

# Research on the Inducing Mechanism of Customers' Impulsive Buying in "Double 11" Shopping Carnival

Weiwei Zuo <sup>1</sup>, Zhihua Lian <sup>2</sup>

<sup>1</sup> Macau University of Science and Technology, Macau 00853, China

<sup>2</sup> Xiamen University Tan Kah Kee College, Zhangzhou 363105, China

**Abstract.** In recent years, impulse buying is increasingly common in China. Online impulse buying (OIB) has drawn increasing scholarly attention across disciplines. This study focuses on the impulse buying of "Double 11" Shopping Carnival, taking "Double 11" Shopping Carnival consumers as research object, through related theory, secondary data analysis and social network analysis, exploring the relationship between marketing stimulation, impulse buying and emotional response, and establish a theoretical model and propose hypotheses. Data were obtained from 325 consumers. According to the statistical analysis result, the paper demonstrates that the theoretical model verifies the consumers' impulsive buying can make a mediating effect between marketing stimulation and happy emotion, emotion of guilty, regretful emotion. In summary, this study made some marketing suggestions for the enterprises, including the utility of different ways to cause different kinds of emotions after impulsive buying for consumers.

**Keywords:** "Double 11" Shopping Carnival; impulse Buying; theory of Emotion.

## 1. Research background

Impulsive buying is very common in consumers' daily life. In recent years, consumers' purchasing behavior is constantly changing from traditional impulse buying to online impulse buying; Therefore, merchants use the e-commerce platform as a marketing carrier to instill various commercial advertisements into consumers to form marketing incentives for consumers; Due to the increasing consumption power of consumers, consumers are less and less of the goods they plan to buy, and more and more of the goods they don't plan to buy. The marketing stimulation made by merchants can effectively promote consumers to make impulsive purchases. At present, "Double 11" e-commerce promotion festival has become one of the main choices of consumers' impulsive buying. This study focuses on customers' impulsive buying, establishes a theoretical model of impulsive buying with "Double 11" online consumers as the research object, and conducts empirical analysis to explore the intermediary role of consumers' impulsive buying on marketing stimulation, happiness, guilt, regret and emotion, in order to provide corresponding inspiration and ideas for e-commerce enterprises in formulating marketing plans.

## 2. Theoretical basis and hypothesis

### 2.1 Impulsive buying

Impulsive buying by consumers began to attract the attention of researchers as early as 60 years ago (Clover 1950; West 1951). In the past 60 years or so, scholars have made some research achievements on the concept, influencing factors and inducing mechanism of impulsive buying. However, the definition of its concept has not yet formed a unified point of view, including the following three specific: (1) Impulsive purchase is unplanned purchase (Stilley & Inman, 2010); (2) Impulsive buying is an irrational behavior of consumers (Trevisan 2013); (3) Consumers buy impulsively because they are stimulated (Mattila & Wirtz 2008). The latest research suggests that impulsive buyers have a sudden and irresistible desire to buy when they implement purchasing behavior (Louis 2017). It is not difficult to see that scholars have not reached a unified understanding of the concept of impulsive buying.

By combing the definitions, it is not difficult to find that most scholars at home and abroad believe that impulsive purchasing behavior is related to the lack of rational self-control in the cognitive process of emotional stimulation, relieving inner pressure and ignoring the consequences after purchasing. Based on the above viewpoints, this study thinks that impulsive buying is a kind of buying behavior that consumers can't control themselves under

the sudden and irresistible driving force in the process of online shopping.

## 2.2 Emotional theory

Emotion is a kind of self-emotion produced by an individual about what he has experienced (Van Maanen & Kunda 1989). It is a kind of private emotional reaction produced by inner subjectivity (Scarantino 2010) In the process of studying the definition of emotion, scholars found that Wyssen and Bryjova (2016) found that emotion is the external manifestation of personal personality and the external release of personal emotion; Scott and Lavan (2015) pointed out that the differences between emotions and emotions are stronger and more noticeable than emotions Some scholars have applied emotion theory to the field of marketing. Bagozzi and Gopinath (2001) put forward earlier that merchants will stimulate consumers' emotions when conducting marketing activities. Later, Omid and Pons (2017) found that merchants can stimulate consumers' positive emotions when conducting price promotions, while Sassenberg and Fetterman (2015) found that merchants' promotions will bring consumers negative emotions caused by higher purchase price than usual.

Based on the above research, it is found that scholars still hold different views on the definition and concept of emotion theory (Steenkamp 2005) Among them, the most common criteria for dividing emotions are positive emotions and negative emotions, which will affect different types of emotions mainly because different people's psychological self-construction is different (Gountas 2007), and merchants' mastery of consumers' emotional reactions is an effective means to promote sales (Selma & Milena, 2013) Combined with the above viewpoints, this study holds that emotions are produced by physiological or psychological reactions caused by certain stimuli and expressed by some external behaviors.

## 2.3 The Influence of Marketing Stimulus on Impulsive Buying

Marketing incentives are all marketing means that merchants want to promote sales. According to the research, marketing incentives such as promotional means and shopping atmosphere created by merchants in the sales process can market consumers' impulsive buying behavior (Omid & Pons 2017) These marketing incentives mainly include: the sensitivity of consumers to the degree of saving and the sensitivity of consumers to the price The study found that the more money saved, the more impulsive buying (Shukla & Banerjee 2014; Peter & Vladimir 2014; Ramesh & Sanjay 2015; Mahshid & Frank 2016). In particular, the practicality of products and the attractiveness and hedonic nature of promotional products with favorable prices can attract more reminder impulse buying consumers (Shu-Ling Yung-Cheng & Chia-Hsien 2009); Advertising or price reduction promotional activities the promotional stimulation and possible price reduction information brought by dynamic advertisements in online stores have an impact on consumers' impulsive buying (Zhou & Wong 2003) Studies have shown that price discounts and sample gifts

received by consumers on shopping websites can increase consumers' impulsive buying tendency (Jiang Yi and Jiang Yuan gang 2014) There are also studies that show that consumers find that the promotion time limit and quantity limit of online products will significantly enhance consumers' perception of online shopping products, and the scarcity leads to a significant impact on consumers' impulsive purchases (Li Yicai and Li Ye hong 2017) To sum up, this paper puts forward the following assumptions according to relevant theories:

H1: Marketing stimulus has a positive impact on impulse buying

## 2.4 Emotional Factors Caused by Impulsive Buying Behavior

According to the literature at home and abroad, impulsive buying usually leads to happiness, guilt and regret (Maclnnis & Patrick 2006; Verplanken & Sato 2011; Fan Xiu cheng and Zhang Yunlai 2006; Wu Yuee 2014) Based on the research of Xu Zhifen (2010), we found the importance of emotional changes after impulse buying Consumers will feel a strong desire to buy on impulse purchase and can stimulate certain emotions after purchase. Consumption will also experience complex emotional changes in the process of impulse purchase or after purchase (Chen & Liang 2015) In the process of impulse buying, consumers will have positive emotions including happiness, joy, happiness and excitement (Pornpitakpan 2017) and negative emotions including regret, regret, self-blame and depression (Ozer & Gultekin 2015) Impulse buying also tends to be followed by pride or pride (Trampe 2011) and many people shop when their emotions are aroused. Emotional reaction will buy more goods than usual (Joaquin & Schniter 2017) Consumers see the packaging of products, the atmosphere of stores, the companionship of friends and other factors, and then produce a positive mood of joy, which will strongly stimulate consumers' desire to buy and finally produce impulsive buying behavior (Miao Yuxuan 2017) In addition, impulsive buying will adjust consumers' emotions after it occurs. For example, Wu Yuee (2014) found that consumers' positive emotions will be improved after impulsive buying. Compared with pre-purchase emotions, post-purchase emotions have obviously improved positive emotions According to the above analysis, consumers will have three emotions: happiness, guilt and regret from the post-purchase emotion of impulsive purchase According to the above related theories, this paper puts forward the following assumptions:

H2 : Impulsive buying plays an intermediary role between marketing stimulation and happiness

H3 : Impulsive buying plays an intermediary role between marketing stimulation and guilt

H4 : Impulsive buying plays an intermediary role between marketing stimulation and regret

Based on the above analysis, this study outlines the specific research framework as shown in Figure 1.

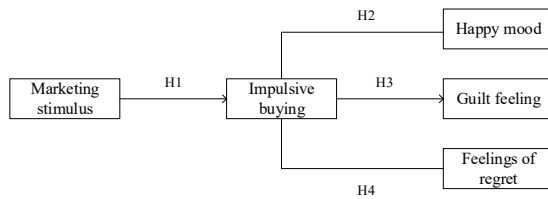


Fig. 1 Theoretical model

### 3. Research design

#### 3.1 Object and scope of investigation

This study will use the scale for accurate quantitative analysis and summary to verify whether the hypothetical model established in this study can be established. In order to validate the hypothesis of the study, this study takes "Double 11" online consumers as samples, adopts random sampling method to distribute questionnaires online and offline at the same time, and launches a structured questionnaire survey to select consumers of different ages, different educational backgrounds and different occupations to ensure the authenticity and effectiveness of the questionnaire survey. In addition, through the analysis of reliability, validity and items, the questionnaire was adjusted and modified according to the research purpose, and the items with controversial language expression and reliability were finally formed into a formal questionnaire. In this study, a total of 350 questionnaires were sent out, 336 questionnaires were recovered, and 11 invalid questionnaires were eliminated. A total of 325 valid questionnaires were recovered, and the effective recovery rate was 92.8%. Among them, men account for 35.1% and women account for 64.9%, and the proportion of tested women is larger than that of men; In terms of academic qualifications, 64% of them have college or junior college qualifications, which shows that the overall education level of the respondents is relatively high.

### 4. Statistical analysis

#### 4.1 Reliability analysis

The scale used in this survey was analyzed by Cronbach's Alpha. The Cronbach's Alpha reliability coefficient of impulse buying is 0.819; The Cronbach's Alpha reliability coefficient of marketing stimulus was 0.845; The Cronbach's Alpha reliability coefficient of happiness was 0.879; The Cronbach's Alpha reliability coefficient of guilt was 0.874; Cronbach's Alpha Reliability Coefficient of Regret Emotion is 0.775, which shows that there is a strong consistency among all dimensions. The items of the scale are reasonable to edit the overall Cronbach's Alpha value of the scale studied in this paper is 0.877, which shows that the questionnaire has high reliability, and there is ideal internal consistency among the items of the questionnaire. The reliability, consistency and stability of the sample are very strong, and the questionnaire has high reliability.

Table 1 Internal consistency test

| variable           | Cronbach's Alpha |
|--------------------|------------------|
| Impulsive buying   | 0.819            |
| Marketing stimulus | 0.845            |
| Happy mood         | 0.879            |
| Guilt feeling      | 0.874            |
| Feelings of regret | 0.775            |
| Total amount table | 0.877            |

#### 4.2 Exploratory factor analysis

Generally speaking, KMO and Bartlett should be tested before factor analysis, that is, validity analysis. In this paper, the overall KMO (Kaiser-Meyer-Olkin) test statistic is 0.920, which is close to the 1. Bartlett spherical test Chi-square value is 3090.525,  $p < 0.001$ , which has strong significance and is suitable for factor analysis.

Table 2 Test of KMO and Bartlett

|                                      |                        |
|--------------------------------------|------------------------|
| Quantity of KMO sampling suitability | 0.920                  |
| Bartlett's sphericity test           | Approximate chi-square |
|                                      | 3090.525               |
|                                      | df                     |
|                                      | 105                    |
|                                      | Sig.                   |
|                                      | 0.000                  |

According to the results of exploratory factor analysis, four common factors were extracted in this study. Among them, four common factors can explain 78.399% of the total variance of the whole questionnaire, reaching the ideal judgment value put forward by Wu minglong (2010), which has excellent construction validity. After sorting out the impulse purchase marketing stimulation happiness emotion guilt emotion and regret emotion factor load and commonality as shown in the table found that the factor load of each dimension of the items are greater than 0.6, which shows that the items between the dimensions can be clearly distinguished. The whole scale has a good constructional validity.

Table 3 Validity test form

| Dimension          | Item                 | Factor load | Total variance of cumulative interpretation% |
|--------------------|----------------------|-------------|--|
| Impulsive buying   | Impulsive buying 1   | 0.844       | 37.209                                       |
|                    | Impulsive buying 2   | 0.847       |  |
|                    | Impulsive buying 3   | 0.772       |  |
|                    | Impulsive buying 4   | 0.723       |  |
| Marketing stimulus | Marketing stimulus 1 | 0.838       | 56.577                                       |
|                    | Marketing stimulus 2 | 0.811       |  |

|                    |                      |       |        |
|--------------------|----------------------|-------|--------|
|                    | Marketing stimulus 3 | 0.795 |        |
|                    | Marketing stimulus 4 | 0.734 |        |
| Happy mood         | Happy mood 1         | 0.864 | 67.527 |
|                    | Happy mood 2         | 0.935 |        |
| Guilt feeling      | Guilt feeling 1      | 0.756 |        |
|                    | Guilt feeling 2      | 0.895 | 74.192 |
|                    | Guilt feeling 3      | 0.915 |        |
| Feelings of regret | Feelings of regret 1 | 0.756 | 78.399 |
|                    | Feelings of regret 2 | 0.895 |        |

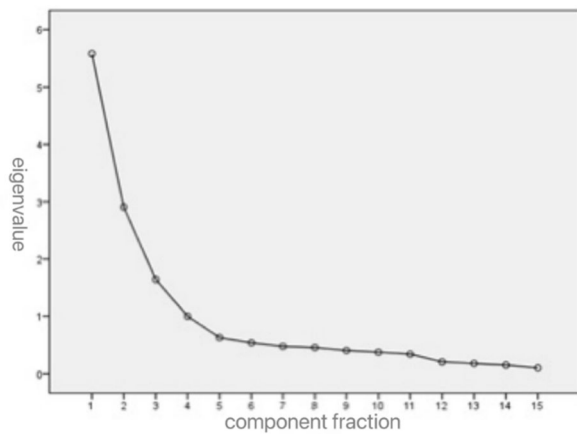


Fig. 2 Gravel map

### 4.3 Descriptive Statistics and Correlation Analysis

The research object of this study is the "Double 11" online consumer survey sample. The background variables include gender, age, education level, occupation, disposable income, shopping websites and types of products purchased. The purpose is to understand the basic situation of the survey sample. The following descriptive statistics are carried out for the sample data.

The Pearson correlation coefficients were observed and found that there were significant intrinsic correlations among the variables Specific as follows: Marketing incentives and impulse buying ( $r=0.547$   $p < 0.01$ ) has a significant correlation; There is a significant correlation between marketing stimulation and happiness ( $r=0.479$   $p < 0.01$ ). There is a significant correlation between marketing stimulation and guilt ( $r=0.530$   $p < 0.01$ ). There is a significant correlation between marketing stimulation and regret emotion ( $r=0.583$   $p < 0.01$ ). There is a significant correlation between impulsive buying and happiness ( $r=0.476$   $p < 0.01$ ). There is a significant correlation between impulsive buying and guilt ( $r=0.535$   $p < 0.01$ ). There was a significant correlation between impulsive buying and feeling of regret ( $r=0.628$   $p < 0.01$ ) Therefore, impulse buying and marketing stimulation

have a correlation relationship, impulse buying and marketing stimulation also have a significant correlation with happiness, guilt, regret and emotion.

Table 4 Correlation Analysis

| N  | Category   | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10 |
|----|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|
| 1  | Gender     | -      |        |        |        |        |        |        |        |        |    |
| 2  | Age        | 0.011  | -      |        |        |        |        |        |        |        |    |
| 3  | Education  | 0.129* | 0.442* | -      |        |        |        |        |        |        |    |
| 4  | Occupation | 0.140* | 0.139* | 0.282* | -      |        |        |        |        |        |    |
| 5  | DI         | 0.206* | 0.541* | 0.231* | 0.031  | -      |        |        |        |        |    |
| 6  | MS         | 0.160* | 0.061  | 0.042  | 0.144* | -0.14* | -      |        |        |        |    |
| 7  | IB         | 0.226* | 0.061  | 0.183* | 0.245* | 0.046  | 0.547* | -      |        |        |    |
| 8  | HM         | 0.082  | 0.083  | 0.094  | 0.163* | 0.043* | 0.479* | 0.476* | -      |        |    |
| 9  | GF         | 0.168* | 0.144* | 0.037  | 0.035  | 0.162* | 0.535* | 0.534* | 0.164* | -      |    |
| 10 | FR         | 0.090  | 0.104  | 0.031  | 0.068  | 0.080  | 0.583* | 0.628* | 0.625* | 0.432* | -  |

Note1: N = 325,  $P < 0.05$ \*,  $P < 0.01$ \*\*

Note2: Disposable income=DI; Marketing stimulus=MS; Impulsive buying=IB; Happy mood=HM; Guilt feeling=GF; Feelings of regret=FR

### 4.4 A Test of the Mediating Effect of Impulsive Buying

In order to study whether consumers' marketing stimulus will affect happiness, guilt and regret through impulsive buying, this study tests the hypothesis of impulsive buying as intermediary effect through three groups of models and hierarchical regression analysis Table 5, Table 6 and Table 7 are specific hypothesis tests. The results show that marketing stimulus has a significant relationship with impulsive buying.

Impulsive buying has a mediating effect between marketing stimulus and happiness, guilt and regret In Table 5, Model 1 includes the background variables of consumers, such as gender, age, education, occupation and so on, as the control variables of the research model. Marketing stimulus has a positive and significant impact on happiness. Model 4 shows that marketing stimulus has a positive impact on happiness because of impulsive purchase Specifically, the marketing stimulus in Model 2 ( $\beta = 0.771, P < 0.001$ ) has a positive and significant effect on happiness. The marketing stimulus in Model 3 ( $\beta = 0.502, P < 0.001$ ) also has a significant relationship with impulse buying ( $\beta = 0.225, P < 0.001$ ). The mediating effect of impulse buying ( $\beta = 0.649, P < 0.001$ ) is significant and the independent variable marketing stimulus ( $\beta = 0.649 < 0.771, P < 0.001$ ) is significantly weakened. At the same time, the fitting degree of the model is ideal and the Durbin-Watson is between 1.25 and 2.5, which shows that the residual distribution of the model is ideal Therefore, impulsive buying has a significant mediating effect between marketing stimulation and happiness. Impulsive buying has a significant transmission effect in the model.

Table 5 Class regression of mediating effect 1

| Variable               | Model 1 | Model 2<br>Happy mood | Model 3<br>Impulsive buying | Model 4<br>Happy mood |
|------------------------|---------|-----------------------|-----------------------------|-----------------------|
| Gender                 | 0.03    | -0.010                | 0.115*                      | -0.011                |
| Age                    | 0.01    | -0.087                | 0.103                       | -0.088                |
| Educational background | 0.02    | 0.010                 | 0.165**                     | 0.010                 |
| Occupation             | 0.15    | 0*                    | -0.081                      | -0.125**              |
| Disposable income      | 0.12    | 5                     | -0.016                      | 0.036                 |
| Marketing stimulus     |         | 0.771*                |                             | 0.649*                |
| Impulsive buying       |         | **                    | 0.502***                    | **                    |
| R <sup>2</sup>         | 0.04    | 0.546*                |                             | 0.548*                |
| adj- R <sup>2</sup>    | 5       | **                    | 0.566***                    | **                    |
| F                      | 0.03    | 0.534*                |                             | 0.532*                |
| D-W                    | 0       | **                    | 0.553***                    | **                    |
|                        | 2.98    | 86.121                | 116.133*                    | 168.23                |
|                        | 6       | ***                   | **                          | 6***                  |
|                        |         | 2.018                 | 1.963                       | 2.020                 |

Note1:N=325, P<0.05\*, P<0.01\*\*, P<0.001\*\*\*

Table 6 fully shows that marketing incentives affect guilt feelings due to impulsive purchases Concretely, the model 5 included the background variables such as gender, age, educational background, occupation and so on as the control variables of the research model in order to obtain more objective test results for the research statistics. The specific analysis is as follows: in Model 6, marketing stimulus ( $\beta = 0.621, p < 0.001$ ) has a positive and significant impact on guilt, and in Model 7, marketing stimulus ( $\beta = 0.502, p < 0.001$ ) also has a significant relationship with impulse buying ( $\beta = 0.365, p < 0.001$ ), the intermediary effect is significant and the independent variable marketing stimulus ( $\beta = 0.455, p < 0.001$ ) is obviously weakened ( $\beta = 0.455 < 0.621, p < 0.001$ ) in Model 8. At the same time, the fitting degree R of the model is ideal and Durbin-Watson is between 1.25 and 2.5, Therefore, impulsive buying has a significant mediating effect between marketing stimulus and guilt. Impulsive buying has a significant transmission effect in the model.

Table 6 Class regression of mediating effect 2

| Variable               | Model 5 | Model 6<br>Guilt feeling | Model 7<br>Impulsive buying | Model 8<br>Guilt feeling |
|------------------------|---------|--------------------------|-----------------------------|--------------------------|
| Gender                 | 0.03    | 2                        | 0.138*                      | 0.115*                   |
| Age                    | 0.01    | -                        |                             | 0.211*                   |
| Educational background | 0.02    | 7                        | 0.177*                      | 0.103                    |
| Occupation             | 0.15    | 6                        | -0.067                      | 0.165**                  |
| Disposable income      | 0.12    | -                        |                             | -0.122                   |
| Marketing stimulus     |         | 0.15                     |                             |                          |
| Impulsive buying       |         | 0*                       | 0.022                       | -0.125**                 |
| R <sup>2</sup>         | 0.04    | 0.468*                   |                             | 0.570*                   |
| adj-R <sup>2</sup>     | 5       | **                       | 0.566***                    | **                       |
| F                      | 0.03    | 0.454*                   |                             | 0.551*                   |
| D-W                    | 0       | **                       | 0.553***                    | **                       |
|                        | 2.98    | 96.336                   | 116.133*                    | 121.88                   |
|                        | 6       | ***                      | **                          | 2***                     |
|                        |         | 2.035                    | 1.963                       | 2.003                    |

Note1:N=325, P<0.05\*, P<0.01\*\*, P<0.001\*\*\*

Secondly, Table 7 fully demonstrates that marketing incentives affect regrets due to impulsive purchases. Concretely, the model 9 included the background variables such as gender, age, educational background, occupation and so on as the control variables of the research model in order to obtain more objective test results for the research statistics. The specific analysis is as follows: in Model 10, the marketing stimulus ( $\beta = 0.681$ ,  $P < 0.001$ ) has a positive and significant impact on regret, and in Model 11, the marketing stimulus ( $\beta = 0.502$ ,  $P < 0.001$ ) also has a significant relationship with impulse buying ( $\beta = 0.356$ ,  $P < 0.001$ ), the intermediary effect is significant and the independent variable marketing stimulus ( $\beta = 0.563$ ,  $P < 0.001$ ) is obviously weakened ( $\beta = 0.563 < 0.681$ ,  $P < 0.001$ ). At the same time, the fitting degree R of the model is ideal and Durbin-Watson is between 1.25 and 2.5, which shows that its residual Therefore, impulsive buying has a significant mediating effect between marketing stimulus and regret emotion. Impulsive buying has a significant transmission effect in the model.

Table 7 Class regression of mediating effect 3

| Variable               | Mode 19 | Mode 110           | Model 11         | Model 12           |
|------------------------|---------|--------------------|------------------|--------------------|
|                        |         | Feelings of regret | Impulsive buying | Feelings of regret |
| Gender                 | 0.032   | 0.084              | 0.115*           | 0.027              |
| Age                    | 0.017   | -0.109             | 0.103            | -0.187             |
| Educational background | 0.026   | -0.046             | 0.165**          | -0.111             |
| Occupation             | 0.150*  | -0.054             | -0.125**         | 0.018              |
| Disposable income      | 0.125   | -0.012             | 0.036            | 0.018              |
| Marketing stimulus     | 0.681   | 0.502**            | 0.563**          | 0.563**            |
| Impulsive buying       |         |                    |                  | 0.356**            |
| R2                     | 0.045   | 0.553***           | 0.566**          | 0.634**            |
| adj-R2                 | 0.030   | 0.535***           | 0.553**          | 0.614**            |
| F                      | 2.986   | 89.12***           | 116.133***       | 120.402***         |
| D-W                    |         | 2.018              | 1.963            | 1.853              |

Note1: N=325,  $P < 0.05^*$ ,  $P < 0.01^{**}$ ,  $P < 0.001^{***}$

From the above analysis, we can see that "Double 11" marketing stimulus can positively affect consumers' emotions through impulsive buying, while "Double Eleven" marketing stimulus can positively affect consumers' happy emotions through impulsive buying; "Double Eleven" marketing stimulation can positively affect consumers' guilt through impulsive purchase; "Double Eleven" marketing stimulus can positively affect consumers' regret emotion through impulse buying, that is, impulse buying plays an intermediary role in the relationship between marketing stimulus and three emotions. Therefore, the intermediary models H1H2H3 and H4 of impulsive buying are valid.

## 5. Conclusion and discussion

Based on the "Double 11" impulsive buying, this study studies the inducing mechanism of impulsive buying, comprehensively applies marketing principles, consumer behavior, marketing research, network marketing and statistics and other related theories and methods. This paper investigates the inducing mechanism of "Double 11" impulsive buying by using qualitative and quantitative research methods. Firstly, through summarizing the domestic and foreign literatures of impulsive buying and putting forward a theoretical research model to study the inducing factors and influencing mechanism of impulsive buying; Secondly, using second-hand data and social network analysis, this paper analyzes and summarizes the impulse buying and emotional changes stimulated by "Double 11" marketing, and then finds the correlation between them; Finally, using SPSS 20.0 to analyze the data of 325 "Double 11" online consumer questionnaires. Finally, the following conclusions are drawn: "Double 11" impulsive buying has a significant mediating effect between marketing stimulus and emotional changes. Impulsive buying plays a significant transmission effect in the model. Therefore, this study concludes that "Double 11" impulsive buying has a significant mediating effect between marketing stimulation and emotional changes. Finally, according to the survey results, this study puts forward the following three suggestions on impulse buying of related enterprises: 1. Improve the personalized service of information push; 2. Choose the right time to carry out different types of marketing incentives; 3. Use the visual impact of commodity display to attract consumers; 4. Avoid the negative emotions of consumers in the process of impulsive buying. I hope to provide corresponding inspiration and ideas for e-commerce enterprises in formulating marketing plans in the next online promotion activities.

## References

1. Bagozzi R P, Gopinath M, Nyer P U. The Role of Emotions in Marketing. *Journal of the Academy of Marketing Science*. 2001, 27(2).
2. Bak SuJin, Jeong Yunjool, Yeu Minsun, et al. Brain-computer interface to predict impulse buying

- behavior using functional near-infrared spectroscopy. *Scientific Reports*.2022,vol12(1):18-24.
3. Chester D S, Dewall C N. Combating the sting of rejection with the pleasure of revenge: A new look at how emotion shapes aggression.. *Journal of Personality and Social Psychology*. 2017, 112(3): 413-430.
  4. Ekrem D, M P B. Emotion and episodic memory in neuropsychiatric disorders. *Behavioural Brain Research*. 2010, 215(2): 162-171.
  5. Jiang Yi, Jiang Yuangang. Research on the influence of website promotion on consumers' impulsive buying intention. 2014, 6 (65-71).
  6. Laros F, Steenkamp J. Emotions in consumer behavior: a hierarchical approach. *Journal of Business Research*. 2005, 58(10): 1437-1445.
  7. Li Yicai, Li Yehong. An empirical study on the influence of online promotion on consumers' impulsive buying behavior. *Commercial Times*. 2017 (9): 38-39.
  8. Mattila A, Wirtz J. The role of store environmental stimulation and social factors on impulse purchasing. *Journal of Services Marketing*. 2008, 22(7): 562-567.
  9. Ozer L, Gultekin B. Pre- and post-purchase stage in impulse buying: The role of mood and satisfaction. *Journal of Retailing & Consumer Services*. 2015, 2015(22).
  10. Peter, Vladimir. Promotion and shoppers' impulse purchases: the example of clothes. *Journal of Consumer Marketing*. 2014, 31(2): 94-102.
  11. Scarantino. Insights and Blindspots of the Cognitivist Theory of Emotions. *British Journal for the Philosophy of Science*. 2010, 61(4): 729-768.
  12. Scherer K, Dr. Ladd, Silverman K. Vocal cues to speaker affect: Testing two models. *Journal of the Acoustical Society of America*. 1984, 76(5).
  13. Stillely K M, Inman J J, Wakefield K L. Planning to Make Unplanned Purchases? The Role of In-Store Slack in Budget Deviation. *Journal of Consumer Research*. 2010, 37(2): 264-278.
  14. Van Maanen J, Kunda G. 'Real Feelings': Emotional Expression and Organizational Culture. *Cellular Immunology*. 1989, 13(2): 230-240.
  15. Weinberg P, Gottwald W. Impulsive consumer buying as a result of emotions. *Journal of Business Research*. 1982, 10(1): 43-57.
  16. Wu Minglong. *Structural Equation Modeling: Operation and Application of AMOS*. Chongqing: Chongqing University Press, 2010.
  17. Xie Xiaodong, Yu Chengfu, Zhang Wei. Materialism and impulsive buying behavior of college students: the mediating role of money attitude. *Applied Psychology*. 2017, 23 (1): 40-48.
  18. Zhao Yuna. *Research on the influence of website environment characteristics on consumers' impulse buying*. Changchun: Jilin University, 2010.