

Full Length Research Paper

Effects of product placement advertisements

Lee Puyi Wong

College of Communication, Fujian Normal University, China. E-mail: wong.puyi@yahoo.com

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This paper uses natural experiment to explore effects of product placement advertisements. Results shows (Experimental Film: A Sigh): Buick and Bank of China are different in terms of main effect of brand awareness. It is the same as in terms of consumer's value. In terms of interaction between two brands, results are different. This paper provides reasonable procedures to test effects and tells us what kind of consumer's value is effective for product placement advertisements.

Key words: Brand awareness, consumer's value, product placement advertisements, effects.

INTRODUCTION

With development of science and technology, advertisements are more easily avoidable by consumers. The emergence of digital TV catalyzes the trend of advertisements avoidability. In advertising industry, common understanding has been reached by many specialists that license marketing is gradually replaced by permeating marketing. Consumers have the right to choose advertisements. It is a challenge for marketers to adapt themselves to the changes of advertising environment. Product placement advertisements become a good choice to overcome defects of traditional advertising methods. But how to measure the effects of product placement advertisements becomes a new problem for marketers because it is surely far different from traditional measurements of advertising effects and is more difficult to control so many complex variables.

LITERATURE REVIEW

Many scholars are dedicated to the study of product placement advertisements. All previous researches almost involve the variable of consumer which shows the importance of it. Steinberg pointed out that some factors remarkably affect product placement advertisements (Steinberg, 2004), time span displaying product, foreground or background, the role played by a spokesman on whether the product was used or not, or if it was mentioned in the program or not; whether the product is coming up in the climax of the plot or not; reasons why

product placement advertisements should be used; images of sponsors of the product and so on. Steinberg's study focuses on communicator's concern; still, the last variable is connected with consumers because images are interpreted by consumers.

This is the same as Astous's study. Astous put experimental method in use to explore consumer reactions to product placement strategies in television sponsorship (Astous, 1999). Four variables are controlled: types of product placement advertisements (vague display and integration into the plot, clear display but vague integration into the plot, vague display but clear integration into the plot, clear display and integration into the plot); images of sponsors of the product (positive, negative or neutral); types of TV programs (entertainments, soap opera, news program). Some results are obtained as follows: 1) types of product placement advertisements exerts great influence on effects of product placement advertisements; 2) types of product placement advertisements interacts with types of TV programs; 3) product placement advertisements embedded in soap opera are lowly appraised, while those embedded in news programs are regarded as immorality.

Mei-ling Liu used questionnaire to investigate product's brand awareness, consumers' attitude toward the movie script, actor, product placement and life style (Mei-ling, 2003). Findings are as follows: 1) brand awareness has significant influence on advertising effects; when the brand awareness is high, the higher attitude toward the movie script will have higher recall rate; 2) when the

Table 1. Krugman's definition of effects.

Measures of communication effects		Measures of sales effects
Learning(cognitive)	Feeling(affective)	Doing (conative)
Awareness of product	Attitudes toward product	Inquiries about product
Comprehension of product	Beliefs about product	Product purchase

Source: Dunn et al. (1990).

brand has certain level of awareness, the higher attitude toward product placement will have significant influence on the recall rate, attitude and intention buying; 3) No matter how high or low the brand awareness may be, audiences attitude toward the actor will not have any influence on advertising effects; 4) people with different life style have different attitude toward product placement; people who watched more movies per month will have better advertising effects. In Mei-ling's study, all variables are related to consumers.

Gupta and Lord (1998) processed an experiment that compared the recalled effectiveness of common product-placement strategies with each other and with advertising. Prominent placements elicited higher recall than did advertisements, which, in turn, outperformed subtle placements. The explicit mention of a product in the audio script (without a visual depiction) led to better recall than a subtle visual placement (without audio reinforcement). However, the addition of a complementary audio message did not significantly enhance the recall of a product that already enjoyed prominent visual display. In this case, recall is concerned with consumers.

Therefore, consumer is a very important variable in this field of study. As Ehrenberg et al. (1997) mentioned, brand A which has higher degree of popularity than brand B is more dynamic in consumers' mind. So brand awareness is included here to be further discussed in this paper. In addition, scholars have already paid attention to the influence of culture on marketing, especially consumer's value (Lawson and Dairao, 2002). So consumer's value is also included here.

THEORETICAL FRAMEWORK

Brand awareness

Brand awareness refers to bilateral connecting strength between brand name and brand category (He-shui, 2004). It is different from brand popularity. The former includes two kinds of measurements: recognizing ability which measures one brand belonging to what kind of brand categories and the other, recalling ability which measures one brand category including what kind of brands, while the latter only differentiates the known from the unknown. According to the measurements of brand awareness, Aaker (1991) classified it into three levels: recognition rate, recalling rate, and the first nomination

rate. This paper designed six items with Likert scale.

Theory of Rokeach's value

Rokeach has developed one system of value. He declared five propositions as follows: 1) every one owns similar quantity of values; 2) everyone has similar value which differs from each other only as far as degree is concerned in spite of different environments for everyone; 3) culture, social system and personality are the prerequisites for value; 4) some values combine one system of value; 5) value can be manifested in the form of some phenomena which are considered meaningful by sociologists.

Based on the aforementioned propositions, Rokeach divided value into two kinds: instrumental value and ultimate value, which are designed by 36 items with Likert scale (Rokeach value scale, RVS). Rokeach regarded that value could become either a dependent variable or an independent variable. As a dependent variable, value is influenced by sex, age, intelligence, race, educational degree and so on. While as an independent variable, it can conversely influence life style, ideology, moral judgment and so on. In view of foregoing discussion, this paper brings consumer's value into study as an independent variable.

Advertising effects

Many models of advertising effects have been proposed before, such as ELM (Petty and Schomann, 1983), SIR (Mei-ling, 2003), AIDA (Jie, 2000), DAGMAR (Russell, 1961) LS (Lavidge and Steiner, 1961) and so on. After former studies of advertising effects, Krugman classified advertising effects into communication effects and sales effects (Barban et al., 1990). As far as product placement advertisements are concerned, this paper adopts Krugman's definition: cognitive level, affective level and conative level (Table 1), and designs nine items with Likert scale.

Research hypotheses

This paper focuses on the independent variables of both brand awareness and consumer's value and the

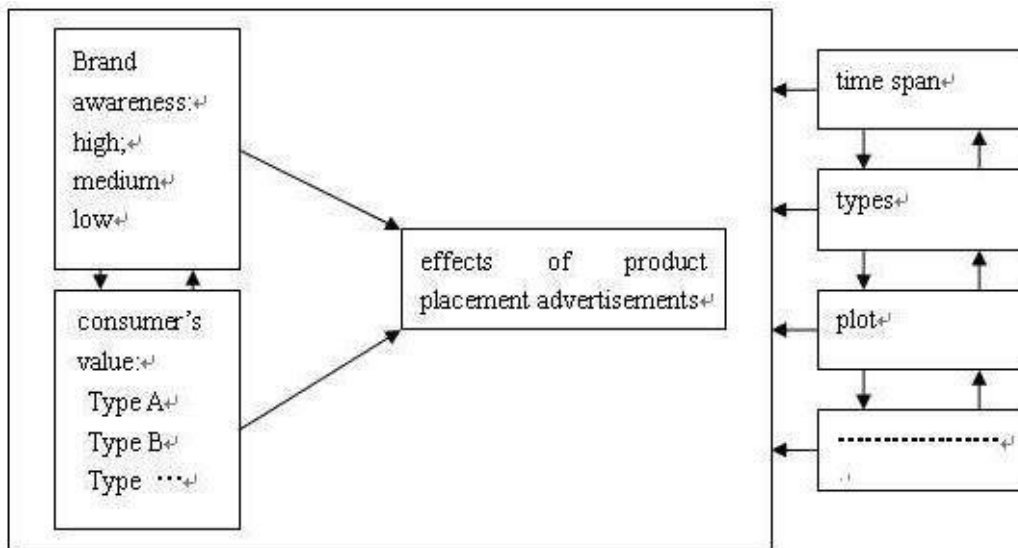


Figure 1. Independent variables and dependent variable.

dependent variable of advertising effects. Some other variables, such as time span of product placement, types of product placement, product coming up in the climax of the plot or not and so on, are considered to interpret the results of data complementary. Figure 1 shows relationships between variables. According to research goals, this paper proposes hypotheses as follows:

H₁: Different levels of brand awareness exert great influence on the effects of product placement advertisements.

H_{1a}: Different levels of brand awareness exert great influence on the cognitive level of product placement advertisements.

H_{1b}: Different levels of brand awareness exert great influence on the affective level of product placement advertisements.

H_{1c}: Different levels of brand awareness exert great influence on the conative level of product placement advertisements.

H₂: Different values exert great influence on the effects of product placement advertisements.

H_{2a}: Different values exert great influence on the cognitive level of product placement advertisements.

H_{2b}: Different values exert great influence on the affective level of product placement advertisements.

H_{2c}: Different values exert great influence on the conative level of product placement advertisements.

H₃: Interaction of brand awareness and consumer's value on the effects of product placement advertisements is significant.

H_{3a}: Interaction of brand awareness and consumer's value on the cognitive level of product placement advertisements is significant.

H_{3b}: Interaction of brand awareness and consumer's value on the affective level of product placement advertisements is significant.

H_{3c}: Interaction of brand awareness and consumer's value on the conative level of product placement advertisements is significant.

RESEARCH DESIGN

Research object

This paper selects the film "A Sigh" (China) as the research object. It is a film directed by Feng Xiaogang who is famous for product placement advertisements in his films. Extramarital affair is the theme of film director Feng Xiaogang's tragedy "A Sigh". Touching on one of the most sensitive topics in China today, the film has proved to be a tear-jerker, especially for married women audiences.

Some reasons are reached here to choose this film. First, it is a popular film which has gained many prizes in the 24th Cairo International Film Festival. So, undoubtedly, it is a successful film. Secondly, this film was screened in the year 2000, and a few young people were able to see it because it has a ten year time span. Finally, product placement advertisements are prevalent in this film which is convenient for research.

Methods

In previous related advertising researches, the most commonly used methods undoubtedly belong to control experiment which is applied widely in western countries. However, control experiment is not applicable in the research of product placement advertisements because effects of it could not be splitted into pieces. This paper seeks another way of study, namely; natural experiment or quasi-experiment, which explores effects of product placement advertisements more effectively.

A questionnaire or written survey is a simple, productive tool to

Table 2. Demographic characteristics of subjects.

Characteristic		Number	Proportion
Sex	Female	120	59.4
	Male	82	40.6
Age	15-20	11	5.4
	21-25	74	36.6
	26-30	68	33.7
	31-40	48	23.7
	Above 41	1	0.5
Educational degree	Junior college students	5	2.5
	Undergraduates	122	60.4
	Graduates	53	26.2
	Doctoral students	22	10.9
Disposal personal income (RMB yuan)	Below 2000	110	54.5
	2001-3000	55	27.2
	3001-5000	28	13.9
	5001-8000	8	3.9
	Above 8001	1	0.5
Vocation	Students	80	39.6
	Civil servants	6	3.0
	Institution staff	8	4.0
	Enterprise staff	74	36.6
	Liberal professionists	12	5.9
	Others	22	10.9

aid us in obtaining constructive feedback from both existing and potential respondents. We chose 202 subjects who come from Xiamen University and Sun Yat-sen University when we projected the film "A Sigh" in both two places. Before that, test-retest of the questionnaire was processed and items of correlation coefficient below 0.60 and factor loading below 0.50 were deleted. Some demographic characteristics of subjects are displayed in Table 2.

Factor analysis will be used in the following studies to extract dimensions of consumer's value. After that, cluster analysis will be applied to differentiate different kinds of consumers as far as value is concerned. 202 subjects are equally divided into two groups which are assigned to be tested respectively by items of brand awareness and consumer's value. Therefore, between subject design is processed in the following procedures. Finally, two-way ANOVA is wielded to test causality between independent variables and dependent variables.

RESULTS

Factor analysis

We test data to see whether it is proper for factor analysis. SPSS 12.0 is used here to process it as Table 3 shows. Kaiser pointed out that if KMO statistics is lower than 0.5, it is improper for factor analysis (Dong-sheng Wang, 2001). In this paper, KMO statistics is 0.760 which

displays that data can be applied for factor analysis. Result of Bartlett's sphericity test shows that it refuses original hypothesis and every variable is not independent.

Joseph et al. (1998) pointed out that if extraction eigenvalue is over 1 with factor loading over 0.4 and cumulative over 40%, result of factor analysis is significant (Joseph et al., 1998). Therefore, this paper selects those factors that satisfy the standards of Joseph et al. (1998) to be further denominated. Methods of principal components and varimax are used hereand results are showed in Table 4.

According to Joseph et al. (1998), if Cronbach α is more than 0.7, reliability of the data is high. In this paper, all eight factors meet the condition which shows that the above-attracted factors are reliable. Items of Rokeach Value Scale (RVS) are all included and variables are simplified.

Cluster analysis

The following procedure is processing ward hierarchical cluster analysis of the afore-mentioned eight factors. We conclude that samples had better be regrouped into three kinds as shown in Table 5. When three kinds of samples

Table 3. KMO and Bartlett's test.

KMO measure of sampling adequacy	Bartlett's Test of Sphericity		
	approx. Chi-Squared	df	Sig.
0.760	4138,940	630	0.000

Table 4. Results of factor analysis.

Factor	Item	Factor loading	% of variance	Cumulative %	Cronbach α
Freedom and happiness	Self-esteem	0.774	25.304	25.304	0.840
	Harmony of heart	0.732			
	Satisfaction	0.691			
	Maturity of love	0.626			
	Safety of family	0.608			
	Independence	0.574			
	Security of country	0.560			
Great talent and bold vision	Insistence on one's own beliefs	0.784	8.255	35.592	0.906
	Great imaginative powers	0.717			
	Achievements	0.669			
	Aggressiveness	0.656			
	Self-supporting	0.646			
	Effectiveness	0.632			
	Intelligence	0.630			
Broad-minded spirit	0.607				
Self-cultivation	Politeness	0.662	7.312	40.174	0.889
	Self-control	0.599			
	Rationality	0.575			
	Tender feelings	0.559			
	Modesty	0.545			
	Responsibility	0.540			
Honesty and kindness	Forgiveness	0.619	6.911	44.086	0.843
	Helpfulness	0.556			
	Authenticity	0.531			
	Friendship	0.429			
Neatness and joyfulness	Tidiness	0.580	5.174	49.260	0.787
	Delight and pleasure	0.461			
	Enjoyment of ease and comfort	0.411			
Harmony and equality	Peace	0.543	4.600	53.860	0.718
	Appreciation of the beautiful	0.525			
	Democracy	0.435			
Comfort and vigor	Richness and carefree minds	0.499	3.377	57.237	0.777
	Vivilization and positiveness	0.488			
Philanthropism	Social recognition	0.578	3.307	61.544	0.709
	Perception	0.565			
	Releasing others from sufferings	0.474			

Cronbach α =0.886,Cumulative %=73.734 as far as the whole questionnaire is concerned.

Table 5. Results of cluster analysis.

Stage	Case	Percent (%)
1	44	21.8
2	118	58.4
3	40	19.8
Total	202	100

Table 6. Results of one-way ANOVA.

Denomination	Correlation coefficient			F	p	LSD		
	1	2	3			1-2	1-3	2-3
Freedom and happiness	0.4085	-0.313	0.657	44.510	***	***	*	***
Great talent and bold vision	0.7101	-0.841	0.721	46.801	***	***		***
Self-cultivation	0.4470	-0.448	0.362	65.881	***	***	***	***
Honesty and kindness	0.1855	0.332	-0.712	72.749	***	***	***	***
Neatness and joyfulness	0.4393	-0.474	0.294	60.314	***	***		***
Harmony and equality	0.4999	0.527	0.010	97.936	***		***	***
Comfort and vigor	0.5766	-0.406	0.951	88.822	***	***	**	***
Philanthropism	0.6890	-0.616	0.104	48.952	***	***		***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 7. In comparison of correlation coefficients.

Denomination	1	2	3
Freedom and happiness	Medium	Low	High
Great talent and bold vision	Medium	Low	High
Self-cultivation	High	Low	Medium
Honesty and kindness	Medium	High	Low
Neatness and joyfulness	High	Low	Medium
Harmony and equality	Medium	High	Low
Comfort and vigor	Medium	Low	High
Philanthropism	High	Low	Medium

are reached, One-way ANOVA is carried out to test whether or not three groups are statistically significant in the dimension of the afore-mentioned eight factors. Table 6 shows detailed information.

In order to further simplify Table 6, we tell the degree of importance as far as the afore-mentioned eight factors are concerned in comparison of correlation coefficients. Table 7 shows detailed information. According to Table 7, we could found out characteristics of three groups, respectively. The most obvious characteristics of the first group are self-cultivation, neatness, joyfulness, and philanthropism. Correlation coefficients of other factors are medium. So we can find that this group of people may put emphasis on images, quality of life, and kind heartedness. We call this group as steady and benevolent group. The most obvious characteristics of

the second group are honesty and kindness; harmony and equality. Correlation coefficients of other factors are low. So, we can find that this group of people may put emphasis on internal feelings and casualness. We call this group a carefree and easy group.

The most obvious characteristics of the third group are freedom and happiness; great talent and bold vision; comfort and vigor. Correlation coefficients of honesty and kindness, harmony and equality are low. Others are medium. So we can find that this group of people may put emphasis on enterprise and work. We call this group an aggressive group.

Two-way ANOVA

Two-way ANOVA usually is applied for the procession of

Table 9. Test of hypotheses.

Hypotheses	Results	
	Buick	Bank of China
H ₁ : Different levels of brand awareness exert great influence on the effects of product placement advertisements.	Partial acceptance	Refusal
H _{1a} : Different levels of brand awareness exert great influence on the cognitive level of product placement advertisements.	Acceptance	Refusal
H _{1b} : Different levels of brand awareness exert great influence on the affective level of product placement advertisements.	Acceptance	Refusal
H _{1c} : Different levels of brand awareness exert great influence on the conative level of product placement advertisements.	Refusal	Refusal
H ₂ : Different values exert great influence on the effects of product placement advertisements.	Partial acceptance	Refusal
H _{2a} : Different values exert great influence on the cognitive level of product placement advertisements.	Acceptance	Refusal
H _{2b} : Different values exert great influence on the affective level of product placement advertisements.	Acceptance	Refusal
H _{2c} : Different values exert great influence on the conative level of product placement advertisements.	Refusal	Refusal
H ₃ : Interaction of brand awareness and consumer's value on the effects of product placement advertisements is significant.	Partial acceptance	Refusal
H _{3a} : Interaction of brand awareness and consumer's value on the cognitive level of product placement advertisements is significant.	Acceptance	Refusal
H _{3b} : Interaction of brand awareness and consumer's value on the affective level of product placement advertisements is significant.	Acceptance	Refusal
H _{3c} : Interaction of brand awareness and consumer's value on the conative level of product placement advertisements is significant.	Refusal	Refusal

ones.

In terms of interaction between two brands, results are different. In regard to Buick, interaction of brand awareness and consumer's value is significant which means that two variables are connected with each other as far as their effects on product placement advertisements are concerned. In regard to Bank of China, interaction of brand awareness and consumer's value is not significant which means that, two variables have nothing to do with each other as far as their effects on product placement advertisements are concerned.

Our findings add to some important managerial implications. First, this paper provides reasonable procedures to test effects of product placement advertisements in the dimension of brand awareness and consumer's value. Secondly, this paper tells us what kind of consumer's value is effective for product placement advertisements which is beneficial for enterprises to know their advertising targets. Finally, what level of effects is influenced by brand awareness and consumer's value are revealed so that enterprises could know whether their investment is worth or not.

LIMITATIONS AND FUTURE RESEARCH

It is on the stage of starting point related to studies of product placement advertisements in Chinese mainland.

There are some defects of this paper in spite of its contributions. First, subjects mostly come from students that could bring about limitation of popularity of results. Secondly, sampling number is not enough because of limitation of research funds. Number of over 500 is suggested. Thirdly, all subjects are volunteers, so, those who are interested in the film but unwilling to fill in questionnaires are excluded. Experimental error may exist. Finally, this paper only points out whether brand awareness and consumer's value influence effects of product placement advertisements or not. But what degree is not confirmed. Regression analysis could be applied to reach regression equation in order to reveal concrete weights of all factors in future.

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