



Effect of Edge Cues on Perceptual Advertising Marketing-- Based on SPSS Analysis

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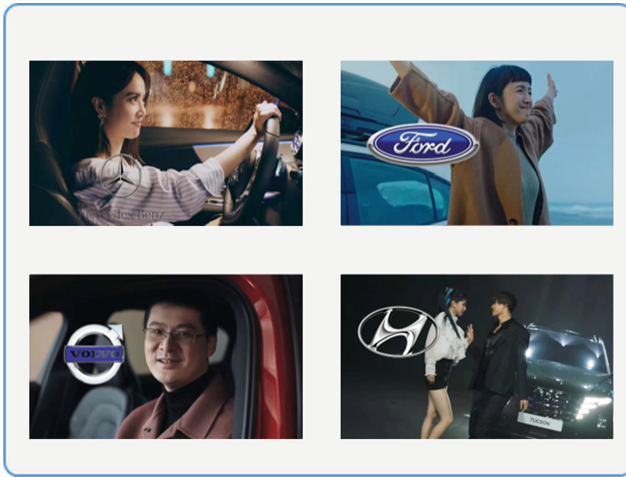
Abstract. With the development of mass media, the themes and forms of emotional advertising are increasingly enriched. Many advertisers want to expand publicity and enhance competitiveness. Advertising companies have launched a series of “flow war” and “topic war”, using the “star effect” of spokesmen to improve advertising revenue. To find the best design scheme for emotional advertisement, we start from several basic edge cues (quasi-social interaction involvement, immersion cues, disclosure cues) and use SPSS analysis to explore the effect of the above factors on the advertising effect. This study can provide some references for advertising designers and business marketing.

Keywords: Mathematical modeling · Advertising · Purchase intention · SPSS · Bartlett sphericity test

1 Introduction

With the development of social media, the attachment mode of audiences to their favourite TV characters or characters has changed from single-arrow “communication imagination” to two-way or multi-directional interaction. For example, to give the audience a more amiable and approachable image, Weibo celebrities started communicating and interacting with users based on human design [1]. The instant experience of bullet screen and reward in-network live broadcasts makes the virtual communication relationship more “realistic” [2]. The public discussion of issues and opinions on *Zhihu* and the exchange and following of online opinions also expand the fan culture and deepen the realistic shackling of quasi-social communication to the audience [3]. More audiences represented by the youth group begin to pursue virtual intimate social communication in the network scene based on various demands. This involvement in the online virtual relationship also presents opportunities to many emotional advertisers: In other words, by creating a more intimate new media environment, audiences’ emotional embedding is strengthened [4] to transform online “communication relationship” into offline purchase behaviour.

At present, the research on quasi-social engagement and purchase intention mainly focuses on two aspects: (1) The research focuses on the user level, investigating the influence of different user characteristics on their quasi-social engagement; (2) It focuses on the analysis of how to effectively model the psychological effect of advertising under



(a)



(b)

Fig. 1. High quasi-social involvement (a) and Low quasi-social involvement (b).

the specific conditions of quasi-social interaction involvement, to explore the influence mechanism of advertising on buying behaviour.

Domestic and foreign research on the influence of relevant audience characteristics on social interaction involvement mainly focuses on loneliness, self-identity, self-disclosure and other dimensions. In the specific advertising marketing context, the audience's characteristics are complex, and the research results cannot directly produce marketing strategies. In addition, the disclosure degree of advertising spokespersons and the immersion degree of advertising video design are essential factors affecting the advertising effect. We can't discuss the marketing effect of specific quasi-social engagement without analyzing these surrounding lines. Therefore, it is of great significance to

study the interaction effects of different levels of quasi-social interaction involvement, advertising atmosphere cues and spokesperson disclosure.

In this study, the selection of video materials required for the experiment is mainly considered from three aspects. First, there are significant differences in the three dimensions of quasi-social interaction involvement, disclosure and immersion. Second, the duration of the video presentation is similar; Third, within the same group, there was no significant difference in the types of products advertised. The final advertising materials are as Fig. 1:

2 Research Object and Method

2.1 Experiment Design

This study adopted a $2 \times 2 \times 2$ three-factor mixed randomized experimental design. The independent variables were advertising immersion, disclosure and quasi-social interaction involvement. Each independent variable had two levels, and the dependent variable was advertising effect/consumer purchase intention. Among them, the quasi-social involvement of advertisements was an inter-group variable corresponding to high and low involvement, respectively, and the intra-group variable was immersion and disclosure of advertisements. The subjects were randomly divided into two groups, with specific operations as shown in the Table 1.

2.2 Composition of the Subjects

All the subjects in this study were students from Zhejiang Gongshang University. Eighty-eight questionnaires were issued, and 80 were recovered with a recovery rate of 90.0%. There were 67 valid questionnaires, including 18 boys and 49 girls, with an average age of 21.4 years. The total number of subjects in the high involvement group was 34, including 6 boys and 28 girls. In the subjects, 20–25 years old accounted for the most, 70.96%. The total number of subjects in the low-involvement group was 33, including 11 boys and 22 girls, with the age of 20–25 accounting for 50% and the age of 18–20 accounting for 50%.

Table 1. Grouping of experimental subjects

Group	1	2
Involvement	High	Low
Video 1	High immersion -- high disclosure	High immersion -- high disclosure
Video 2	High immersion-low disclosure	High immersion-low disclosure
Video 3	Low immersion -- high disclosure	Low immersion -- high disclosure
Video 4	Low immersion -- low disclosure	Low immersion -- low disclosure

2.3 Materials for the Experiment

The experimental materials include three parts: the first part is the advertising video, the second part is the introductory language, and the third part is the subject item. (1) Advertising video materials are all from pre-experiment, and there is a high distinction between quasi-social interaction involvement, immersion and disclosure. (2) The introduction informs the subjects of the essential background of the experiment. To avoid the influence of irrelevant variables, in this experiment, the informed subjects assume that the advertising product is their favourite style and style, and the price is appropriate and acceptable. At the same time, they were using pictures and language to create a situation so that the subjects focus on the advertising experience of the experimental video. (3) There are four main items in the questionnaire design after watching the video. Referring to the research of Choi and Lee (2019), this paper uses four indicators to measure consumers’ purchase intention, and the specific measurement topics are shown in Table 2

2.4 Experimental Process

- (1) Grouping: The subjects were randomly divided into two groups (high and low involvement groups) and two different stapler groups. Each group is independent of the other. Before the experiment, we must explain the precautions to the subjects and understand the relevant information. The subjects were prompted to pay attention to the critical parts of the experimental materials.
- (2) Watch the video: within the two groups, respectively, in turn, play “high immersion - show”, “high immersion - low show”, “low high immersion - show”, “low immersion-show”, experimental video, video footage of two groups of social interaction between involved in different degree, play, with 2 min rest between each video (play soft music transfer notice).
- (3) Experimental questionnaires were issued: each group of experiments represented a situation. The inter-group variable was the degree of quasi-social involvement in the advertisement, and the intra-group variable was the degree of immersion and disclosure. After watching the video, the subjects were asked to answer the questionnaire questions about the effect according to the different situations they experienced, and the experimental materials were recycled and classified.

Table 2. Grouping of experimental subjects

Variable	Question number	Measurement of the question
Purchase intention	D1	After watching the video, I wanted to use the product featured in the AD
	D2	If necessary, I would like to buy the products advertised if conditions permit
	D3	The advertisement helped me in my decision to buy the product
	D4	Of the four categories, I am more likely to choose this brand

2.5 Data Analysis

SPSS was used to analyze the reliability and validity of the purchase intention scale of perceptual advertising products in the experimental materials. We used Cronbach’s alpha coefficient method for reliability and factor analysis for validity analysis [5].

Cronbach’s alpha can be composed as an element of the quantity of test things and the normal between relationships among the things. Beneath, for theoretical purposes, we demonstrate the equation for the institutionalized Cronbach’s alpha:

$$\alpha = \frac{N \cdot \bar{C}}{\bar{v} + (N - 1) \cdot \bar{C}} \tag{1}$$

Here N is equivalent to the quantity of things, c-bar is the normal between thing covariance among the things and v-bar breaks even with the normal difference.

In this paper, KMO value and Bartlett sphere were used to test whether the variables of purchase intention of perceptual advertising products in this experiment were suitable for factor analysis. Three-factor repeated measure anOVA, simple effect analysis and simple effect analysis were performed on the obtained data. The study’s degree of involvement in quasi-social interaction was an intergroup variable. In contrast, the degree of immersion and disclosure was an intra-group variable, and each variable had two levels.

3 Research Results and Analysis

3.1 Reliability and Validity Analysis of Consumers’ Purchase Intention Under Various Edge Cues

(1) Reliability analysis

We used SPSS analysis software [6] in this study to summarize the collected questionnaire data, and the results are shown in the Table 3. The analysis showed that the scale’s Cronbach’s α value was above 0.8, and the total correlation of all calibrated items (CITC) of each scale was above 0.8. This shows that most of the scales have high internal consistency and reliability [7].

(2) Validity analysis

In the scale validity analysis of purchase intention, the KMO value of the questionnaire was 0.844, more significant than 0.8, indicating high validity. In addition, the

Table 3. Analysis of dependability of dependent variables

Variable	Item	Mean Acale	Scale variance	Total Corrected Items	Cronbach’s Alpha Value [8]	Cronbach’s Alpha
Purchase intention	D1	8.8918	8.172	.808	.859	0.899
	D2	8.7836	7.983	.782	.868	
	D3	8.7388	8.456	.751	.879	
	D4	8.9254	7.964	.764	.875	

Table 4. Validity analysis of advertising immersion

KMO sampling suitability quantity		0.844
Bartlett sphericity test	Approximate chi-square	646.441
	Freedom degrees	6
	significance	0.000
Item	Initial value	Extract
D1	1.000	0.805
D2	1.000	0.776
D3	1.000	0.741
D4	1.000	0.754

proportion of common factors extracted was more significant than 0.7, which could explain the data of the questionnaire well. Since this scale is a single dimension scale, when extracting a single common factor, the proportion of the common factor explaining the comprehensive questionnaire data is 76.91%, indicating good questionnaire validity (Table 4).

3.2 Multivariate AnOVA of Consumers’ Purchase Intention Under Various Edge Cues

There were three independent variables in the experiment, one inter-subject variable (level of involvement) and two intra-subject variables (level of immersion + level of disclosure). To test whether each variable’s primary effect is significant and whether the interaction between variables is significant, $2 \times 2 \times 2$ repeated measure anOVA was used.

(1) Research on interaction within the subject

The results showed that: ①The main effect of immersion cues was significant ($F = 5.060, P = 0.028 < 0.05, \eta^2 = 0.72$), i.e., advertisements with high immersion cues and those with low immersion cues had a significant effect on college students’ purchase intention. After watching advertisements with high immersion cues, college students’ purchase intention was stronger. ② The main effect of disclosure cues was significant ($F = 55.798, P = 0.000 < 0.05, \eta^2 = 0.462$), that is, the advertisements with high disclosure cues and those with low disclosure cues had a significant influence on the purchase intention of college students. After watching the ads with high, revealing cues, college students tend to buy. ③ The interaction between immersion cues and disclosure cues was significant ($F = 16.424, P = 0.000 < 0.05, \eta^2 = 0.202$). ④There were significant interaction effects among immersion cues, disclosure cues and quasi-social engagement ($F = 11.325, P = 0.001 < 0.05, \eta^2 = 0.148$). The data running results in SPSS were as Table 5

(2) Research on the interaction between subjects

The results show that the main effect of quasi-social engagement is significant ($F = 4.809, P = 0.032 < 0.05, \eta^2 = 0.069$), that is, advertisements with high quasi-social

Table 5. In-subject effect test

	B	C	Class-III sum of squares	DOF	Mean square	F	Significance	Partial <i>Eta</i> square
B	Linear		.544	1	.544	5.060	.028	.072
B * A	Linear		.086	1	.086	.800	.374	.012
C		Linear	22.762	1	22.762	55.798	.000	.462
C * A		Linear	1.020	1	1.020	2.500	.119	.037
B * C	Linear	Linear	2.160	1	2.160	16.424	.000	.202
B * C * A	Linear	Linear	1.489	1	1.489	11.325	.001	.148

Table 6. Intersubjective effect test

	Class-III sum of squares	DOF	Mean square	F	Significance	Partial <i>Eta</i> square
Intercept	2892.289	1	2892.289	4395.843	.000	.985
A	3.164	1	3.164	4.809	.032	.069

engagement and those with low quasi-social engagement have a significant difference in purchasing intention of college students. After watching advertisements with high quasi-social engagement, college students tend to buy. The data running results in SPSS are as Table 6

4 Conclusion

This study incorporated “quasi-social interaction involvement” into the SPSS model for discussion. Taking edge path as the main object, we investigated the mechanism of the effects of different edge cues (quasi-social involvement, immersive atmosphere cues, and spokesperson disclosure) on the edge path effect. This method provides some guidance and suggestions for advertisers in advertising content design and spokesperson selection [9].

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