase (Liu Lei et al., 2015; Shah & Wolford, 2007). In Botti and Lyengar (2004) and Iyengar and Lepper (2000), it was found that when the number of goods in the choice set is higher, consumers consume more cognitive resources, have more difficulty in choosing, and are less satisfied with their choices. In terms of marginal utility, when the number of choices rises, the cognitive cost of evaluating and selecting in the choice process also increases, and the marginal utility of each choice decreases. Therefore, when the number of choice sets exceeds a certain range, the marginal cost will be greater than the marginal benefit, and then the consumer's benefit will be reduced (Shijian Wang, Liangyan Wang, 2016). Moreover, a larger set of choices will lead to a discrepancy between consumers' expectations and reality, thus making delayed decisions. This result has been confirmed in many fields such as electronic products, daily necessities and so on (Chernev, 2006; Chernov, 2005). However, the increasing market competition has led companies to continuously segment their markets, and the variety of goods has increased accordingly, and having a large number of choices is still considered one of the major achievements of modern society (Schwartz, 2012). In a study by Tong Liu et al. (2017), it was found that for online goods, large choice sets would bring higher consumer satisfaction.

Furthermore in a study by Yu-Wen Lee (2019), she combines choice set size with temporal distance to jointly explore how they affect consumers' choice satisfaction as well as their perception of choice difficulty. Temporal distance is one of the dimensions of psychological distance, which is people's perception of how close or far away from this point in time something happened (Xie Chenlan, Ye Yihong, Zhang Zhicong, 2020), and it was found that people's choice satisfaction is higher in small choice sets with small temporal distances, and their sense of choice difficulty is lower; and their choice satisfaction is higher in large choice sets with large temporal distances, and their sense of choice difficulty is lower. Moreover, we know that when the precision of time passing is high, the speed of time flow we perceive is faster, that is, the remaining time we perceive is less, and therefore the time distance is shorter; on the contrary, the corresponding time distance is longer in the case of low precision of time passing (Yen-Ping Gong, Jia-Le Wang, Jia-Jiang Chia, 2020). Therefore, time elapsed precision and choice set size may jointly affect consumers' choice satisfaction as well as choice difficulty when consuming.

1.3.2 The moderating role of product type

Hedonic and practical products are a common type of product classification in marketing and consumer behavior research. According to Dhar and Wertenbroch (2000), hedonic products are those that provide consumers with more experiential consumption, such as movie tickets and cosmetics; while practical products are mainly instrumental and functional, such as fountain pens and USB flash drives. Of course, pleasure goods and practical goods are not one and the same in our daily life. There are many goods that are both hedonic and utilitarian at the same time (Voss, Spangenberg, & Grohmann, 2003). The understanding of hedonic and material goods can be simply summarized as "wants" and "needs". Tangibles tend to take up part of our cognitive resources and correspond to our "cognitive preferences", whereas hedonic goods correspond more to our "affective preferences". Compared with hedonic products, real products are more likely to be overloaded with choice sets, and, consistent with the findings of previous studies, different product types do affect consumers' decisions and attitudes (Shijian Wang and Liangyan Wang, 2016). Wang Shijian and Wang Liangyan also found that for hedonic products, consumers are in a playful mindset and focus on their own preferences when purchasing, and will show a strong tendency to seek variety, so they are more suitable for a large choice set. Once they have enough time to make a decision, people will tend to choose real products after sufficient consideration (Tong Luqiong, 2012). In the experiment of choosing or giving up risky decision-making, domestic scholar Ma Jingjing took computer CDs and music CDs as an example and found that consumers showed different preferences when facing hedonic and practical goods, and compared with hedonic goods, consumers preferred to choose practical goods when giving up risky situations (Ma Jingjing, Ma Xinxin, Zhang Li, 2008). Therefore, when choosing practical products, people show more of a "risk-averse" attitude and make risk-averse choices as much as possible, and Sela et al. (2009) showed that when consumers need to choose products from a large number of choice sets, the advantages of practical products are more obvious than those of hedonic products. From previous studies, most of the explorations of choice set size and different time variables under product type are discussed separately. However, time and quantity may affect different product types simultaneously. Moreover, for the study of time factor and product type, previous researchers usually set the time as recent and short-term, and manipulated it through verbal text. However, such a setting does not seem to be particularly appropriate in online shopping scenarios. In our daily experience of online shopping, merchants usually use short countdowns for promotions, and adopt "short, frequent and fast" promotions, rarely setting the duration of promotions for more than one day. When faced with promotions that do not vary greatly in duration, the precision of time passing has a key impact on consumers' consumption decisions. To summarize, the optimal match between hedonic products and real products is different under different time elapsed precision and choice set sizes, e.g. hedonic products are more suitable for a large choice set while real products are more suitable for a small choice set. Thus product type plays a moderating role in choice set size and time passing precision.

1.3.3 Problem formulation and research hypotheses

It is found from the above studies that choice set size and time-passing precision have been hotly debated in the field of consumption research. Scholars have been inconsistent in their conclusions in the face of the influence of choice set size and time-passing precision on consumption decisions. For choice set size, some scholars believe that the larger the choice set is, the more positive influence it plays on the consumption decision, and the higher the consumer's satisfaction is. While some other scholars stated that a too-large choice set will lead to feelings such as difficulty in choosing, and some may even abandon the choice (Kuksov & Villas-Boas, 2010). In terms of time-passing precision, most previous studies have suggested that at high time-passing precision, people perceive time passing faster and are therefore more likely to engage in consumption behaviors. A small number of scholars have suggested that the sense of urgency brought about by too much time elapsed precision will make consumers less likely to purchase instead (Beatty & Ferrell, 1998; Kwon & Armstrong, 2002b). However, most of the previous studies have focused on consumers' purchase intentions, but few scholars have focused on consumers' purchase experiences. Moreover, there has not been any research on the impact of these two factors on consumers. Therefore, on the basis of previous studies, this paper combines the choice set size and time elapsed precision and introduces the product type (hedonic and practical) to explore how the three factors affect consumers' choice satisfaction and choice difficulty after purchase.

Previous studies have confirmed an inverted U-shaped curve relationship as a function of choice set and satisfaction with the outcome and satisfaction with the process. In addition, in that study, the choice sets were set at four levels of 5 / 10 / 15 / 30, and subjects were allowed to choose from each of the four choice sets and measure their satisfaction, and the results showed that the number of choice sets could only be set between 10 and 15 at most, and that anything greater than 15 would cause choice overload (Reutskaja & Hogarth, 2010). Therefore, this study considered setting the number of choice sets up to a maximum of 15.

Previous research has concluded that both too large a choice set and too much temporal precision take up too much cognitive resources and lead to certain negative feelings. For different product types, purchasing hedonic products requires consumers to think and compare more. In turn, it will consume more cognitive resources of consumers. In summary, this study proposes the following hypotheses based on previous research:

There is a significant interaction between choice set size and time-passing accuracy on choice satisfaction;

H1a: In large choice sets, low time elapsed precision settings make consumers more satisfied with their choices;

H1b: In small choice sets, high time passing precision settings make consumers more satisfied with their choices;

H2: the interaction between choice set size and time elapsed precision on the perception of choice difficulty is significant;

H2a: for large choice sets, low time elapsed precision choice difficulty perceptions are lower;

H2b: for small choice sets, high time-passage precision choice difficulty perceptions are lower.

H3: Product type moderates the interaction effect of choice set size and time-passing precision on choice satisfaction;

H3a: For hedonic products, choice satisfaction is higher for large choice sets and low time-passing precision information;

H3b: for practical goods, choice satisfaction is higher for large choice sets, low-time passing precision information.

H4: Product type plays a moderating role in the interaction effect of choice set size and time-passing precision on the perception of choice difficulty;

H4a: For hedonic products, large choice sets, low time-passing precision information, and lower feelings of choice difficulty;

H4b: For practical goods, small choice sets, high time-passing precision information, and lower feelings of choice difficulty.

2. Research Methods

2.1 Experimental design

A total of 254 subjects were recruited to participate in this online experiment. The experiment adopts a 2 (choice set size: large vs. small) $\times$ 2 (time passing precision: high vs. low) $\times$ 2 (product type: hedonic vs. practical) between-subjects design; dependent variables are choice satisfaction, choice difficulty score; control variables: demographic variables, product type attributes, product display interface, price of the product, discount of the product (compared with the major e-commerce companies' discount settings and set to a more moderate discount: 6.6% off), the context of the experimental setting, and the subjects' online shopping experience.

2.2 Experimental Materials

Pre-test 1: The experimental products were selected from the choice set experimental materials in the previous study: e.g. candies, jams, chocolates, ice cream, etc. And combined with the literature on researching practical and hedonic products initially set the experimental materials of this study as: USB flash drives and chocolates (Liu Lei et al., 2015). The reasons for the choice are as follows: first, the value of USB flash drives and chocolate is not much different and the price is relatively low; second, the degree of consumer involvement in the two commodities is not high, while the degree of consumer involvement refers to: consumer involvement theory, which considers that the degree of involvement is "based on the individual's intrinsic needs, value and interest, the degree of perceived relevance of the individual and the object and the concept of representation, etc.". Involvement is considered to be "based on an individual's intrinsic needs, values and interests, the degree of perceived relevance of the individual to the object, and the representation of the concept" (Gao et al., 2021). Simply put, consumers need to consider how much or how little effort or cost they put into the purchasing process and the degree of match with the individual when purchasing the goods. Third, USB flash drives and chocolates are commonly used items, and individuals do not need to have relevant expertise related to the products, and there is no difference between novices and experts.

Utility and hedonic measurements of USB flash drives and chocolates were conducted prior to the formal experiment, and the hedonic and utility aspects of the products were measured using the utility goods and hedonic goods scales with ten question items selected for use. The scale was a seven-point Likert scale (1=strongly disagree, 7=strongly agree).

Pre-test one collected data through the questionnaire star platform to collect a total of 47 valid data, excluding 14 invalid data, the age of the subjects concentrated in the 18-25 years old. There were 21 males and 26 females. The results of the paired-sample t-test found that there is a significant difference between the subjects' ratings of hedonic and practical judgment of the two groups of products. (USB flash drive: M hedonic = 3.017, M utilitarian = 5.511, $t = -10.281$, $p = < 0.001$; chocolate: M hedonic = 4.111, M utilitarian = 3.655, $t = 2.468$, $p = 0.017$). Therefore, USB flash drive can be used as a practical goods experimental material and chocolate can be used as a hedonic goods experimental material.

Pre-test 2: In conjunction with the open-ended interviews, several attributes about USB flash drives and chocolates were initially identified and it was determined that the experimental materials did not have a clear favorite preference;

Referring to the previous literature and through the questionnaire star platform to publish the attribute survey on USB flash drives and chocolates, the subjects were asked to select from them the three attributes that they were most concerned about when purchasing USB flash drives and chocolates. The questionnaire collected a total of 15 pieces of data, the age of the subjects is concentrated in the age of 18-25 years old, of which 7 are male and 8 are female. The results of the questionnaire show that for USB flash drives, the subjects are more concerned about the memory

capacity and interface type of the flash drive as well as the appearance of the product. For chocolates, the subjects were more concerned about the flavor, cocoa butter content and the shape of chocolates. The specific dimensions under the attributes were set by referring to commonly used shopping websites. And in order to exclude the subjects' brand preference for the products, the trademarks of the experimental products are removed in all the experiments. However, considering the existence of chocolate flavor preference, in order to avoid influencing the final results of the experiment, a total of 12 common chocolate flavors on shopping websites were referenced and released through the questionnaire star. Forty-three subjects were invited to fill in the questionnaire, with the age of the subjects centered on 18-25 years old, 11 males and 32 females. In the questionnaire, subjects were asked to select four flavors from which they preferred, and finally remove the most and least popular flavors and select the two flavors with medium frequency of preference. The detailed frequency results are shown in Table 1:

Table 1. Frequency table of chocolate flavors

Flavors	Frequency	Flavors	Frequency
Vanilla	28	Rum	14
Dark Chocolate	25	Blueberry	7
White Chocolate	25	Cheese	6
Matcha	23	Taro	5
Strawberry	16	Mango	4
Tiramisu	15	Melon	4

Finally, we selected chocolate flavor (strawberry / tiramisu) as the specific dimension of flavor attribute, and referred to shopping websites to select the specific dimensions of the rest of the chocolate attributes, cocoa butter content (45% / 55%), and form (solid chocolate / truffle chocolate). The specific dimensions of the USB flash drive are memory capacity (32G / 64G / 128G), USB interface type (USB2.0 / USB3.0), and product appearance characteristics (simple / creative).

Pre-test 3: Determine the set choice set size, the number of products in the choice set is set to 4, 8, 12 with reference to previous studies. the choice set size number of 4, 8, 12 is quizzed with diversity scores to determine the size of the choice set in the experiment (Liu Lei et al. , 2015). Choice set diversity was measured utilizing a seven-point Likert scale with 3 questions (1 = strongly disagree, 7 = strongly agree). It was also distributed through the Questionnaire Star platform, with a total of 37 data collected as valid data and 4 invalid data excluded, with the age of the subjects centered on 18-25 years old, of which 13 were male and 24 were female. The data results from pre-test three were statistically processed using one-way ANOVA. A one-way repeated measures ANOVA yielded $F(1,36) = 1130.382$, $p = < 0.001$, thus there was a significant difference between the three sizes of choice set diversity scores; a post hoc comparison yielded a significant $p = < 0.001$ difference between the diversity scores for a choice set size of 4 and a choice set size of 12; a difference between the diversity scores for a choice set size of 4 and a choice set size of 8 There is a difference between $p = < 0.001$; there is a significant difference between the diversity scores of choice set size 12 and choice set size 8, $p = < 0.001$. Considering that in the previous study, it was confirmed that there is an inverted U-curve relationship as a function of the choice set with the satisfaction of the outcome and the satisfaction of the process. Setting the choice sets at four levels of 5 / 10 / 15 / 30 and allowing subjects to choose from each of the four choice sets and measuring their satisfaction showed that the maximum number of choice sets could only be set between 10 and 15, and that anything greater than 15 would cause choice overload (Reutskaja & Hogarth, 2010). Considering the final experimental results, the choice set size was finally set to 4 and 12 items.

The dependent variable data were collected using the Consumer Satisfaction Questionnaire (Yanping Chen, 2019) with five questions and standardized alpha(α) reliability coefficient = 0.861; and the Choice Difficulty Questionnaire (Yuwen Li, 2019) with one question. Where the consumer satisfaction questionnaire was calculated as the mean of the sum of the scores of each question.

2.3 Statistical methods

The data obtained from the experiment were statistically processed using the Statistical Package for the Social Sciences SPSS 23.0, and the collected data were analyzed by descriptive statistics as well as multifactor ANOVA.

2.4 Experimental process

This study conducted the experiment of online simulated shopping through the Questionnaire Star platform. Before the experiment began, the subjects were randomly divided into 8 groups. Afterwards, all the subjects divided into groups entered the interface of the corresponding experiment according to the instructions of the main test (according to different groups, different experimental settings and corresponding instructions would be displayed). At the beginning of the experiment, the subjects imagined that they were going to participate in an e-commerce anniversary promotion, and were browsing the promotion page at the moment, and they had a certain amount of money to buy any of the products on the page. Make your choice as quickly as possible according to your situation. Note that when the promotion ends on the page, you may lose your eligibility to buy it or you may be able to buy the item at its original price.

The specific groupings of the experiment are: large choice set-high time passing precision-hedonic products; large choice set-high time passing precision-actual products; large choice set-low time passing precision-hedonic products; large choice set-low time passing precision-actual products; small choice set-high time passing precision-hedonic products; small choice set-high time passing precision-actual products; small choice set-low time passing precision-hedonic products; small choice set-low time-passing precision-actual goods, for a total of eight sets.

Then, the subjects in each group selected a product of their choice as quickly as possible from the displayed set of promotional seconds (this step was designed to give the subjects a real sense of participating in the shopping process). At the end of the experiment, the subjects were asked to fill in the corresponding questionnaires (choice satisfaction, choice difficulty) and to add basic personal information.

The specific experimental process is shown in Figure 1.

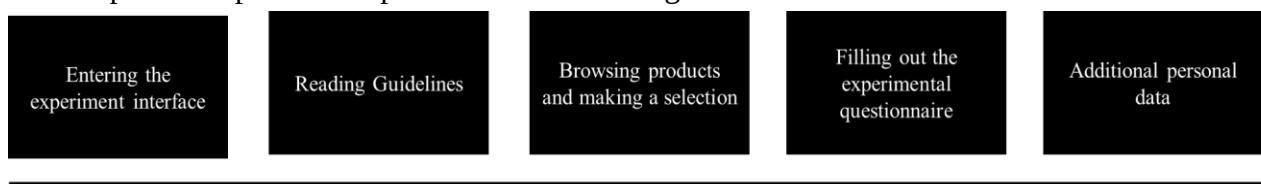


Figure 1 Specific experimental flow chart

3. Research Findings and Discussion

3.1 Results of the study

3.1.1 Descriptive statistical analysis

The experiment was distributed in the form of electronic questionnaires through the questionnaire star platform (enterprise version), and a total of 254 valid data were retrieved. Using the software SPSS23.0 to analyze the descriptive statistics of age, gender, education, monthly disposable amount and the number of monthly online purchases of the subjects in the experiment, the specific results are shown in Table 2:

Table 2. Results of the analysis of demographic variables

Project	Options	Number	Percentage
Gender	Male	133	52.36%
Age	Female	121	47.64%
Academic qualifications	18~25 years old	254	100.00%
	Junior college	63	24.80%
	Undergraduate	183	72.05%
Monthly disposable amount	Graduate students and above	8	3.15%
	1000RMB and below	10	3.94%
	1000~2000RMB	84	33.07%
	2000~4000 RMB	96	37.80%
Monthly Online Purchase	4000~8000RMB	43	16.93%
Project	8000RMB and above	21	8.27%
	1~2 times	69	27.17%
Gender	3~5 times	95	37.40%
	More than 5 times	90	35.43%

According to the table, among the 254 samples, there are 133 male samples, accounting for 52.36%, and 121 female samples, accounting for 47.64%, with little difference in the number of male and female samples; in terms of age range, the experiments choose subjects between 18 and 25 years old in order to control for the additional variables brought about by different ages; in terms of the educational level of the subjects, there is a centralized distribution of the subjects in the college, secondary and higher education levels, controlling to a certain extent for the additional variables brought about by different educational levels; in terms of monthly disposable amount, the number of people is centrally distributed between 1000 and 4000 yuan, with 84 samples of 1000 to 2000 yuan, accounting for 33.07%. To a certain extent, the additional variables brought by different education levels are controlled; in terms of the monthly disposable amount, the number of people is concentrated in the range of 1000~4000 RMB, with 84 samples of 1000~2000 RMB, accounting for 33.07%, and 96 samples of 2000~4000 RMB, accounting for 37.80%; as for the number of times that subjects have made online purchases, the experiments choose subjects with certain online shopping experience. certain online shopping experience of the subjects.

3.1.2 Hypothesis testing

Descriptive statistics are performed on the sample data, and the results are shown in Table 3:

Table 3. Choice satisfaction scores of practical goods and hedonic goods under different choice set sizes and time passing precision.

Selection set size	Time elapsed accuracy	Product Type	M	SD	N
Large	milliseconds	Enjoyment	4.26	0.76	28
		Practical	4.76	0.99	25
	Seconds	Enjoyment	6.01	0.89	25
		Practical	5.92	0.78	46
Small	milliseconds	Utility	6.18	0.67	44
		Practicality	5.88	0.72	28
	seconds	Enjoyment	5.31	0.44	26
		Practicality	5.36	0.61	32

With choice satisfaction as the dependent variable, consisting of 2 (large choice set vs. small choice set) $\times$ 2 (high time-passing precision vs. low time-passing precision) $\times$ 2 (real goods vs. hedonic goods), revealed a significant main effect of choice set size ($F(1, 246) = 21.548, p < 0.001$) with time-passing precision ($F(1, 246) = 15.683, p < 0.001$); the interaction of choice set size with time

passing accuracy was significant ($F(1, 246) = 125.490$, $p = < 0.001$), and the results validated H1; and the interaction of choice set size, time passing accuracy, and product type was significant ($F(1, 246) = 6.032$, $p = 0.015$), i.e., the results validated H3. The specific results are shown in Table 4:

Table 4. Main effects test for choice satisfaction

Mutation Source	Type III Quadratic Sum	df	MS	F	p	η^2
Selection set size	11.880	1	11.880	21.548**	<.001	0.081
Time elapsed precision	8.647	1	8.647	15.683**	<.001	0.06
Product Type	0.098	1	0.098	0.177	0.674	0.001
Selection Set Size * Time Passage Precision	69.186	1	69.186	125.490**	<.001	0.338
Selection Set Size * Product Type	1.586	1	1.586	2.876	0.091	0.012
Time Passing Precision * Product Type	0.204	1	0.204	0.370	0.543	0.002
Selection Set Size * Time Passage Precision * Product Type	3.326	1	3.326	6.032*	0.015	0.024

$R^2 = 0.415$ (after adjustment $R^2 = 0.399$)

* $p < .05$, ** $p < .01$

A further simple effects test of the interaction between choice set size and time passing precision yielded the following results: in the large choice set, choice satisfaction was greater for low time passing precision than for high time passing precision ($M_{\text{low time passing precision}} = 5.963 > M_{\text{high time passing precision}} = 4.512$, $p = < 0.001$); and in the small choice set, there was a significant difference between the two groups that and the choice satisfaction of high time passing precision was greater than that of low time passing precision ($M_{\text{high time passing precision}} = 6.028 > M_{\text{low time passing precision}} = 5.335$, $p = < 0.001$). Thus, H1a and H1b can be verified, i.e., the choice satisfaction is higher for setting low time passing precision in a large choice set, and the choice satisfaction is higher for setting high time passing precision in a small choice set. The results are shown in Table 5.

Further simple effects tests on the interaction of choice set size, time passing precision and product type yielded the following results: in the large choice set and high time passing precision, the difference in choice satisfaction across product types was significant ($p = 0.016$) with higher choice satisfaction for real goods ($M = 4.760$) than hedonic goods ($M = 4.264$), but in the remaining three cases (large choice set -low time passing precision, small choice set-high time passing precision, and small choice set-high time passing precision) are not significantly different. From Fig. 4, the small choice set-high time-passing precision-hedonic goods group ($M = 6.117$) has the highest choice satisfaction score among the remaining groups, and the large choice set-low time-passing precision-utility goods group ($M = 5.917$) has the highest choice satisfaction score among the remaining groups. Thus H3b holds while H3a does not. The specific results are shown in Table 6 & Fig. 4.

Table 5. Simple Effect Analysis of the Interaction between Choice Set Size and Time Passing Precision on Choice Satisfaction Table

Selection set size	Time elapsed accuracy	(J) Time elapsed accuracy	Difference in mean values (I-J)	SE	p	95% confidence interval of the difference	
						Lower limit	Upper limit
Large	milliseconds	seconds	-1.451**	0.138	<.001	-1.722	-1.179
	Seconds	millisecond	1.451**	0.138	<.001	1.179	1.722
Small	milliseconds	milliseconds	0.693**	0.133	<.001	0.431	0.955
	seconds	millisecond	-0.693**	0.133	<.001	-0.955	-0.431

Notes: * $p < .05$, ** $p < .01$

Table 6 Table analyzing the simple effects of choice set size, time passing accuracy and product type on the interaction of choice satisfaction

Selection set size	Time elapsed accuracy	(I) Product Type	(J) Product Type	Difference in mean values (I-J)	SE	p	95% confidence interval of the difference	
							Lower limit	Upper limit
Large	milliseconds	Enjoyment	Utility	-0.496*	0.204	0.016	-0.898	-0.093
		Practical	Enjoyment	0.496*	0.204	0.016	0.093	0.898
	Seconds	Enjoyment	Practical	0.091	0.184	0.624	-0.273	0.454
		Practical	Enjoyment	-0.091	0.184	0.624	-0.454	0.273
Small	milliseconds	Utility	Practical	0.299	0.180	0.097	-0.055	0.652
		Practicality	Enjoyment	-0.299	0.180	0.097	-0.652	0.055
	seconds	Enjoyment	Practicality	-0.055	0.196	0.780	-0.441	0.331
		Practicality	Enjoyment	0.055	0.196	0.780	-0.331	0.441

Notes: * $p < .05$, ** $p < .01$

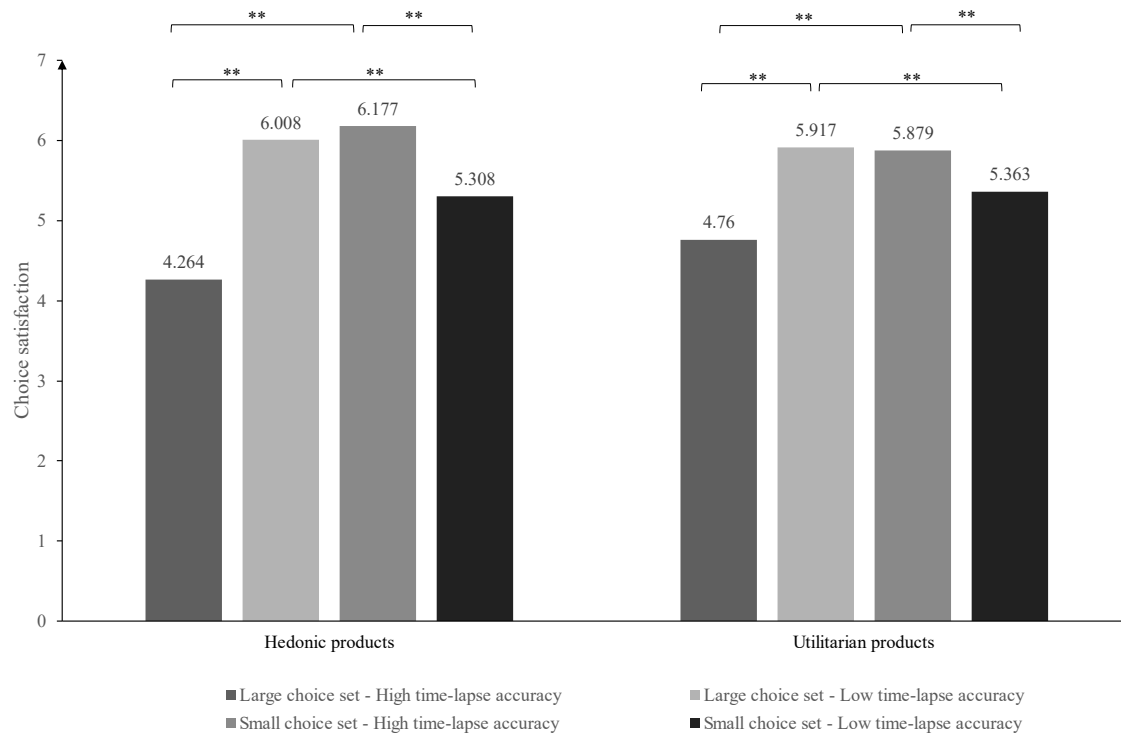


Table 4 Choice Satisfaction of Hedonic and Real Goods under Different Choice Set Size-Time Passing Precision

Notes: * $p < .05$, ** $p < .01$

Using perception of choice difficulty as the dependent variable, a 2 (large choice set vs. small choice set) $\times$ 2 (high time passing accuracy vs. low time passing accuracy) $\times$ 2 (practical vs. hedonic) ANOVA revealed that the choice set size ($F(1,246) = 8.411$, $p = 0.004$) and time passing accuracy ($F(1,246) = 5.848$, $p = 0.016$) The main effect was significant; the interaction of choice set size with time passing accuracy was significant ($F(1,246) = 83.357$, $p = < 0.001$) thus validating H2; and the interaction of choice set size, time passing accuracy and product type was significant ($F(1,246) = 19.753$, $p = < 0.001$), i.e. validating H4. Specific results are shown in Tables 7 and 8. shown:

Table 7 Choice Difficulty Scores for Real Goods and Hedonic Goods in Pairing Different Choice Set Sizes - Time Passing Precision

Selection set size	Time elapsed accuracy	Product Type	M	SD	N
Large	milliseconds	Enjoyment	6.54	0.58	28
		Practical	5.84	1.40	25
	Seconds	Enjoyment	3.36	1.25	25
		Practical	4.35	1.77	46
Small	milliseconds	Utility	3.23	1.57	44
		Practicality	4.29	1.82	28
	seconds	Enjoyment	5.54	1.56	26
		Practicality	4.69	1.93	32

Table 8 A main effects test for perceptions of choice difficulty

Mutation Source	Type III Quadratic Sum	df	MS	F	p	η^2
Selection set size	20.696	1	20.696	8.411**	0.004	0.033
Time elapsed precision	14.389	1	14.389	5.848*	0.016	0.023
Product Type	0.940	1	0.940	0.382	0.537	0.002
Selection Set Size * Time Passage Precision	205.105	1	205.105	83.357**	<.001	0.253
Selection Set Size * Product Type	0.027	1	0.027	0.011	0.917	0.000
Time Passage Precision * Product Type	0.192	1	0.192	0.078	0.780	0.000
Selection Set Size * Time Passage Precision * Product Type	48.603	1	48.603	19.753**	<.001	0.074

a. $R^2=0.327$ (after adjustment $R^2=0.307$)

b. * $p<.05$, ** $p<.01$

A further simple effects test of the interaction between choice set size and time passing precision yielded the following results: in large choice sets, the sense of choice difficulty for low time passing precision was smaller than the sense of choice satisfaction for high time passing precision ($M_{\text{low time passing precision}} = 3.854 < M_{\text{high time passing precision}} = 6.188$, $p = < 0.001$); in small choice sets, the sense of choice difficulty was less than choice satisfaction for low time elapsed precision ($M_{\text{high time elapsed precision}} = 3.756$, $M_{\text{low time elapsed precision}} = 5.113$, $p = < 0.001$). Therefore, H2a and H2b can be verified by the simple effects test, i.e., it is less difficult to choose among large choice sets with low time passing precision, and it is less difficult to choose among small choice sets with high time passing precision. The results are shown in Table 9.

Further simple effects tests on the triple interaction of choice set size, time passing precision and product type yielded the following results: in the large choice set and high time passing precision, there was no significant difference in choice satisfaction across product types, and in the large choice set-low time passing precision, there was a significant difference in the sense of difficulty in choosing between product types, with hedonic products having a lower sense of difficulty than practical products ($M_{\text{hedonic products}} = 3.360 < M_{\text{real goods}} = 4.348$, $p = 0.012$); in its small choice set-high time elapsed precision, the difference in the perception of choice difficulty across product types was significant, with hedonic goods being less difficult to choose than real goods ($M_{\text{hedonic goods}} = 3.227 < M_{\text{real goods}} = 4.286$, $p = 0.006$); in its small choice set-high time elapsed precision, the difference in the perception of choice difficulty across product types was significant, with hedonic goods being less difficult to choose than real goods ($M_{\text{hedonic goods}} = 3.227 < M_{\text{real goods}} = 4.286$, $p = 0.006$); and in its small choice set-high time elapsed precision, the In the small choice set-high time elapsed precision, the sense of choice difficulty varied significantly across product types, with real products having a lower sense of choice difficulty than hedonic products ($M_{\text{real products}} = 4.688 < M_{\text{hedonic products}} = 5.538$, $p = 0.041$). The results are shown in Table 10. From Fig. 5, for hedonic items, the choice difficulty was lower for both small choice set-high time elapsed precision ($M = 3.227$) and large choice set-low time elapsed precision ($M = 3.360$), and the choice difficulty was the lowest for real items under small choice set-high time elapsed precision ($M = 4.286$), which verified H4b but failed to validate H4a.

Table 9 Simple Effect Analysis of the Interaction between Choice Set Size and Time Passing Precision on the Sense of Choice Difficulty Table

Selection set size	(I) Time elapsed accuracy	Time elapsed accuracy	Difference in mean values (I-J)	SE	p	95% confidence interval of the difference	
						Lower limit	Upper limit
Large	milliseconds	milliseconds	2.334**	0.291	<.001	1.761	2.907
	seconds	Seconds	-2.334**	0.291	<.001	-2.907	-1.761
Small	milliseconds	milliseconds	-1.356**	0.281	<.001	-1.910	-0.803
	seconds	seconds	1.356**	0.281	<.001	0.803	1.910

Notes: *p<.05, **p<.01

Table 10 Simple effect analysis of the interaction between choice set size, time passing precision and product type on the perception of choice difficulty

Selection set size	Time elapsed accuracy	(I) Product Type	(J) Product Type	Difference in mean values (I-J)	SE	p	95% confidence interval of the difference	
							Lower limit	Upper limit
Large	milliseconds	Enjoyment	Utility	0.696	0.432	0.108	-0.154	1.546
		Practical	Enjoyment	-0.696	0.432	0.108	-1.546	0.154
	Seconds	Enjoyment	Practical	-0.988*	0.390	0.012	-1.756	-0.220
		Practical	Enjoyment	0.988*	0.390	0.012	0.220	1.756
Small	milliseconds	Utility	Practical	-1.058**	0.379	0.006	-1.805	-0.312
		Practicality	Enjoyment	1.058**	0.379	0.006	0.312	1.805
	seconds	Enjoyment	Practicality	0.851*				
				0.851*				
				0.851*	0.414	0.041	0.035	1.667
				0.851*				
		Practicality	Enjoyment	-0.851*	0.414	0.041	-1.667	-0.035

Notes: *p<.05, **p<.01

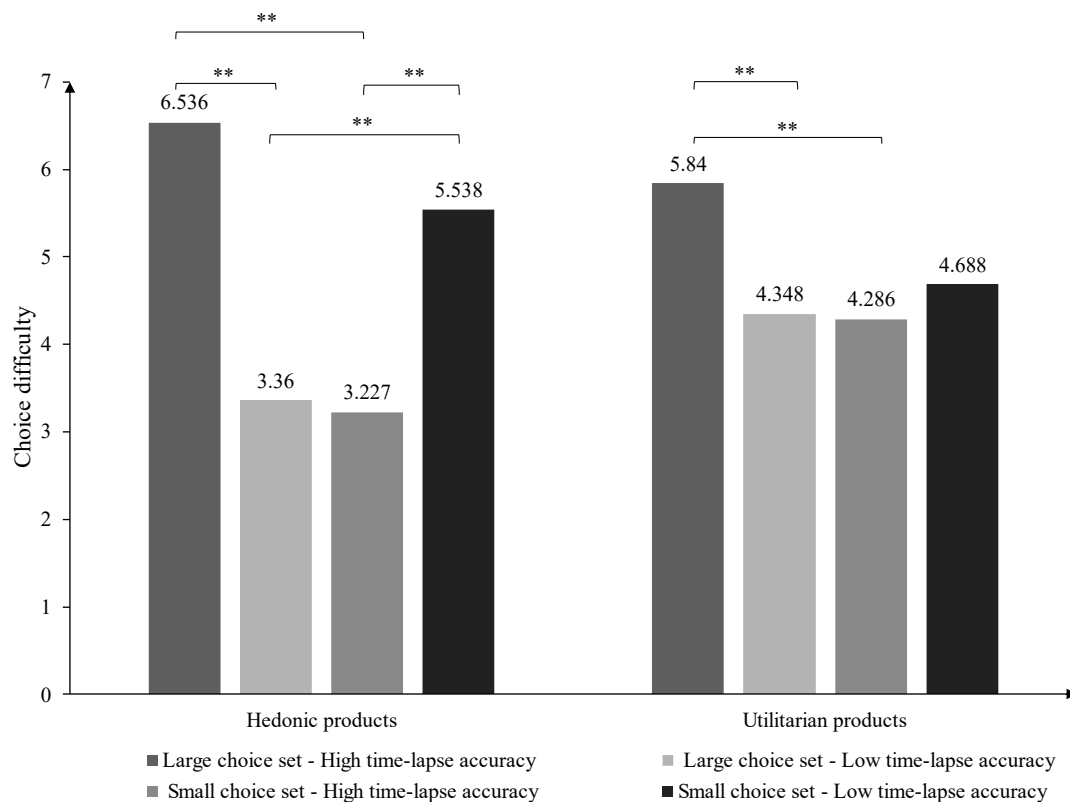


Figure 5. Plot of the interaction between choice set size and time elapsed precision on the perception of choice difficulty across product types

Notes: * $p < .05$, ** $p < .01$

3.2 Discussion and Analysis

3.2.1 Discussion of the results

This study found that in the large choice set-low time passing precision group, choice satisfaction is higher and choice difficulty is lower; in the small choice set-high time passing precision group, choice satisfaction is higher and choice difficulty is lower, thus validating H1 and H2. while H3 and H4 are only partially supported. For choice satisfaction, the interaction term of choice set size * time passing precision * product type was significant, thus product type played a moderating role in the interaction between choice set size and time passing precision on consumer choice satisfaction. However, in further simple effects analysis, under the real product, choice satisfaction was higher for large choice set-low time-passage precision compared to other groups, validating H3b, whereas both large choice set-low time-passage precision and small choice set-high time-passage precision were higher in hedonic products failing to validate H3a. For choice difficulty perception, the interaction term of choice set size * time-passage precision * product type was significant, i.e., product type played a moderating role in the interaction between choice set size and time elapsed precision on consumers' perception of choice difficulty. In further simple effects analysis, it was found that for practical products, in the large choice set-high time passing precision showed relatively higher choice difficulty sense with other groups, and the choice difficulty sense scores of the rest of the groups did not differ much. From Figure 5, the practical goods have the lowest sense of choice difficulty in small choice set-high time passing precision, so H4b holds. And in hedonic items also the sense of choice difficulty is lowest under small choice set-high time passing precision, so H4a is not established.

In this study, we found the effects of the settings of product choice set size and time passing precision on consumers' choice satisfaction and sense of choice difficulty in a simulated online shopping scenario. In the large choice set-low time passing precision group, choice satisfaction is higher and choice difficulty is lower, and in the small choice set-high time passing precision group, choice satisfaction is higher and choice difficulty is lower. This is the same conclusion as previously

analyzed by some scholars from the perspective of limited cognitive resources, which concluded that the larger the choice set, the lower the choice satisfaction and the higher the perception of choice difficulty (Botti & Lyengar, 2004; Iyengar & Lepper, 2000). The greater the precision of time passing, the greater the time pressure experienced and the more cognitive resources consumed (Hu, Weiguo, Hu, Yu, 2009). Therefore, the establishment of H1 and H2 in this study is also consistent with the results of previous research. Although, in the process of online shopping, merchants generally believe that the more products they offer, the higher the probability of consumers purchasing satisfactory goods from them. However, from the results of previous studies to the present study, it is more important to set the size of the choice set of products within a certain range and to set it flexibly according to different situations, such as the precision variable of the passage of time, which is added in the present study. Only in this way can the benefit be maximized.

Product type moderates the interaction between choice set size and time-passage precision on choice satisfaction, which is significantly higher for practical goods than for hedonic goods under large choice set-high time-passage precision, and both choice satisfaction under large choice set-low time-passage precision and small choice set-high time-passage precision are higher compared with the other groups under different product types. However, this finding does not conflict with the initial hypothesis that hedonic items have higher choice satisfaction under large choice set-high time passing precision. From Figure 4, for hedonic items, the choice satisfaction is higher than 6 for both large choice set-low time elapsed precision and small choice set-high time elapsed precision, which may be due to the fact that hedonic items themselves correspond to some affective preferences, and hedonic items may bring more mental satisfaction and pleasurable emotional experiences compared to the real items, so the overall choice satisfaction is higher than 6 for the real items. Therefore, the overall choice satisfaction is higher than that of real goods. For real products, the choice satisfaction is also higher under the settings of large choice set-low time elapsed precision and small choice set-high time elapsed precision, both of which are greater than 5. However, unlike hedonic products, the difference in satisfaction between the different settings for real products is smaller than that of hedonic products, which is consistent with the conclusion of previous studies that the purchasing of hedonic products is more emphasized on the individual's personal preference and playfulness (Wang Shijian, Wang Liangyan, 2016). Therefore, compared to real goods, hedonic goods are more inclined to a type of product that favors personal preferences, which may vary according to people's attitudes and emotions at the moment, or their inherent emotional biases.

Unlike choice satisfaction, the overall choice difficulty scores for hedonic products are somewhat lower than those for real products, as shown in Figure 5, for real products, except for the large choice set-high time passing accuracy, where the choice difficulty scores are higher than 5, and the rest of the groups are all within 5 or less. And consistent with H4b, under the small choice set-high time passing precision, the choice difficulty sense scores of practical goods are the lowest. In daily life, USB flash drive is a real product as well as a durable product for people, and people tend to make comparisons between products when selecting them, rather than choosing them due to personal preferences. For the purchase of practical goods, to buy a "better use" is often more important than to buy a "more like". Therefore, in the selection process, real goods consume more cognitive resources than hedonic goods, and have higher choice difficulty scores than hedonic goods. For hedonic items, there is little difference in the choice difficulty scores between the large choice set-low time elapsed precision and the small choice set-high time elapsed precision settings, and both scores are relatively low.

Finally, it was found that for hedonic products, choice satisfaction was higher and choice difficulty was lower under small choice set-high time elapsed precision, which is contrary to the hypotheses of the initial study. Okada's (2005) study concluded that pragmatic products have higher purchase rationality relative to hedonic products, i.e., people tend to be more biased toward purchasing pragmatic products when making purchases. Moreover, in a study by Sela et al. (2009), it was found that it is easier to choose practical products than hedonic products under conditions of large choice sets. Based on the previously mentioned, purchasing utility products is more rational and easier to

justify the purchase, so the tendency to purchase utility products is higher when a large number of choices are included. In addition previous studies have concluded that the heuristic How do I feel about this product is mostly used when purchasing hedonic products to evaluate the purchase of hedonic products (Xu, Y., 2021). This is similar to the concept of experiential products among the other categorizations of products - search products and experiential products, i.e., they need to be experienced and felt in order to obtain information about the product (Yamping Gong, Jiale Wang, Jiang Zhan, 2020). Moreover, in the study of Gong Yanping et al. it was found that consumers' purchasing attitude is better for experiential products with high time passing precision. Taken together, these two points of view can partly explain why hedonic products have higher satisfaction and lower difficulty under small choice set-high time elapsed precision. Another reason may be that chocolate as a hedonic item may not be consistent with the previous hypothesis because the hedonic and utility scores of the pre-test are not very high although the hedonic scores are statistically different. In contrast, the hedonic items did not differ significantly in their effects on choice satisfaction and choice difficulty in either the small choice set-high time elapsed precision or the large choice set-low time elapsed precision settings. This may be because the difference in consumer perceptions between the two settings, large choice set-low time elapsed precision and small choice set-high time elapsed precision, is not too large by itself. For choice satisfaction, in the study of Yanping Chen (2019), the large choice set was set to 30 pieces and the small choice set was set to 6 pieces, and the result obtained that the choice satisfaction in the small choice set was significantly higher than that in the large choice set. And for this study, in order not to let the choice set overload effect directly affect choice satisfaction. Therefore, the number of choice sets within 15 pieces proposed in a previous study as the un-overloaded choice set was used as the setup for the experiment (Reutskaja & Hogarth, 2010). This, in turn, could have resulted in the fact that the differences in choice satisfaction were not very high between choice sets with a number of 15 pieces or less, all of which were higher. For the sense of choice difficulty, the sense of choice difficulty was lower for both types of products with settings with small choice sets-high time elapsed accuracy, which also satisfies the conclusion that the effect of choice set size on the sense of choice difficulty is to be lower with smaller choice sets, as explored by Yanping Chen in her study.

The innovation of this study is to combine the choice set size with the time passing accuracy, and to explore the optimal matching of choice set size and time passing accuracy under specific product types. As well as considering consumers' consumption decisions from both positive and negative directions - choice satisfaction and choice difficulty in a comprehensive way.

As for the significance of this study, from the theoretical point of view, scholars at home and abroad have made a lot of research results on the size of product choice set, but few scholars have introduced another variable - time passing precision into the study of choice set size. Moreover, most of the previous studies focus on traditional shopping scenarios, while this study simulates an online shopping environment for experiments, which is more in line with the trend of modern consumption. The study finds out how different choice set sizes and time elapsed precision affect people's choice satisfaction and choice difficulty when consuming, which further broadens the research field of choice set size.

In terms of practical significance, the increasingly prosperous development of the online shopping industry, and even more the impact of the new crown epidemic, more and more people choose to buy their favorite goods online. Therefore, it is all the more important for e-commerce companies to choose appropriate promotional methods and set up appropriate choice set and time passing accuracy to enhance consumers' sense of consumption experience and satisfaction while also promoting product sales.

3.2.2 Limitations and further thinking of this paper

This study is built on a web platform to simulate consumers' online shopping behavior, which is still somewhat different from the real shopping scene. Therefore, this study still has some deficiencies as well as areas that can be explored.

From the point of view of sample collection, due to the restriction of the subjects to the age of 18~25 years old, the conclusion is limited and cannot be generalized to all groups. From the

perspective of the platform for conducting the experiment, due to the impact of the epidemic, the experiment could only be conducted online, so some additional variables could not be manipulated offline, which might affect the final results of the experiment. From the point of view of selecting dependent variables in the experiment, the factors affecting consumption are very complicated, therefore, only relying on the sense of difficulty in choosing and satisfaction with choosing can not represent the real consumption decision-making situation of a consumer. Subsequent experiments should introduce more relevant dependent variables to measure consumers' consumption decisions more comprehensively.

In this study, because of the choice overload effect mentioned in the previous study, the number of choice sets below 15 was chosen as the large choice set, and the number of small choice sets was set at 4. We can expand the range of choice set sizes in the future to find the optimal choice set size and investigate how the choice set sizes influence the trends of choice satisfaction and choice difficulty under different time elapsed precision settings. The results of this study are summarized as follows

In terms of product selection, chocolate and USB flash disks were chosen as experimental materials with reference to previous studies. However, in real life, the frequency of using USB flash drives is gradually decreasing, and people tend to store data in "cloud drives". In this study, it may not be the most appropriate choice to use USB flash drive as the actual product. A follow-up study could make a wider selection of products. It is possible to select products that best represent the category of utilities. And it could also be considered practical and hedonic as attributes to be attached to a product and presented to subjects through textual manipulation. This is also in line with previous research that suggests that hedonics and utility are not separated into two, but rather are attached to products as two attributes. In the future, it is possible to continue to explore how subjects' choice of products at different prices differs across the passage of time.

4. conclusion

This study found that the number of products displayed on an online shopping page, i.e., the setting of choice set size and time passing precision, should be reasonably matched. Under large choice set (12 items)-low time elapsed precision (seconds) and small choice set (4 items)-high time elapsed precision (milliseconds), consumers' choice satisfaction is higher and choice difficulty is lower. Under specific product types, for hedonic products, choice satisfaction is higher and choice difficulty is lower under small choice set-high time elapsed precision, while for practical products, choice satisfaction is higher under large choice set-low time elapsed precision and choice difficulty is lower under small choice set-high time elapsed precision. Therefore, from a merchant's point of view, the number of products on display is not more than enough, nor is the more urgent the countdown to purchase the better the consumer's shopping experience. Only a reasonable product setup can bring the best revenue.

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