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# The Influence of Online Travel Consumers' Confusion on the Delay of Purchase Decision ——Based on the Regulation of Cognitive Needs

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# The Influence of Online Travel Consumers' Confusion on the

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# ——Based on the Regulation of Cognitive Needs

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**Abstract:** The Internet makes it easier and faster to search for information online. The explosive growth of information has also led to a significant increase in consumer choice confusion, and consumers are increasingly inclined to delay purchase decisions. The current research on the relationship between consumer confusion and purchase decision delays lacks analysis from the impact of cognitive needs. Based on the existing literature and results, this paper selects three dimensions of similar confusion, overload confusion and fuzzy confusion, and uses 305 data obtained from the questionnaire survey to empirically explore the relationship between consumer confusion and purchase decision delay, and the adjustment mechanism of cognitive needs . The research results show that overloading confusion and fuzzy confusion have a greater impact on purchase decision delay; cognitive needs negatively regulate the relationship between similar confusion, overload confusion and fuzzy confusion and purchasing decision delay; when cognitive demand is high, overload confusion The positive impact of vague confusion and delayed purchase decisions will diminish. This research not only enriches theoretically the relationship between cognitive needs, consumer confusion, and purchase decision delays, but also provides guidance for online travel marketing in practice.

Key words : similarity confusion    overload confusion   ambiguity confusion   need for cognition   purchase decision postponement

## 1. INTRODUCTION

According to the "Statistical Bulletin" issued by the Ministry of Culture and Tourism, the domestic tourism market continued to grow steadily in 2018. The number of domestic tourists in the year was 5.539 billion, and the total tourism revenue for the year was 5.97 trillion yuan. With the development of the Internet, the number of people who choose to travel online is also rising, and online travel e-commerce platforms have become an important channel for consumers to complete their purchase decisions [1]. The emergence of online travel has provided convenience for travel consumers to check travel information, book travel products, and evaluate service quality. The enrichment brought by the increase in information can help consumers make purchasing decisions to a certain extent, but when the product information is similar, excessive, and vague, it will cause consumer confusion. Faced with confusion, consumers tend to adopt coping strategies that delay decision-making [5].

Through literature review, it is found that consumer confusion has been a research hotspot at home and abroad, and more and more scholars begin to pay attention to its causes and consequences. At present, in the field of online tourism, most scholars mainly focus on the impact of consumer confusion on customer psychological perception. For example, Lin Baomin and Tu Hongwei [21] discussed the impact of consumer confusion on trust from the perspective of emotional evaluation theory, and Tu Hongwei and Wu generation [22] discussed the impact of consumer confusion on negative word-of-mouth from the perspective of emotional

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aggregration response. At present, the relationship between consumer confusion and purchase decision-making has been studied to some extent, but there are some differences in the research conclusions, and there is no unified conclusion about the impact of online tourism consumer confusion on purchase decision-making. Walsh et al. [7] found that the three dimensions of consumer confusion (similar confusion, overload confusion and fuzzy confusion) will positively affect the possibility of consumer decision delay; Lu et al. [2-3] found that overload confusion will urge tourists to continue to find new information to complete consumer decision. However, some scholars have put forward the opposite view based on the confusion of mobile app consumers. They think that when consumers are difficult to identify different brands, even if the final decision is not accurate, they still tend to make decisions faster [8]. With regard to the different conclusions among scholars, the author believes that further discussion is needed to determine whether consumer confusion has an impact on the delay of final purchase decision.

As for the relationship between consumer confusion and purchase decision-making (purchase decision delay, give up purchase), few domestic scholars have been involved. The research of foreign scholars is still in the exploration stage. For the online tourism scenario, no consistent conclusion has been drawn, which can not guide the marketing practice of enterprises. Secondly, the cognitive needs of consumers have a certain impact on the final purchase behavior. Therefore, on the basis of the existing research results, this paper puts forward the research hypothesis, based on the regulatory effect of different cognitive needs, constructs the influence model of consumer confusion on purchase decision-making, and tries to explore the relationship between the two.

## 2. THEORETICAL BASIS AND RESEARCH HYPOTHESIS

### 2.1 Theoretical basis

### 2.1.1 Consumer confusion

The research on perplexity started in the field of brand strategy and trademark protection, and early scholars paid less attention to the definition of consumer perplexity [9]. At present, the definition of the connotation of consumer confusion can be generally divided into two categories: from the cognitive perspective, Turnbull et al. [10] believes that consumer confusion refers to the failure of consumers to correctly understand product or service information about multiple aspects in the process of information processing; from the psychological state, Mitchell et al. [5] proposed that consumer confusion is caused by similar, overloaded and fuzzy products The confusion and uneasiness caused by information have a negative effect on the information processing and decision-making process of consumers. Based on the influence of consumer confusion on purchase decision-making in the process of information processing in the context of online tourism, this paper uses Mitchell and others to define the concept of consumer confusion, and regards consumer confusion as a kind of negative psychological state caused by similar, overloaded and fuzzy product information, which will make consumers form uncertainty related to products or services, and then information Processing and decision-making processes have an impact.

At present, in the research of consumer confusion, the dimensions are divided into three categories: Based on the consumer's psychological perception, Huffman et al. [11] divides it into practical confusion and perceptual confusion; based on the cognitive source of confusion, Walsh et al. [7] divides it into similar confusion, overload confusion and fuzzy confusion; from the perspective of comprehensive psychology and cognition, garaus et al. [12] starts from the retail environment, divide it into practical confusion and perceptual confusion It can be divided into emotional confusion, cognitive confusion and motivation confusion. Walsh et al. Develop the consumer confusion scale of good reliability and validity, which has been widely recognized and applied by the academic community [8], and this paper is mainly based on the confusion generated in the process of consumer information processing in the context of online tourism. Therefore, Walsh et al. be used to measure consumer

confusion from three dimensions of similar confusion, fuzzy confusion and overload confusion The impact of purchase decisions.

In view of consumer confusion, this paper uses the Walsh multidimensional puzzle tendency scale to define the three dimensions. Similar confusion is defined as that consumers tend to think that different products in a product category are similar in vision and function; overload confusion is defined as the psychological difficulty for consumers to understand, compare and understand the substitutes when they are faced with more product information and substitutes than they can handle; fuzzy confusion refers to that consumers are not clear, misleading or fuzzy about the handling Psychological tolerance of product, product related information or advertisement.

**2.1.2 Cognitive needs**

In exploring the multidimensional structure of consumer confusion, Walsh et al. [7] clearly suggested that if researchers want to understand the impact on consumer confusion on consumer behavior keenly, they should set up moderating variables in the research. In this process, consumer confusion is completely centered on the selection, evaluation and integration process of market information, and cognitive demand as a variable of consumer characteristics is related to information processing, so cognitive demand is selected as a regulating variable [13]. Cohen, stotland & Wolfe [14] defined the cognitive needs (NFC) as "the need to build relevant relationships in a meaningful and comprehensive way"; Cacioppo & petty [15] defined the cognitive needs as "the tendency of individuals to participate and enjoy thinking"; Hansen, Samuelsen & Sallis (2013) also showed that the cognitive needs do not refer to clear or have the knowledge ability to deal with complex information, but consumers are willing to The motivation to do so.

In the current research, need for cognition is usually regarded as a stable variable of personality traits, and there are also high and low levels for the division of cognitive needs. Individuals with high cognitive needs like complex task situations, and actively search relevant meaningful clues to understand and understand this situation. In contrast, individuals with low cognitive needs tend to be satisfied with the status quo, tend to avoid thinking, and adopt more simpler ways of thinking to deal with problems. In the context of online tourism, consumers with high cognitive needs are more inclined to process information, they have more experience knowledge and ideas, and they are more likely to search and select information that is more conducive to their own consumption decision-making in an active way; while consumers with low cognitive needs often have a state of negative response, and only rely on intuition or experience to judge the current information [16] .Therefore, based on the situation of online tourism, according to the level of consumer cognitive needs, this paper judges the impact on consumer confusion on purchase decision-making.

**2.2 Research hypothesis**

**2.2.1 Consumer confusion and purchase decision**

Walsh et al. [7] defined similarity puzzle as "tending to think that different products in product category are similar in vision and function". It is found that this situation is because consumers need to rely on visual cues (image, color, design, etc.) when processing information sources. Therefore, the similarity of information sources is often confusing for consumers, and ultimately changing their purchase decisions [9]. In terms of its influence on purchase decision, similarity confusion has a significant positive effect. In other words, a higher level of similarity confusion leads to a higher level of purchase decision. Because of the confusion of similarity, consumers will compare various kinds of information, which will eventually lead consumers to think that because two (or more) products or services are essentially similar, consumers can choose one of them [7]. In this case, similar confusion can be used as a decision heuristic method, so that consumers can make purchase decisions quickly. Based on this, this paper puts forward the hypothesis:

H1: In the context of online tourism, with the increase of similar confusion of consumers, the delay of

purchase decision increases.

On the other hand, Walsh et al. [7] defined overload puzzle as "the difficulty consumers encounter when facing more product information and alternative information that cannot be compared and understood". Consumers who are prone to overload and confusion may delay their purchase decision [17]. Previous studies also confirmed that with the increase of the number of alternatives, consumers have overload confusion, which leads to consumers' choice of default options, delay of purchase decision and even refusal of purchase [13]. Based on this, this paper puts forward the hypothesis:

H2: In the context of online tourism, with the increase of consumers' overload confusion, the delay of purchase decision increases.

Finally, Walsh et al. [7] defined fuzzy confusion as "consumers' tolerance for ambiguous or misleading products and product information". According to Cox (1967) [18], inconsistent or ambiguous information may cause uncomfortable perception to consumers. Fuzzy confusion may also result from other factors such as stimulus similarity or information overload [10,19]. When consumers do not determine the absolute advantage of one product over another, they do not know which product to buy and delay the purchase decision [13]. Based on this, this paper puts forward the hypothesis:

H3: In the context of online tourism, with the increase of consumer confusion, the delay of purchase decision increases.

**2.2.2 The regulatory role of cognitive needs**

In the current online tourism market, the phenomenon of "product homogeneity" is more serious, and the products or services between different platforms have certain similarity, which also leads to similar confusion of consumers. Therefore, we assume that consumers think the online travel information between platforms is similar, and can replace each other, allowing consumers to choose any one of them. According to the opinion of scholar Ghosh t et al. [8], consumers with high NFC prefer to process similar product or service information, and they are also more inclined to identify the subtle differences between similar product information. Therefore, this paper believes that with the increase of demand cognition, NFC consumers will spend more time on information processing to find the similar information differences published by online tourism platforms, which will also cost consumers more time to search, leading to delayed purchase decisions. On the other hand, low NFC consumers do not feel motivated to search for small changes in similar product or service information, so when making consumption decisions, low NFC consumers are more rapid. Based on this, this paper puts forward the hypothesis:

H4a: High NFC has a negative effect on the increase of similar confusion and the decrease of purchase decision delay.

H4B: Low NFC has a positive effect on the decrease of delay in purchase decision due to the increase of similar confusion.

When consumers face overload information, compared with low NFC users, high NFC consumers show more motivation to browse and search a large amount of information about products or services, which further explains the regulatory role of NFC. Therefore, high NFC will spend more search time, because high NFC consumers have more information to process, which increases their decision delay probability. Lu et al. [3] also showed this point, overload confusion will urge consumers to continue to find new information to complete consumption decisions; while low NFC consumers often have no choice when facing overload information In the face of products or services to be purchased, decisions are often made more quickly than high NFC. Based on this, this paper puts forward the hypothesis:

H5a: High NFC has a negative effect on the increase of purchase decision delay caused by the increase of overload confusion.

H5B: Low NFC has a negative effect on the increase of purchase decision delay caused by the increase of overload confusion.

According to the research of Ghosh T and Rao V g scholars, high NFC consumers will generate strong stimulation for complex or ambiguous information, just like solving problems, they tend to eliminate the "mystery" of such ambiguous information. In addition, compared with low NFC consumers, high NFC consumers have stronger motivation to understand potential information ambiguity [8]. Therefore, we believe that the resolution of fuzzy confusion may promote high NFC to generate positive emotions, thus increasing the efficiency of high NFC consumers to make purchase decisions and the possibility of purchase. Based on this, this paper puts forward the hypothesis:

H6a: High NFC has a negative effect on the increase of purchase decision delay caused by the increase of fuzzy confusion.

H6b:Low NFC has a positive effect on the increase of purchase decision delay caused by the increase of fuzzy confusion.

In a word, the proposed hypothesis establishes a conceptual model, which emphasizes the relationship between the degree of consumers' confusion about information and purchase decision-making under the regulation of cognitive demand. As shown in Figure 1:

## 3. RESEARCH DESIGNS

### 3.1 Measuring tool

The scales used in this paper are mature scales tested by empirical research or revised by Chinese authoritative scholars. For the English version of the scale, the author invites teachers from tourism, marketing and translation majors to revise and translate the English scale together to ensure that the content and semantics are relatively consistent. This paper uses liker 5-point scoring method, "1 = totally disagree, 5 = totally agree", to measure the variables:

(1) Consumer confusion. The scale of consumer confusion tendency developed by Walsh et al. [7] has 9 items in total, such as "due to the similarity of tourism products provided by online channels, I can't make effective differentiation", "because there is too much information about tourism products on online tourism websites, it's difficult for me to decide which product to buy", "when I buy products, I think online tourism websites provides Information are not enough, which involves three aspects of "similar confusion, overload confusion, fuzzy confusion" faced by online tourists. The internal consistency coefficient of the scale is 0.93.

(2) Delayed purchase decision. Purchase decision delay refers to the scale of Walsh et al. [7], including 3 items. The internal consistency coefficient of the scale is 0.78.

(3) Cognitive needs. Using 18 item scale developed by Cacioppo and petty [23], such as "thinking makes me happy", "I'm willing to think about complex problems", "I like to deal with some problems that need a lot of thinking", "I like simple problems rather than complex problems (reverse items)" "I like to think about some trivial problems in daily life, rather than long-term problems (reverse items)" And so on.

(4) Control variables. Because of the demographic characteristic variables such as gender, age, education level, etc., it is believed that there is an impact on consumer confusion [5,10,22]. Therefore, in order to avoid these irrelevant variables affecting the logical relationship of the variables in the online tourism consumption environment, this paper treats three variables as control variables: gender, age, education level, etc.

### 3.2 Sample

The target object of this study is online tourism consumers. Through online research, with the help of "questionnaire star", the author takes the way of snowball to obtain data. In order to ensure the quality of online questionnaire, the questionnaire with more than 70% of the number of answers selected in addition to the basic

information is regarded as invalid questionnaire (12 in total), and 305 valid questionnaires are actually obtained, covering Guiyang, Henan, Sichuan, Shanghai and most provinces and cities in China.

The descriptive statistical analysis of the sample shows that the proportion of women is 60.78%; the proportion of women aged 19-29 years is 82.33%; the proportion of women aged 30-39 years is 10.34%; the proportion of people over 40 years is 7.33%; the proportion of high school and below is 10.78%; the proportion of college or undergraduate is 49.57%; the proportion of women with master's degree and above is 39.66%.

## 4. MODEL TEST AND RESEARCH RESULTS

This paper uses spss22.0 and amos24.0 for empirical analysis.

### 4.1 Sample basic inspection

Cronbach's α is used to test the reliability of data, and its value is above 0.7, which is within the acceptable range. Kmo and Bartlett's spherical test are used to detect the correlation between variables. The KMO value is closer to 1, and Bartlett's chi square value is significant, the more suitable for factor analysis. It can be seen from table 1 that Cronbach's α is 0.899 > 0.7, indicating that the overall reliability of the data is good; KMO valued is 0.888, Bartlett's chi square value is 5090.708, and the significance is 0 < 0.01, indicating that the sample data is suitable for factor analysis.

**Table 1.    Sample basic inspection**

| | | |
|---|---|---|
| | Cronbach's α | 0.899 |
| | KMO | 0.888 |
| Bartlett test of sphericity | Chi-square test | 5090.708 |
| | df | 528 |
| | sig | 0 |

### 4.2 Reliability and validity of the scale

Table 2 lists Cronbach's α coefficient, factor load and ave value of each latent variable. Cronbach's α is between 0.771-0.906, all of which are above 0.7, reflecting the good reliability of each measurement item; the factor load of each question item is between 0.608-0.892, all of which are above 0.5, indicating that the scale has a good structural validity; ave is used to reflect the variation of measurement indicators that can be explained by potential variables, and the ave value of each potential variable is above 0.5, indicating the acceptance The convergence validity is good. Table 2 shows the correlation coefficients of the three factors of consumer confusion and the square roots of Ave. the square roots of the three factors are all larger than the correlation coefficients of other factors, reflecting that the differentiation validity of the three factors of consumer confusion is better.

**Table 2.    Reliability and validity of the scale**

| Latent variable | Observed variable | Cronbach's α | Factor loading | AVE |
|---|---|---|---|---|
| Similarity confusion | SC1 | | 0.859 | |
| | SC2 | 0.827 | 0.858 | 0.862 |
| | SC3 | | 0.868 | |
| Overload confusion | OC1 | | 0.872 | |
| | OC2 | 0.833 | 0.871 | 0.866 |
| | OC3 | | 0.854 | |
| Ambiguity confusion | AC1 | | 0.83 | |
| | AC2 | 0.771 | 0.869 | 0.829 |
| | AC3 | | 0.785 | |
| purchase decision postponement | DP1 | | 0.867 | |
| | DP2 | 0.836 | 0.892 | 0.868 |
| | DP3 | | 0.845 | |
| Need for cognition | NFC1-6 | | 0.608 | |
| | NFC7-12 | 0.906 | 0.621 | 0.618 |
| | NFC13-18 | | 0.624 | |

### 4.3 Confirmatory factor analysis

We use confirmatory factor analysis to determine the structural validity of five main research variables: similar confusion, overload confusion, fuzzy confusion, cognitive needs and purchase decision delay. Because there are many measurement items of cognitive need variables in this study, in order to improve the fitting degree of the model, we follow the previous research methods and corresponding suggestions [16], adopt the topic packing strategy, and use the composite score of dimensions as the indicator of each variable. The author uses random packing method to pack 18 items needed by cognition according to "parity method" [24]. It is found that the fit of three indicators are better than four or six, and also better than using the original topic directly (bandalos, 2002; Rogers & Schmitt, 2004). Therefore, the three items generated by the final packaging are taken as the new indicators of cognitive demand dimension.

The results show that the factor load and t value of each factor in the five factor model have reached a significant level of 0.05, and there is no improper solution, which shows that several constructs involved in this paper have good aggregation validity. At the same time, we use the method of model comparison to examine the structural validity of each variable. As shown in Table 1, compared with the other seven models, the five factor model is the best fit for the actual data ($X2 = 151.330$; $DF = 80$; $X2 / DF = 1.892$; $GFI = 0.939$; $TLI = 0.961$; $CFI = 0.971$; $RMSEA = 0.054$), indicating that the five scales involved in this paper have good discrimination validity. In this study, the control for effect of an unmeasured later methods factor is used to test whether there is a common method deviation [16]. The results show that after adding common method factors into the five factors, the fitting index of the model is not improved to a high degree, and the CFI is increased by 0.01, and the TLI is increased by 0.02, which shows that the model with method factors is not improved to a high degree The fitting data has not been significantly improved, which shows that although the common method deviation may exist, it has little impact on this study. At the same time, Harman tested shows that the common method deviation in this study is not serious.

**Table 3.    Confirmatory factor analysis**

| Model | χ2 | df | χ2/df | GFI | TLI | CFI | RMSEA | Model comparison test | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | comparison | △χ2 | △df |
| Single factor model | 1079.614 | 90.000 | 11.996 | 0.651 | 0.524 | 0.592 | 0.190 | 1 vs 7 | 928.284** | 10 |
| Two factor model | 747.729 | 89.000 | 8.401 | 0.714 | 0.679 | 0.728 | 0.156 | 2 vs 7 | 596.399** | 9 |
| Three factor model | 324.080 | 87.000 | 3.725 | 0.859 | 0.882 | 0.902 | 0.095 | 3 vs 7 | 172.750** | 7 |
| Four factor model one | 688.945 | 84.000 | 8.202 | 0.736 | 0.688 | 0.750 | 0.154 | 4 vs 7 | 537.615** | 4 |
| Four factor model two | 759.951 | 84.000 | 9.047 | 0.719 | 0.651 | 0.721 | 0.163 | 5 vs 7 | 608.621** | 4 |
| Four factor model three | 558.020 | 84.000 | 6.643 | 0.773 | 0.756 | 0.804 | 0.136 | 6 vs 7 | 406.690** | 4 |
| Five factor model | 151.330 | 80.000 | 1.892 | 0.939 | 0.961 | 0.971 | 0.054 | | | |
| Six factor model | 91.402 | 65.000 | 1.406 | 0.962 | 0.982 | 0.989 | 0.037 | | | |

注：N=305，；**p<0.01（双尾检验）

Single factor model:AC+SC+OC+NFC+DP；Two factor model:AC+SC+OC,NFC+DP；Three factor model:AC+SC+OC,NFC,DP

Four factor model one:SC+NFC,AC,OC,DP；Four factor model two:OC+NFC,SC,AC,DP；Four factor model three:AC+NFC,SC,OC,DP

Five factor model:AC,SC,OC,NFC,DP；Six factor model:AC,SC,OC,NFC,DP,CVF

### 4.4 Correlation analysis among variables

The mean value, standard deviation and correlation coefficient of the main research variables and control variables involved in this study are shown in Table 4. Similar confusion, overload confusion and fuzzy confusion were positively correlated with purchase decision delay ($y = 0.387$, $P < 0.01$; $y = 0.550$, $P < 0.01$; $y = 0.587$, $P < 0.01$); overload confusion and fuzzy confusion were positively correlated with purchase decision delay ($y = 0.153$, $P < 0.01$; $y = 0.129$, $P < 0.05$); cognitive need was positively correlated with purchase decision delay ($y = 0.292$, $P < 0.01$). The existence of the correlation between the above variables provides a preliminary support for the relevant assumptions in this paper.

**Table 4.    Correlation analysis among variables**

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| SEX | 1 | | | | | | | |
| AGR | −.173** | 1 | | | | | | |
| EDU | 0.01 | −.231** | 1 | | | | | |
| SC | 0.025 | −0.059 | .152** | 1 | | | | |
| OC | 0.072 | −0.024 | .113* | .721** | 1 | | | |
| AC | .172** | −0.027 | .121* | .496** | .606** | 1 | | |
| DP | .145* | 0.09 | −0.042 | .387** | .550** | .587** | 1 | |
| NFC | −0.006 | 0.083 | −.206** | 0.028 | .153** | .129* | .292** | 1 |
| MEAN | | | | 3.44 | 3.52 | 3.72 | 3.78 | 3.22 |
| SD | | | | 1.029 | 0.962 | 0.908 | 0.878 | 0.998 |

注：N=305; *p<0.05,**p<0.01
SC:Similarity confusion; OC:Overload confusion; AC:Ambiguity confusion;
DP: purchase decision postponement; NFC: Need for cognition.

### 4.5 hypothesis tests

For the assumptions of this paper, this study mainly refers to grant and Berry's analysis steps [25]. On the basis of controlling the three demographic variables of online tourism consumers: gender, age and education background, the test results between independent variables and dependent variables are shown in Table 5.

Main effect tests. First of all, on the basis of controlling the three statistical variables of age, gender and educational background, the main effect of online travel consumers' confusion on the delay of purchase decision-making is investigated. It can be seen from table 5 that similar puzzle, overload puzzle and fuzzy puzzle have significant positive effects on purchase decision delay (M1, $\beta = 0.387$, $P < 0.01$; M2, $\beta = 0.55$, $P < 0.01$; m3, $\beta = 0.587$, $P < 0.01$). The H1, H2, H3 of this paper are verified.

**Table 5.    Results of hierarchical regression analysis**

| dependent variable | purchase decision postponement | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| independent variable | M1 | M2 | M3 | M4 | M5 | M6 | M7 | M8 | M9 | M10 |
| control variable | | | | | | | | | | |
| sex | 0.135 | 0.106 | 0.045 | 0.137 | 0.241 | 0.276 | -0.203 | 0.229 | -0.221 | 0.249 |
| age | 0.113 | 0.103 | 0.106 | 0.09 | 0.219 | 0.005 | 0.168 | 0.096 | 0.412 | -0.218 |
| edu | -0.104 | -0.106 | -0.115 | -0.045 | -0.084 | -0.078 | -0.189 | -0.165 | -0.387 | -0.352 |
| independent variable | | | | | | | | | | |
| sc | 0.387** | | | | | | | | | |
| oc | | 0.55** | | | | | | | | |
| ac | | | 0.587** | | | | | | | |
| Moderator variable | | | | | | | | | | |
| nfc | | | | 0.292** | | | | | | |
| Interaction item | | | | | | | | | | |
| sc*high nfc | | | | | -0.155 | | | | | |
| sc*low nfc | | | | | | -0.115 | | | | |
| oc*high nfc | | | | | | | -0.219* | | | |
| oc*low nfc | | | | | | | | -0.182 | | |
| ac*high nfc | | | | | | | | | -0.316** | |
| ac*low nfc | | | | | | | | | | -0.208* |
| R2 | 0.15 | 0.302 | 0.344 | 0.085 | 0.024 | 0.013 | 0.048 | 0.029 | 0.075 | 0.043 |
| F | 53.367 | 131.366 | 159.237 | 28.307 | 2.545 | 1.388 | 5.176 | 3.091 | 8.359 | 4.643 |

注：N=305; *p<0.05,**p<0.01

Regulatory effects test. Before verifying the regulatory effect of cognitive demand, in order to avoid the collinearity problem, independent variables (similar confusion, overload confusion, fuzzy confusion) and regulatory variables (cognitive demand) are centralized, and then interaction terms is constructed to investigate their influence on the delay of purchase decision. The results showed that under the regulation of high cognitive

demand, the regression coefficient of similar confusion to purchase decision delay was negative but not significant (M5, $\beta$ = -0.219, NS); overload confusion had significant negative regulation to purchase decision delay (M7, $\beta$ = -0.155, $P < 0.05$); fuzzy confusion had significant negative regulation to purchase decision delay (M9, $\beta$ = -0.316, $P < 0.01$). It can be seen that assuming h5a and h6a are verified, h4a is not tenable. Under the regulatory effect of low cognitive demand, the regression coefficient of similar confusion on purchase decision delays is negative but not significant (M6, $\beta$ = -0.115, NS); overload confusion has no significant effect on purchase decision delay (M8, $\beta$ = -0.182, NS); fuzzy confusion has significant negative regulatory effect on purchase decision delay (M10, $\beta$ = -0.208, $P < 0.05$). It can be seen that the validation results do not support hypothesis h6b.

In addition, in order to more intuitively present the regulatory effect between cognitive needs and online travel consumers' confusion and purchase decision delay, this study takes the mean value of cognitive needs variable plus minus a standard deviation as the grouping criteria, respectively, to describe the relationship between consumer confusion and satisfaction under the level of high cognitive needs and low cognitive needs. It can be seen from Figure 2 that whether online tourists' cognitive needs are high or low, confusion has a positive impact on the delay of purchase decision, which also verifies M4 ($\beta$ = 0.292, $P < 0.01$). When the consumer cognition demand is high, the negative effect of consumer confusion on the delay of purchase decision is strong; while when the demand cognition is low, the negative effect of consumer confusion on the delay of purchase decision is weak.
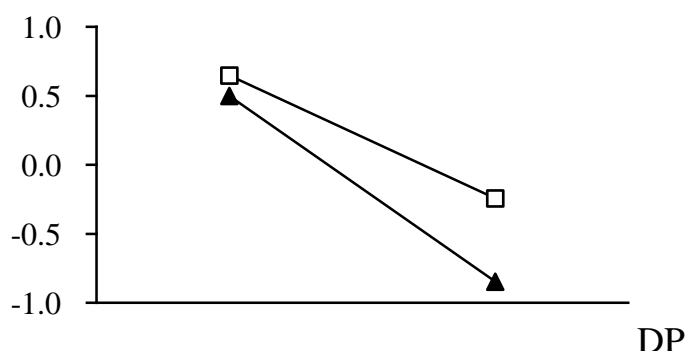


**Fig 2.    Regulatory effect diagram**

## 5. CONCLUSION INSPIRATION

The results show that: ① similar confusion, overload confusion and fuzzy confusion have a significant positive impact on the delay of purchase decision when online tourism consumers search for information. Among them, overload confusion and fuzzy confusion have great influence on the delay of purchase decision. ② Cognitive demand negatively regulates the relationship between similar confusion, overload confusion, fuzzy confusion and purchase decision delay. That is to say, consumers' cognitive demand will weaken the positive relationship between similar confusion, overload confusion, fuzzy confusion and purchase decision delay. ③ When the cognitive demand is high, the positive relationship between overload confusion and fuzzy confusion and purchase decision delay will be weakened; when the cognitive demand is low, the positive relationship between fuzzy confusion and purchase decision delay can only be weakened.

Theoretical enlightenment: This study takes online tourism consumers as the research object, discusses the influence of consumer confusion on the delay of purchase decision, enriches the research of consumer behavior to a certain extent, especially the influence of consumer confusion on user behavior. Secondly, in the previous research on consumer confusion and behavior, most of the focus is the direct effect of confusion on the outcome variable [26]. In fact, the relationship between consumer confusion and its behavioral response will also be affected by other variables, such as cognitive demand. Based on the cognitive demand, this paper divides it into

high and low situations to discuss, further enriching consumers Confused research.

Practical enlightenment: first of all, online tourism enterprises should try their best to control similar confusion in marketing promotion. No matter whether the cognitive ability of consumers is high or low, in the face of excessive information, it can not slow down the positive impact of consumer confusion on the delay of purchase decision, especially similar confusion. The results also show that the level of cognitive needs has no significant positive effect on the relationship between similar confusion and purchase decision delay. Secondly, when consumers are confused, online tourism enterprises should focus on consumers with low cognitive needs. This study shows that consumers with low cognitive needs are more likely to delay their purchase decisions when they are confused. Therefore, the staff of online tourism enterprises should patiently give answers and increase the time of interaction and communication with consumers with low cognitive needs, which can also make online tourism enterprises realize the shortcomings of online product marketing and publicity, and also provide new think direction for online tourism enterprises to provide effective promotion methods.

Research deficiencies and prospects: first of all, most of the sample data in this paper are concentrated between 19-29 years old, which may be different from the characteristics of online tourism consumers, inevitably affecting the externality of the research. Future research should collect a wide range of diverse samples to enhance the external effect of the research. In addition, this paper takes the mean value of the cognitive demand variable plus or minus a standard deviation as the grouping standard [16]. In the empirical study, this paper use high and low cognitive demand to analyze the mechanism of the influence of consumer confusion on the delay of purchase decision. Although some meaningful conclusions are obtained, it is still necessary to explore whether it can accurately express the cognitive ability of consumers.

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