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Investigation of the Effects of Print Advertisements on Consumer Memory

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Abstract: The main objective of this research is to investigate the effect of pictures and accompanying verbal information on print advertising. This research was conducted at Islamic Azad University, Qazvin branch-Iran, and the respondents were chosen from among the students of this university. Three hundred eighty five (385) Questionnaires were distributed by stratified random sampling method (proportional to volume) between students of different faculties and non-parametric inferential statistics (Paired sample Non-parametric Wilcoxon Test) was used to test the research hypothesis. The findings show that adding pictures to high imagery words will considerably increase the advertising recall. Also in aided recall, will not increase the recall of the advertising.

Key words: Advertising recall, aided recall, consumer memory, imagery, unaided recall

INTRODUCTION

Although enormous sums are spent on advertising, many obstacles may limit advertising's influence on brand decisions. Most importantly, there is typically a lag between consumers' exposure to advertising and their opportunity to purchase the advertised brand. Given this time delay, advertising effectiveness may depend critically upon consumers' memory performance at the point of purchase.

Research on ad processing has focused on how advertising content and imagery affect cognitive responses and attitude toward the ad (Aad), which in turn affect attitude toward the brand and purchase intention (Baht, 1998). Most memorability research is concerned with how well consumers recognize pictorial versus verbal stimuli or why one form of stimulus is better than the other in terms of recall (Edell and Staelin, 1983).

Because of the widespread use of pictures in advertising, understanding the effects of pictures on the learning of accompanying verbal information is considerably importance for marketers.

For print advertising to be effective, it is a sine qua non for the reader to recall the advertisement as well as the brand/product being advertised. Recall is defined in terms of a reader's capacity not only to remember the advertisement from among a set of advertisements but also to remember the brand name and attributes of the product shown in the advertisement (Mukherjee, 2002).

Starch (1966), using his now famous advertising effectiveness technique, found that when a print advertisement contained a picture, people were more likely to remember seeing it than when it did not (Edell and Staelin, 1983).

Pictures which accompany the verbal information positively (or negatively) impact on the effectiveness of a print advertisement. However, it does lead to an advertisement occupying more print space, and it is also more expensive to print pictures, particularly if they are in color. Given the rising expense of print media, a company must compare the costs with the gain that might accrue from the use of pictures (Mukherjee, 2002).

This article attempts to analyze the effectiveness of advertisements with differing characteristics (defined in terms of advertisement copy and presence/absence of pictures) from the perspectives of recall (unaided and aided recall) on a target consumer base.

LITERATURE REVIEW

The study is based on the dual coding theory proposed by Paivio (1971) which attempts to explain the importance of verbal and nonverbal processing.

According to the dual coding model, pictures are encoded as pictorial codes in memory and words are represented as verbal codes (Paivio, 1986). Therefore, the formation of two codes, verbal and pictorial, is more likely for pictures than it is for words. The ease of formation of dual codes for pictures in comparison with words results in the "picture superiority effect" (the superior memorability of pictures over words) (Rao and Burnkrant, 1991).

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On the other hand, when we are exposed to a verbal stimulus, the encoding is primarily in the form of verbal codes. It is not that words completely lack imagery value, but certain words are more likely to form images than other words. For example, 'fire' is more likely to evoke an image in one's mind than 'heat'; that is, words differ in their imagery value. It has been shown that high-imagery words are remembered more than low-imagery words due to the presence of both verbal and imaginary codes. The low-imagery words fail to create the visual images in the subjects' minds, as a result, they form only a verbal code in memory (Mukherjee, 2002).

When subjects are exposed to low imagery information, the addition of pictures exemplifying that information should increase the likelihood that dual codes will form, and as a result should increase subjects' ability to recall that information. However, if subjects are exposed to high imagery verbal information under semantic processing conditions, dual codes should form spontaneously as subjects attempt to grasp the meaning of the verbal information. Addition of pictures to this information should not increase the likelihood that dual codes will form, and as a result should not increase subjects' ability to recall this information (Rao and Burnkrant, 1991).

With regard to these issues and research support of the Mukherjee (2002) and Rao and Burnkrant (1991) we suggest the first hypothesis:

H_1: By adding pictures to verbal information with high imagery in advertising copy, will not increase the recall of the advertising.

One key goal of advertising is to have consumers remember or recall an ad. Several tests are designed to identify how well an ad was remembered. Unaided recall is a methodology in which subjects are asked to name, or recall, the advertisements they saw on television or heard on the radio the previous evening, without being given any prompts or memory jogs (Clow and Baack, 2005).

In evaluating an advertisement, aided recall is a testing method in which consumers are prompted with a product category and, if necessary, names of specific brands in that category. The subject does not know which brand or ad is being tested. When the consumer recalls seeing a specific brand being advertised, the person is then asked to provide as many details as possible about the ad. At that point, no further clues are given regarding the content of the ad. Recalling the advertisement increases the likelihood that the product will be purchased since the message and product have become part of the consumer's evoked set (Ibid, 8) (Fig. 1).

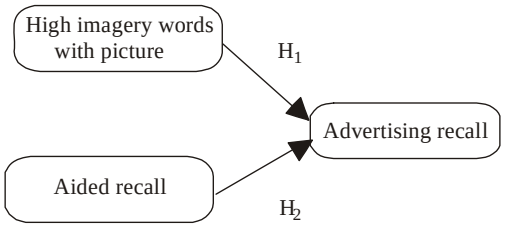

Fig.1: Research Model

With regard to these issues, we suggest the second hypothesis:

H_2: By Specifying the brand name in advertising copy, will increase the recall of the advertising.

METHODOLOGY

Design: Two independent variables were manipulated in a 1×2 factorial design. The first factor was the level of imagery (high) in a print ad for a product and the second independent variable was the presence or absence of picture. Impact of these two variables on recall (depended variable) was examined.

Tow advertising booklets were shown to the subjects. First booklet contained advertisements of 4 products (camera, toothpaste, shampoo and shoe) that the camera with brand name of Minox had 5 ads (each showing a feature of it including magnifying power, waterproof, anti-handshake, imaging of very fast movements and glimmer shooting) was the target product that has no images. Advertisements of three other products were filler advertisements. Each product included three ads showing three characteristics of it (totally 14 ads).

The filler ads featured products that ranged from inexpensive goods such as yogurt to expensive durable goods such as cars. The filler ads that followed the critical ad served to clear the subjects' short-term memories.

After reviewing the first booklet for 168 sec (to ensure that respondents devote equal time [12 sec] to watched each ad), respondents were given a questionnaire so that we could determine the degree of recall of each advertisement on them.

Then, the second booklet containing different advertisements of the same products were given to respondents. This time, the ads of camera had images along with related verbal information. Second questionnaire were given to respondent in order to re-estimate factor of recall.

Sampling method: Regarding previous studies, respondents of this survey were chosen from among the students of Qazvin Islamic Azad University using Stratified Random Sampling Method (commensurate with the size). Subjects were 385 students and research was conducted at September and October in 2011.

Table 1: Average of camera and minox's features recall time before and after adding pictures

Index	Before adding picture	After adding picture
Camera recall	1.81	2.54
Minox recal	l1.47	2.45

Questionnaire design: Due to the nature of the present study, questionnaires are applied in order to collect data. The questionnaire used was containing recall questionnaire (Mukherjee, 2002).

Recall was measured asking the question that each respondent can remember how many features (unaided recall with asking the question that each respondent can remember how many features of each product, and aided recall with asking the question that each respondent can remember how many features of each brand) and collected data were entered into SPSS software as a Likert-six-point scale. In this case, if they don't remember any feature, a value equal to 1 will be assigned to that, if they recall one feature, value 2, and if they remember two features, a value equal to 3, and so on.

In order to implement the questionnaires with utmost accuracy and to examine and evaluate the existing problems in the degree of validity and reliability of the questionnaire, one pretest was conducted.

In order to calculate reliability using the Cronbach's alpha coefficient, a pre-test was conducted on a sample containing 50 questionnaires, and Cronbach's alpha for recall variable before and after adding pictures was 0.727, and the alpha for both questionnaires was 0.783. We can say that the questionnaire had the required reliability.

To assurance of questionnaire validity, the questionnaire became applicable through back-to-back translation. Content validity was conducted by electing 10 assessors. The minimum amount of CVR based on Content validity table derived from Wikipedia website is 0.62 for 10 persons. The results were determined according to Lawshe formula that this eventually had led to confirmation of Content validity. In order to make sure about face validity, we distributed 8 questionnaires among respondents and took their opinion about obscurity of questionnaires into account and made necessary changes, and then the reformed questionnaires were redistributed.

Data analysis: In this study, we utilized nonparametric statistical methods (paired sample Wilcoxon test) to analyze collected data and also to test the research hypothesis.

To test first hypothesis, we took the average of product's features recall time (camera) before and after adding pictures which were 1.81 and 2.54, respectively (Table 1), and then normality test (Kolmogorov-Smirnov test (K-S test)) was conducted on this variable. Results revealed that the recall variable in both cases (before and after adding pictures to high imagery words) is not normal. Then, paired sample nonparametric Wilcoxon test was used to test and compare these two cases and findings confirmed that there is a significant difference between recall before and after adding pictures to the high imagery words and with respect to increase in average of recall variable after adding pictures, the first hypothesis was rejected.

The result of first hypothesis showed that Camera's features recall before adding pictures was 1.81 and Minox brand name's features recall was 1.47 and Camera's features recall after adding pictures was 2.54 and Minox brand name's features recall was 2.45. That it is reduction in recall after the specifying the brand name in advertising. As a result, second hypothesis was rejected.

FINDINGS AND DISCUSSION

Findings: Findings of this study showed that combining verbal information with high imagery with a related picture will lead to improvement in recall process comparing to the case in which only verbal information with high imagery can be seen by audience, that this contravene findings of Mukherjee (2002) and Rao and Burnkrant (1991). In fact pictures will expose audience to an additional thing that is more than mere information. For instance, when respondents are exposed to verbal and visual information that show camera works satisfactorily under low light condition or has magnifying power of 24x, actually encounters with two kinds of information, while people who only deal with to verbal information, will be exposed to one kind of information.

Findings of second hypothesis in Iran framework did not corresponding with findings of the other articles in the other country, That is, brand name did not served to more product's features recall, as a result, should be employed the other measures of aided recall.

Managerial implications: The research has significant managerial implications. Advertising agencies and marketing strategists can design campaigns with the optimal impact of pictures on the accompanying verbal information content in print advertisements. The research also throws light on the type of print advertisement that would work for different types of products with high involvement.

While preparing a message for consumers, marketers should consider the content of ads for products to have the most effect on costumer's feeling and transferred information from the memory will be more retrieval, and this also affect his/her behavior so that caused the goods to be purchased.

Findings of this study will have the way for marketers in order to improve design of ads and to increase sale of

their products and also helps designers of commercial printed ads on how to design their ads to be more effective.

LIMITATIONS

Future research opportunities revolve around some of the limitations of this study that are as follows:

In this study the attitude towards the advertisement, expressed in terms of the cognitive dimension (i.e. recall), leads to, that this is strongly correlated to the conative dimension (intention to buy) and hence purchase. However, the attitude-behavior correlation is not always strong.

Since the number of ads that were shown to respondents was high, we considered 12 sec for each ads to be seen. This is a limitation and if we can devote more time to watch the ads (use of 15 sec ads), more accurate results will be achieved.

Since the hypothesis were dealing with memory of respondents and respondents were students of a university, their memory is not available due to the different occupation such as studying, therefore all respondents did not concentrate on watching advertisements and then recalling them. And this will be considered as a limitation for current study. If we can test respondents in a more controlled situation, more accurate result will be achieved.

FUTURE STUDY

In future researches, the researchers can investigate effects of pictures on verbal information in print advertisements not only from the viewpoints of attitudes but also from the perspective of final behavior of consumers (that is purchase).

In this study, effect of high imagery words along with pictures on advertising recall were examined. Researchers in following studies can also investigate the effect of words with low imagery.

In this study, the target product was the camera which is a product with high involvement; however, in following studies, the researchers can make use of the products with low involvement and investigate the effects of verbal information along with pictures on both kinds of products.

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