Evaluating Advertising Effectiveness Through Advertising Response Modeling (ARM)

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Abstract

As important as evaluative copy testing measures like recall, idea communication and persuasion are for much advertising, questions exist about whether they assess the full communication value of a commercial or ad and how to interpret the sometimes conflicting information that these multiple measures yield. Presented here is a new modeling technique, Advertising Response Modeling (ARM), that integrates several measures in use today in a meaningful way, and through its application can lead to a better understanding of how the advertising performs. A pair of nonalcoholic beverage ad tests are used to demonstrate how ARM can add to the traditional copy test results and offer insight and a fuller understanding of the advertising process.

Evaluating Advertising Effectiveness Through Advertising Response Modeling (ARM)

It is well accepted today that in evaluating advertising effectiveness, multiple measures are required; no single measure is adequate. The recent ARF Validity study further endorsed the use of multiple measures (Haley and Baldinger, 1991). The inclusion of need for several measures in current copy research systems reflects the need to capture the various dimensions of persuasion. Consequently, researchers today are evaluating advertising performance on a variety of measures including memory-based intrusiveness levels of recall or recognition, brand rating, advertising liking, buying interest or intention, as well as diagnostics related to the advertised product or service and advertising execution. It is, however, not clear which of these measures are more appropriate under certain conditions, or even how they relate to each other. The even greater challenge is in interpreting the sometimes conflicting results.

Advertising Response Modeling (ARM) is an attempt to provide a framework to assess advertising performance by means of integrating several measures. Based on past research on how advertising works, a conceptual model is derived which lends itself to empirical applications in a variety of advertising situations to help fully understand the processing of the advertising in question. Its application allows going beyond mere descriptives and helps evaluate if the advertising being tested fulfills the marketing communications objectives set for it. Results of the modeling provide information for actionable decision making.

Although it is well recognized that an audience actively participates in the advertising process by going beyond the messages presented in the advertising itself and drawing conclusions about the brand, this inference process has received little attention in commercial copy testing. Understanding how the advertising was actually processed should help identify the strengths and weaknesses in the advertising. Application of ARM in copy testing is designed to do that.

Specifically, the objectives of the present paper are to:

(1) Present a conceptual model of ARM; and

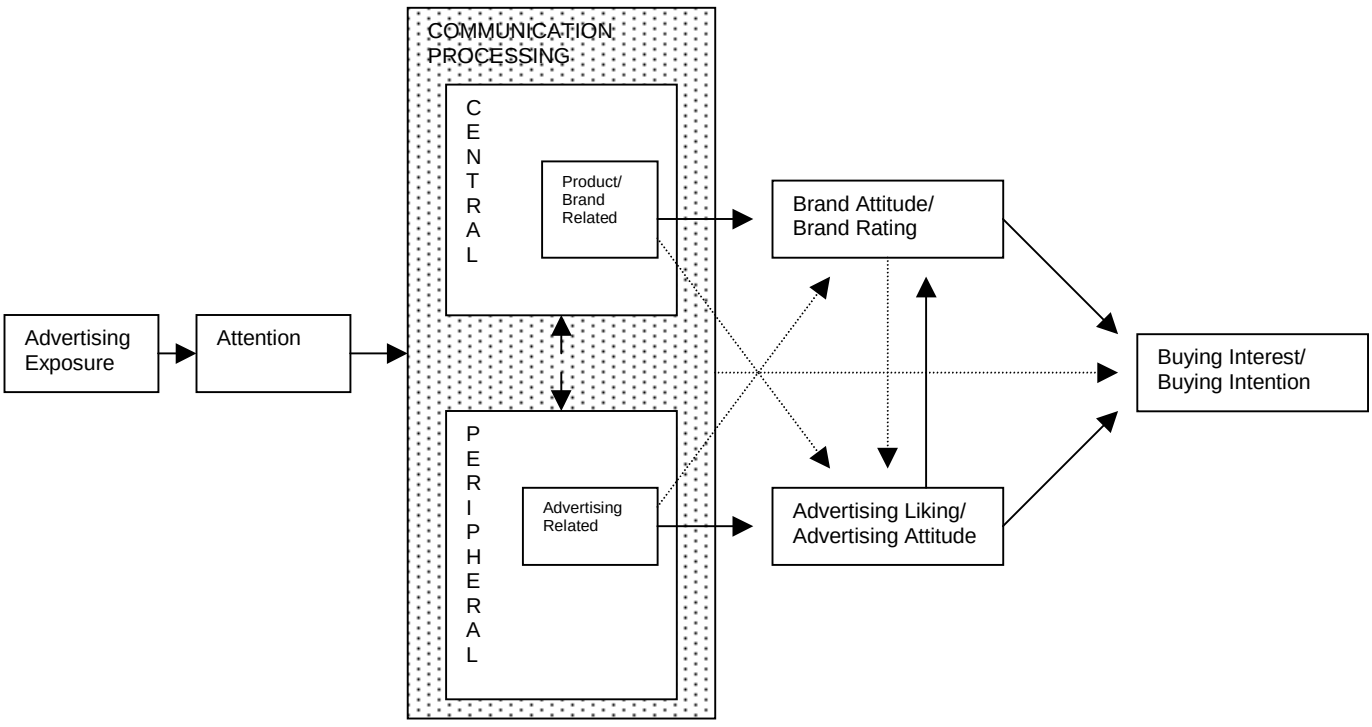
(2) Demonstrate through a case study how ARM adds insight gained towards a fuller understanding of the advertising process.

ARM: Conceptual Model

Researchers for the last five decades have attempted to understand how advertising works. From the early learning theories of persuasion (Hovland, Janis, and Kelly, 1953; McGuire, 1972) and the hierarchy of effects model, including Dagmar (Colley, 1961), to the more recent Elaboration Likelihood Model (ELM, Petty & Cacioppo, 1981, 1986), the extensive work on effects of ad attitudes on ad performance (Baker & Lutz, 1987; Batra & Ray, 1984; Mackenzie, Lutz, & Belch, 1986; Mackenzie & Lutz, 1989; Muehling, Stoltman, & Mishra, 1990; Muehling, Laczniak, & Stoltman, 1991), and the ARF Validity Study (Haley & Baldinger, 1991), various pieces of the advertising effectiveness puzzle have been addressed. Based on these advances, and G&R's own empirical research, the Advertising Response Model (ARM) has been delineated (See Mehta, 1994).

As Figure 1 shows, and consistent with past research, an ad must first break through the clutter and gain attention. If the advertising captures attention, processing occurs along one or both routes: central and peripheral (Petty and Cacioppo, 1981, 1986). During central processing, the focus is on product and/or brand-related information, while ad/commercial-related issues are more dominant during peripheral processing.

Figure 1
Advertising Response Model (ARM) - Conceptual Model



The processing route is expected to be influenced by involvement levels. Under high involvement, respondents process information via a central route by elaborating on the brand-related information. Peripheral processing occurs under low involvement conditions, and subjects typically rely on the available peripheral cues such as music, source or spokespersons, etc.

Processing that occurs along the central route leads directly to brand attitude which, in turn, influences buying interest or buying intention. Peripheral cues may also influence brand attitudes as well. Attitudes formed or changed as a result of central processing tend to be more permanent and resistant to change.

Peripheral processing leads directly to ad attitude/ad liking which, in turn, may influence brand attitude and buying interest. Ad attitude may also be influenced by message-related issues as well (Greene, 1992). Attitudes formed or changed as a result of peripheral processing are apt to be more temporary in nature and may be lost as the peripheral cues influencing the attitudes cease to be present. It may be thus necessary to have repeated exposure of the same or similar advertising to reinforce the relationship between the peripheral cue and the brand in question.

Additionally, there is evidence suggesting that in cases of familiar, established brands, brand attitude may influence ad attitude (Mackenzie, Lutz, and Belch, 1986). However, Muehling, Stoltman, and Mishra (1990) found this relationship to exist for new, unfamiliar brands for low involvement subjects as well.

Particular advertising executional styles may also influence the processing route that will be taken. For example, highly informational ads may promote central processing while affective ads may encourage the use of peripheral cues.

The distinction between central and peripheral route processing is useful when evaluating advertising performance and identifying the strengths and weaknesses in the advertising. By operationalizing central route factors as those related to the product/brand and message-related issues, and executional features as peripheral cues, it is possible to evaluate to what extent each works towards facilitating the advertising performance. Also, although in most cases simultaneous processing of the two routes occur, one is usually dominant and establishing the dominant route should be helpful since the consequences of each route are different.

Within this general conceptual model of ARM, adaptations are made for application to any particular testing situation. The choice of dependent variables, as well as the operationalizations of these variables are customized appropriately. For example, instead of buying interest or buying intention, intention to visit dealer was a more appropriate final dependent variable when studying automobile commercials. The communication

processing variables, that is, the product-related and ad-related variables are also changed from situation to situation as necessary, and to measure these, we have variously used thought listings, scaled rating measures as well as checklists. ARM offers this flexibility and works well in most situations. We have found that ARM adapts equally when studying TV commercials or print ads.

ARM: Applications

Application of the ARM to traditional copy testing results has yielded insight in fully understanding the advertising processes. It has helped identify whether what was intended by the advertising was actually achieved and if the variables that were expected to be important in driving the advertising really are influencing the dependent measures of interest.

The following case study for two print beverage ads illustrates how ARM has been used in advertising effectiveness tests.

Case Study: Background & Objectives

Two ads for the same leading brand of a nonalcoholic beverage were studied. Each ad introduced a new flavor for the brand, but differed significantly in content and execution. "Ad A" presented four different varieties of the sugar-free, low calorie flavors by showing the various packages. It was basically an informational ad with the headline emphasizing the varieties and choices available. In "Ad B," the style was transformational; while the product was clearly shown in the ad by means of the package, an emotional and romantic atmosphere was created by suggestion of a couple and the headline supported the romantic feelings.

Method

Sample

Regular readers of general interest magazines in 10 geographically dispersed U.S. markets were recruited to participate in, ostentatiously, a study of magazine readership habits. A total of 280 women participated in the study. Subjects saw only one of the two test ads.

Procedure

The two ads were tested in a contextual-based system: in-magazine, in-market, at-home. The test magazines were placed at the home of the participant with the instructions to read the magazine that day as they naturally would read any magazine. A phone interview was scheduled for the following day. One of the test ads (Ad B) naturally appeared in the test issue. "Ad A" was tipped into another issue of the same magazine title that did not contain "Ad B."

Interviewers called participants the day after exposure as scheduled and, after assuring magazine readership, administered advertising-related measures for the two test ads. After obtaining recall and idea communication measures, respondents (recallers and nonrecallers) were re-exposed to the test ad and additional questions were administered to gauge reactions to the ad and attitudes towards the brand.

Measures

Recall was measured on a brand-aided basis. Idea communication is the playback of copy ideas obtained from recallers about the ad. Other major measures include buying interest, ad liking (5-point scale each), and brand rating (6-point scale). Diagnostics about the advertising in terms of ad statements and adjectives were measured on a "Yes/No" basis. Other special questions included asking about product attributes of the brand in the ads on a "Yes/No" basis as well. These special questions and response scales were selected for the descriptive value they held for the client and were not anticipated to be used for modeling.

Results

Descriptive Measures

As shown in Table 1, "Ad A," the informational ad is the stronger of the two ads when Recall and Idea Communication were the primary measures used to assess the advertising. "Ad A" was a more intrusive ad that more clearly communicated its sales messages of flavors and low calories/sugar free. "Ad B," the transformational ad, is weaker than "Ad A" on memorability and communicated its ideas of flavors, taste, and making everyday experiences special at lower or generally low levels. It is interesting to note that although "Ad B" attempted to create a relaxing and romantic atmosphere, this idea was not verbalized or played back by any respondent.

Table 1

Summary of Results for nonalcoholic Beverage Ads

Measures	Ad A %	Ad B %
Recall	26	20*
Ad Liking	64	73
Brand Rating	53	55
Buying Interest	48	59
Idea Communication (recallers only)		
Refer to flavors	75	67
Low in calories	67	NA*
Sugar free	67	NA*
New	31	27
Taste/appetite appeal	14	47*
Ad Statements (yes/no)		
One of the best	46	53
Enjoyed reading	70	73
Like any other ad	49	38
Entertaining	41	58*
Main idea importance	46	27*
Makes me want to try	54	64
Product Attributes (yes/no)		
For people like you	59	49
Rich taste	64	67
Good value	56	53
Everyday experiences special	45	33
Good to relax to	72	67
A treat	66	76
Perfect for everyday use	47	36
(Base: Recallers/Re-Exposure)	(101)	(45)

Note: Scaled measure reported top two boxes; "Yes/No" items reported as the percentage saying "Yes."
*p<.10.

In terms of the other major measures, there were no significant differences, although scores for ad liking and buying interest favor "Ad B" directionally. In terms of ad reactions, "Ad B" was considered more entertaining and "Ad A" was perceived as communicating a more important main idea. The two ads perform similarly on all other variables related to advertising reactions and product attributes and attitudes towards the brand. Further, although "Ad B" tried to portray the image of a "relaxing" product more than "Ad A" did, results for variables related to "treat" and "good to relax to" are at similar levels for both ads.

What do these findings say? It is clear that "Ad A" was a more intrusive ad and it communicated its sales messages of flavors and low calories/sugar free more successfully. It is not surprising that the more direct/informational "Ad A" is better remembered than the subtler/softer "Ad B." News and information have historically been shown to be important drivers of recall.

"Ad B" was a transformational ad and the objective for the ad therefore is to influence through affect rather than information. Affective measures do favor "Ad B" which cues one to think there is strength in the ad. The question is, What? Can more analysis about how people react to and think about the "Ad B" identify this possible strength?

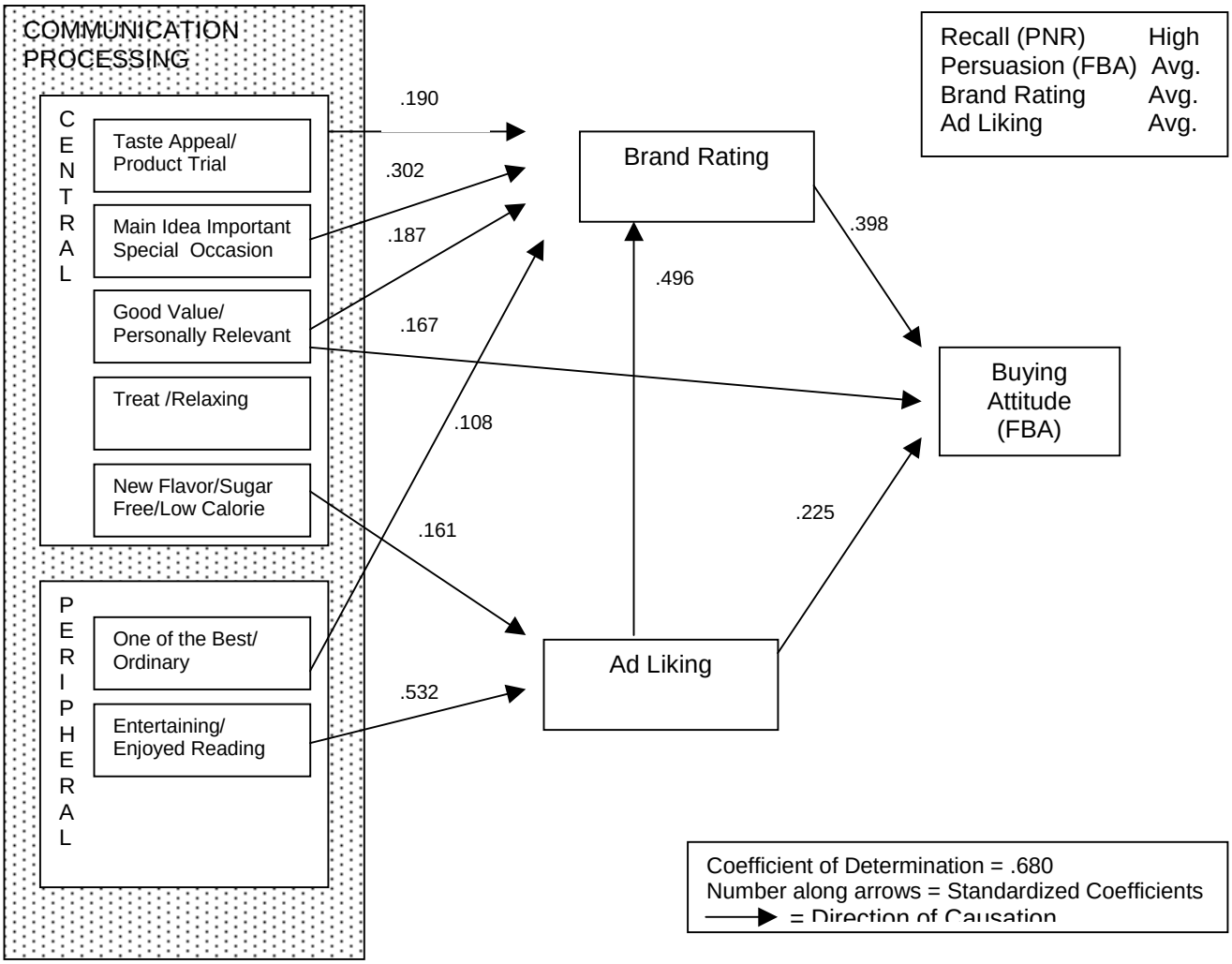
Advertising Response Modeling (ARM)

Application of ARM helped reveal the strength in the ad and look beyond the descriptive data. It helped gain new insights about how the ads were working and examine the relationships that exist within the pattern of responses. The results of the modeling showed that processing of the two ads were quite different.

Diagnostic measures used in the study were factor analyzed for use in ARM. Pairwise deletion techniques were used to maintain sample size since there was some nonresponse for several of the diagnostic measures. Results of the modeling through LISREL VII (Joreskog and Sorbom, 1990) are presented in Figures 2 and 3 for ads A and B respectively.

“Ad A” ARM Results. In "Ad A," reaction was driven by taste appeal, and by how important the idea of new flavor/sugar free/low calories was to the respondent as well as the perception that this product was for a special occasion, and buying interest was more strongly influenced by brand rating than by ad liking.

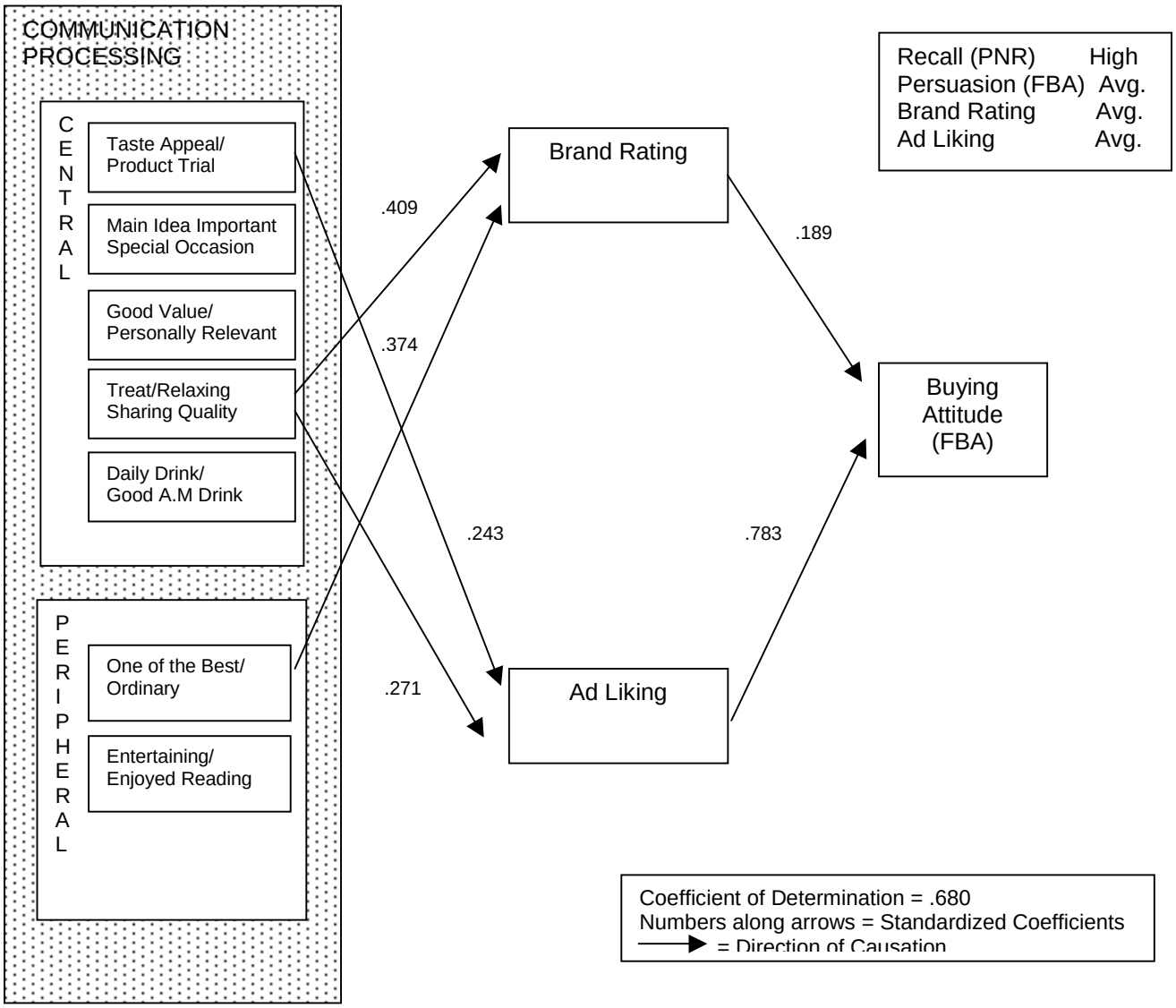
Figure 2
Advertising Response Model (ARM)
Nonalcoholic Beverage - “Ad A”



“Ad A" was an informational ad, and it appears that this information provided in the ads was not only received by the respondent, but it also had an influence in driving the brand rating and, finally, the buying interest. This further establishes that the ad is strong and was processed in a way which was appropriate for the marketing communications objectives set for it.

“Ad B” ARM Results: In "Ad B," taste appeal was again important, but reaction was strongly driven by whether the product was perceived as being a treat/relaxing/sharing/quality. Further, buying interest was much more influenced by whether they liked the ad than its effect on brand rating.

Figure 3
Advertising Response Model (ARM)
Nonalcoholic Beverage - “Ad B”



"Ad B" was transformational and this aspect of a "relaxing" product was important in influencing persuasion, ad liking and buying interest, particularly. It is interesting to note that although the idea of treat/relaxing/sharing/quality is virtually unmentioned in open-ended questions of idea communication and shows up in the diagnostics at levels that are descriptively the same as in the other ad, it is the single most significant influence of brand rating and ad liking in this ad.

From a marketing communications objectives point of view, "Ad B" works and was processed in an appropriate manner. Being an affective ad, recall scores were lower than for an informational ad. However, the message in the ad comes through. ARM clearly

shows the strength in the ad and cautions that the ad should not be dismissed on the basis of lower recall.

ARM results reveal that both the tested ads work well, although each quite differently. Decisions regarding their use should be made in view of the larger marketing objectives keeping in mind the strengths of each ad.

New Considerations. Further, ARM offers 3 new considerations in this context beyond helping understand how the ads perform. First, it provides empirical evidence that ad liking can drive persuasion, specifically buying interest, in this product category, directly or indirectly through its influence on brand rating. Second, it demonstrates that copy points need not be verbalized at strong levels to have a significant influence on persuasion. As mentioned earlier, the idea of treat/relaxing/sharing/quality was not mentioned in the open-ended questions, it is a strong influencing variable of brand rating and ad liking. Finally, it emphasizes the importance of re-examining measurement issues. In this case, it highlights a non-response problem with the "Yes/No" questions which suggests use of scaled measures in future tests.

Limitations and Future Applications

We have found that ARM has offered insights like these indifferent advertising situations, both TV and print. Nevertheless, we do need to be cautious as we interpret ARM results. It is important that the appropriate variables be selected for each testing situation, and the operationalizations are meaningful and useful. Diagnostic measures used in this study were largely on a "Yes/No" basis. More discriminating scales would yield better models. There was also some level of nonresponse in the data set which future studies should try to eliminate. Alternatively, sample size may be increased.

Further, although response to most advertising is at moderate to low involvement levels, we need to be concerned about how involvement rather than the advertising strategy and execution are influencing the results.

Conclusions

Nevertheless, it has been shown here that ARM application in advertising effectiveness testing:

. Leads to a better understanding of how the advertising is processed;

. Uncovers insights about advertising performance that can only be speculated upon within the confines of traditional descriptive data analysis; and

. Evaluates if the advertising processing is appropriate in view of the marketing communications objectives set for it.

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