

Summer 6-30-2018

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Recommended Citation

Zhang, Liyi; Huang, Shan; and Liu, Qihua, "Impacts of Psychological Distance-based Sales Promotion on Online Purchasing Behaviors under Different Involvement" (2018). *WHICEB 2018 Proceedings*. 69.

<http://aisel.aisnet.org/whiceb2018/69>

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Impacts of Psychological Distance-based Sales Promotion on Online Purchasing Behaviors under Different Involvement

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Abstract: Via consumer surveys after the “Double 11” promotion, we studied consumers’ consumption behavior and its influencing factors (temporal distance, social distance, product types and purchase decision involvement) based on the CLT and involvement theory with logistic regression modeling. The results show that the effect of temporal distance on purchasing decisions is increasing in high-involvement products and decreasing in low-involvement products, while social distance has a negative impact on purchasing decisions in both high and low-involvement products. Consumers’ purchase decision involvement is reinforced by temporal distance, while is no relevant to social distance. Specifically, when consumers are temporally distant from knowing the promotion issues, their purchase decision involvement tends to be higher and cost more in online promotion. Results provide practical marketing implications and help to enrich marketing theory.

Keywords: temporal distance, social distance, product involvement, purchase decision involvement, sales promotion

1. INTRODUCTION

Sales promotion is becoming increasingly penetrated among individuals, which is also an important means to clear inventory and improve sales. In China, “Double 11”(also called Single’s Day), created by Taobao.com in 2009 and launched in November 11th of each year, is the most typical online sales promotion activity, followed by many other e-commerce platforms. It attracted a substantial number of consumers and the sales on Taobao.com reached 14.3 billion US\$ in the last Single’s Day. Do online promotions influence consumers’ purchase decision? Furthermore, do consumers enjoy online promotion and buy more? It is imperative to understand how online promotions impact consumers’ purchase decision and which factors are effective in this process.

A large number of determinants of online shopping behavior have been identified and discussed on sales promotion, which focus on perceived characteristics of the web as a sale channel, website and product characteristics, and consumer characteristics^[1]. In addition to external stimulus, psychological representation could also affect the purchase decision-making process of consumers in online sale promotion situations, which need further research. The construal level theory revealed the influence of psychological distance on consumers' expectation, evaluation and purchase behavior^[2]. Although scholars have examined how the psychological distance affects consumers’ impulse buying and purchase decisions and salient highlight the information contents^[3], information forms^[4] and decision-making process^[5], they fail to take into consideration the role of involvement in the process of consumer decision making. In terms of the object of psychological distance, compared to products with low involvement, the decision making process of products with high involvement often took more time and careful consideration^[6]; regarding the subject of psychological distance, consumers who shown higher purchase-decision involvement entailed a greater expenditure of time and money^[7].

The objective of this paper is to empirically examine the impact of psychological distance on online purchase behaviors of high and low involvement products in online sales promotion. Comparing the different

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strategies invoked by psychological distance on purchasing of high involvement vs. low involvement products, we explore the interactive relationship between psychological distance and product involvement in online sales promotion. Then, we examine the effects of psychological distance on consumers' purchase decision involvement and validate whether these two aspects would salient facilitate the consumer purchase behavior.

2. DEVELOPMENT OF RESEARCH HYPOTHESES

The construal level theory proposes that individuals tend to carry on more concrete representations (lower level construal) on near events, while represent the distant events more abstractly (higher level construal)^[8]. As high-involvement products generally possess higher capital values, they need more time to consider before making the purchase decision, and their decision-making process emphasis more on desirability demands, which represent a high level construal. On the contrary, low-involvement products always emphasize feasibility demands, which represent a low level construal. According to cognitive match principle, consumers are more likely to purchase high-involvement products in the distant future enabled with high level construal; but withal preferring to purchase low-involvement products in the near future enabled with low level construal^[6]. Consequently, we propose the following hypotheses:

H1a. When purchasing high involvement products, the temporal distance is positively related to consumers' purchase decision.

H1b. When purchasing low involvement products, the temporal distance is negatively related to consumers' purchase decision.

In terms of information receiver, even if a product's own quality is constant, consumers would perceive it a higher level construal from the recommendation of socially distant than from the corresponding proximal alternatives. Whereas, the cognition of high level construal manner requires more time-cost and cognitive effort for consumers to make purchase decisions relied on the objective evaluation, thus, the consumer is easier influenced by subjective cognition and other psychological stimuli. Accordingly, we propose the following hypotheses:

H2a. When purchasing high involvement products, the social distance is positively related to consumers' purchase decision.

H2b. When purchasing low involvement products, the social distance is negatively related to consumers' purchase decision.

Consumers' mental construal differed from diffusion path and time of the information even in the same sales promotion. Specifically, consumers who receive the activity information in the moment or from the dissimilar others will construe a high level of mental construal. The construal level generated from psychological distance would further influence consumers' evaluation behavior, including the main, goal-related properties or secondary, goal-irrelevant properties; feasibility or desirability demands; standing in the idealistic perspective or realistic perspective, etc.^[2]. Consumers who have confirmed their personal values are more willing to make additional efforts to obtain the information and reduce the risk of uncertainty, so as to show a high level of purchase-decision involvement^[9]. So, we can make the following hypotheses:

H3a. The temporal distance is positively associated with consumer's purchase-decision involvement.

H3b. The social distance is positively associated with consumer's purchase-decision involvement.

The total consumption refers to the amount of a consumer who finally consumed in the promotion. Chiou and Ting^[10] has examined the differences between online shopping motivation and product type on the searching and spending behavior in a website. They indicate that goal-oriented consumers are willing to spend more on hedonic goods without guilt and regret. Tangari^[11] has indicated that consumers' purchase intentions can be significantly influenced by temporal distance and social distance. Furthermore, temporally distant events and

socially distant events would accordingly lead to a more abstract information expression which represents a high level construal^[2]. So, we have:

H4a. In sales promotion, consumer’s temporal distance is positively related to the total consumption.

H4b. In sales promotion, consumer’s social distance is positively related to the total consumption.

O’Cass^[12] has found that, as an antecedent to purchase-decision involvement, product involvement would positively impact consumers’ purchase-decision involvement. Hereby, we speculate that consumers involved with higher level of purchase-decision involvement pretend to purchase more high involvement products. Furthermore, as high involvement products tend to correspond to high capital value^[6], the total consumption is easier to accumulating by consumers purchase behaviors. Thus, we suggest the following:

H5. In sales promotion, purchase decision involvement positively impacts consumers’ total consumption.

The theoretical framework is shown in Figure1.

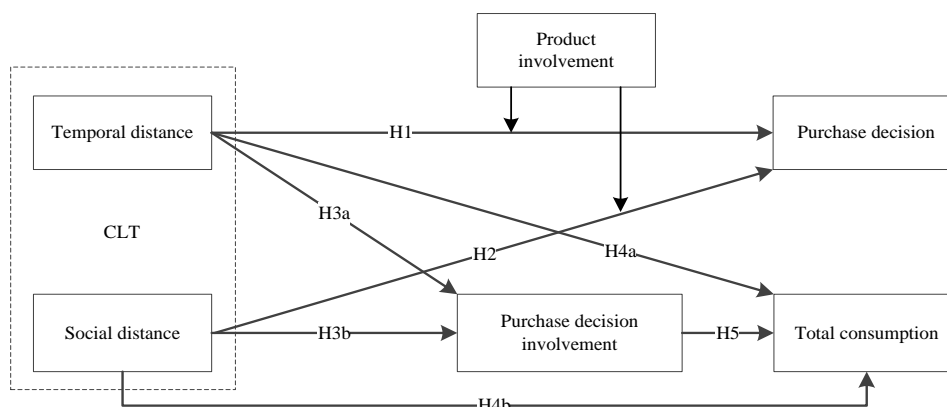


Figure 1. Theoretical framework

3. DATA AND MEASURES

3.1 Data collection

A total of 577 respondents participated in the survey during the 7 day sample collection period with the efficiency of 92.2%, of which 45 invalid questionnaires were excluded and 532 valid questionnaires were sampled. The results of descriptive statistical analysis on respondents are shown in Table 1, and manifest that the questionnaire objects basically conform to the general distribution of online shoppers.

Table 1. The descriptive statistical analysis on respondents

Item	Characteristics	N	%
Gender	Male	214	40.2
	Female	318	59.8
Age	<18	9	1.7
	18-25	359	67.5
	26-34	130	24.4
	35-45	31	5.8
	>45	3	0.6
Education background	Senior high school and less	121	22.7
	Undergraduate	336	63.2
	Postgraduate	64	12.0
	Doctor degree and more	11	2.1

3.2 Measures

Temporal distance (Temporal D) refers to the time interval between the time consumer perceiving the “Double 11” promotion and the beginning time of the promotion.

Social distance (Social D) is determined by the acquisition channel of the “Double 11” promotion.

Purchase decision (Purchase_D) measures whether consumers purchase the high or low involvement products, designated as a binary dummy variable.

Purchase decision involvement (Purchase_D_I) refers to the level of involvement for a consumer in decision making in the context of the “Double 11” promotion. We measure it with five-point scales adapted from O’Cass^[12] and Jung^[13].

Total consumption (Total_C) is utilized to measure consumer purchase amount. The questionnaire sets up five measurable indicators, which indicates the consumers total consumption increases gradually.

Control variables include *Income*, *Gender*, *Education*, *Shopping frequency* (Shopping F), *Shopping time* (Shopping T) and *Shopping equipment* (Shopping E).

The correlation coefficient matrix of the key variables (independent variables, dependent variables and control variables) and their summary statistics are shown in Table 2.

Table 2. The correlation coefficient matrix of the key variables

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1.Total_C	2.36	0.97	1									
2. Temporal D	0.53	0.50	0.11	1								
3.Social D	0.76	0.43	-0.01	-0.01	1							
4.Purchase_D_I	3.09	1.11	0.18	0.10	-0.07	1						
5.Income	2.10	1.72	0.47	-0.04	-0.03	0.07	1					
6. Gender	0.40	0.49	0.07	-0.04	-0.10	0.02	0.21	1				
7. Education	1.93	0.65	0.12	0.12	-0.02	-0.02	0.07	-0.02	1			
8. Shopping E	1.60	0.50	-0.07	0.01	0.01	-0.04	0.01	0.09	0.11	1		
9. Shopping F	2.03	0.81	0.31	0.01	-0.02	0.19	0.39	-0.05	-0.04	-0.08	1	
10. Shopping T	2.87	1.58	-0.17	-0.23	0.03	-0.15	0.11	0.05	-0.07	0.06	-0.05	1

4. EMPIRICAL METHODOLOGY AND RESULTS

4.1 Empirical model

Our estimation strategy relies on the application of ordinary least square regression and logistic regression, processed by SPSS16.0. Following the procedure proposed by Hailpern and Visintainer^[14], we employ the following econometric specifications:

$$\text{logit}\left(p\left|Purchase_D_{ijt}\right.\right) = \alpha * TD_i + \beta * SD_i + \sum_j \sigma_j * P_j + \sum_T \tau_t * C_t + \varepsilon_{ijt} \quad (1)$$

$$Purchase_D_I_{ijt} = \alpha * TD_i + \beta * SD_i + \sum_j \sigma_j * P_j + \sum_T \tau_t * C_t + \delta + \varepsilon_{ijt} \quad (2)$$

$$\text{logit}\left(p\left|Purchase_A_{ijt}\right.\right) = \alpha * TD_i + \beta * SD_i + \gamma * Purchase_{D_{it}} + \sum_j \sigma_j * P_j + \sum_T \tau_t * C_t + \varepsilon_{ijt} \quad (3)$$

In the literature, we employ Equation (1) to test hypotheses H1a, H1b, H2a and H2b, Equation (2) to test hypotheses H3a and H3b, while Equation (3) to test hypotheses H4a, H4b, and H5. In addition, TD and SD represent temporal distance and social distance respectively, P_j a vector of user situational variables (including Shopping time and Shopping equipment), and C_t a vector of user characteristics variables (including Income,

Gender, Education and Shopping frequency). Lastly, α is a constant, subscript i indexes consumers, j indexes situational variables and t indexes user characteristics variables.

4.2 Results

Since the purchase decision is a binary dummy variable, which subjects to the binomial distribution and the residual sum to zero, so we apply binary logistic regression model. The regression results are shown in Table 3 and Table 4.

Table 3. Binary Logistic Regression Results of High Level Involvement Products

Parameter	B	S.E.	Wald	P value	Exp(B)
Temporal D	0.57	0.23	5.82	0.02**	1.76
Social D	-0.46	0.25	3.32	0.07*	0.63
Income	0.03	0.10	0.08	0.77	1.03
Gender	1.42	0.24	34.33	0.00***	4.15
Education	-0.02	0.18	0.01	0.92	0.98
Shopping F	0.43	0.15	8.54	0.00***	1.54

Notes: *, $p<0.1$; **, $p<0.05$; ***, $p<0.01$; ns, not significant.

Table 4. Binary Logistic Regression Results of Low Level Involvement Product

Parameter	B	S.E.	Wald	P value	Exp(B)
Temporal D	-0.58	0.22	7.24	0.01***	0.56
Social D	-0.74	0.23	10.35	0.00***	0.48
Income	-0.28	0.11	6.60	0.01**	0.76
Gender	0.14	0.23	0.37	0.54	1.15
Education	0.19	0.17	1.25	0.26	1.21
Shopping F	0.33	0.15	5.16	0.02**	1.39

Notes: *, $p<0.1$; **, $p<0.05$; ***, $p<0.01$; ns, non-significant.

From the regression results, we find that H1a, H1b and H2b were supported while H2a was not supported. That is, the perceived temporal distance is positively related to the purchase decision for high involvement products ($\alpha=0.562$, $p<0.05$), the perceived temporal distance ($\alpha=0.555$, $p<0.05$) and social distance ($\beta=0.749$, $p<0.05$) are positively associated with the purchase decision for low involvement products respectively. However, we find a negative interaction effect ($\beta=0.459$, $p<0.05$).

We employ ordinary least square regression to account for the situational and user characteristic effects. Table 5 presents our regression results.

Table 5. OLS Regression Results of Purchase-Decision Involvement

Parameter	B	Standard parameter estimate	S.E.	t value	P value
Temporal D	0.23	0.12	0.08	2.76	0.01***
Social D	-0.14	-0.06	0.10	-1.48	0.14
Income	0.13	0.15	0.04	3.22	0.00***
Gender	0.01	0.00	0.09	0.07	0.95
ShoppingT	-0.08	-0.12	0.03	-2.91	0.00***
Shopping F	0.26	0.21	0.06	4.57	0.00***
ShoppingE	-0.06	-0.03	0.08	-0.73	0.47
R ²	0.13				
Adjusted R ²	0.12				

Notes: *, $p<0.1$; **, $p<0.05$; ***, $p<0.01$; ns, not significant.

In support of H3a, the regression results show positive relationships between temporal distance and purchase-decision involvement of consumers ($\alpha=0.23$, $p<0.05$). That is, the one who receives the promotion information earlier is more probably to show the high level of involvement in decision making. However, social distance is not significantly associated with purchase-decision involvement of consumers ($\beta=-0.14$, $p>0.05$), thus H3b is not support.

Since the total consumption is a continuous variable, we estimate the equation with ordinary least square regression. The regression results are shown in Table 6.

Table 6. OLS Regression Results of Total Consumption

Parameter	B	Standard parameter estimate	S.E.	t value	P value
Temporal D	0.20	0.08	0.09	2.15	0.03**
Social D	0.04	0.02	0.11	0.40	0.69
Purchase_D_I	0.10	0.09	0.04	2.33	0.02**
Income	0.47	0.45	0.04	10.79	0.00***
Gender	-0.04	-0.02	0.10	-0.45	0.65
ShoppingT	-0.15	-0.19	0.03	-4.85	0.00***
Shopping F	0.15	0.10	0.06	2.42	0.02**
ShoppingE	-0.14	-0.06	0.09	-1.54	0.13
R ²	0.30				
Adjusted R ²	0.29				

Notes: *, $p<0.1$; **, $p<0.05$; ***, $p<0.01$; ns, not significant.

As shown in Table 6, consumers with higher income or shopping frequently are prone to expend more (the *Total consumption is higher*) in the “Double 11” promotion. Moreover, the total consumption of consumers who participated in the promotion at the beginning is prominently higher than those participating at the end of the promotion. Additionally, the temporal distance ($\alpha=0.20$, $p<0.05$) positively impacts the total consumption, which supports H4a. And purchase-decision involvement ($\gamma=0.10$, $p<0.05$) is positively related to the consumer behavior in the “Double 11” promotion, supporting H5. However, the social distance is not significantly associated with total consumption ($\beta=0.04$, $p>0.05$), thus H4b is not supported.

5. DISCUSSION

The empirical results have rationally verified the theoretical model. On the one hand, based on the construal level theory we compared the different strategies invoked by psychological distance on purchasing of high or low involvement products, and found that when temporally or socially near from knowing the promotion issues, consumers prefer to purchase low involvement products (e.g., groceries), but high involvement products (e.g., digital products) in the distant future. However, hypothesis about the interactive relationship between social distance and purchase decision of high involvement product is not supported. The probable reason lies on that we ignore the decisive role of WOM (Word-of-Mouth) playing on consumers’ purchase behaviors. That is, compared with diffusing by advertising media, information exchange among acquaintances strengthens the effects of word of mouth specifically^{[15][16]}. Thus there emerges the unexpected phenomenon that consumers perceived socially near are more likely to make purchase decision. On the other hand, we introduce the intermediate variable—purchase-decision involvement to examine the effects of psychological distance on consumers’ purchase decision involvement and validate whether these two aspects would salient facilitate the consumer purchase behavior. As a result, the temporal distance is positively associated with consumers’ purchase-decision involvement, and then consumers’ total consumption is prominently impacted by these two

variables. Meanwhile, we find no significant relationship between social distances and purchase-decision involvement or total consumption, consistent with the sentiment of Clarke and Belk^[17]. The facilitation of social distances on consumers' purchase-decision involvement is finite, especially for high involvement products like digital products. Our study enriches the construal level theory and elucidates the underlying mechanisms behind time/social distance and consumer behaviors.

Our findings provide practical marketing implications to sales promotion. Firstly, While firm stakeholders plan to carry out online promoting activities, they should also take the consumer psychological factors into consideration to obtain better returns. Good matches of product class involvement and construal levels can efficiently promote consumers' purchase intentions. For the promotion of high involvement products like cars or digital products, marketers can recommend them to consumers well in advance, which will enhance the transmitting effects of online WOM. As for low involvement products like groceries or commodities, the strategy of online promotion can be focused on advertising campaigns. To allocate enterprise resources reasonably will be conducive to maximizing sales achievement. Secondly, since temporal distance is positively related to purchase-decision involvement, to broadcast promotion activities earlier will have a beneficial effect on the ultimate consumption. Purchase-decision involvement also provides new ideas for merchants to develop the online marketing activities. Customers with high levels of involvement in purchase decision making maybe have higher values than those with low levels of involvement.

This study still has several limitations. First, the prominent limitation is the selection of typical representations; we only select digital products as the high-involvement product type and groceries as the low-involvement product type. Although, the two types of products are typically objects, they are still just a small part of various merchandise categories. Thus, future research can take into account other categories of goods to improve the results. Second, we don't explore a salient dimension of psychological distance, spatial distance, because our data does not provide a clear deputy to spatial distance. Consider spatial distance plays an important role in affecting individuals' mental state and consumer behaviors, future research should explore possible measures of spatial distance and examine the mechanism of spatial distance worked in consumer purchase behavior.

ACKNOWLEDGEMENT

This paper was supported by the National Natural Science Foundation of China under Grant 71764006 and the MOE Project of Key Research Institute of Humanities and Social Science in Chinese Universities under Grant 14JJD870002.

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