Increasing Quality in Measuring Advertising Effectiveness: A Meta-Analysis of Question Framing in Conversion Studies

We describe a meta-analysis of advertising conversion research findings that includes examining the influence of question framing on key output measures of advertising effectiveness. The article summarizes findings for 32 tourism-advertising studies. Two hypotheses are tested: (H₁) the response rate to questionnaires mailed to sampled advertisement inquirers is lower when the brand sponsoring the study is identified versus not identified; and (H₂) the estimated buyer/inquirer conversion rate is higher when the brand sponsoring the study is identified versus not identified. The findings support H₁ and strongly support H₂. Conclusion: framing a study and questions to persons sampled by referencing these persons' prior known requests for information about a given brand is likely to reduce interest in responding among nonbuyers of the stated brand and bloat estimates of inquiry-to-purchase conversions for the brand. To confirm and estimate the size of such distortions, we recommend designing-in context manipulations in planning surveys to measure the effectiveness of inquiry-generating advertisements.

Taking steps to increase quality in measuring advertising effectiveness may include adopting seemingly small changes in designing survey questions and framing issues when writing or talking to samples of consumers exposed previously to advertising. By way of a meta-analysis, the present study compares consumers' responses to alternative sets of questions: when studies identify the specific brand sponsoring the study versus when studies identify independent third parties (e.g., universities or research firms) to respondents.

The findings confirm the hypotheses that average response rate increase and average usage declines for the brand sponsoring the research for studies that identify a third party versus the sponsoring brand as the source of the research. Making reference in cover letters or by telephone to the fact that the consumers sampled for the study are known to have requested information previously about the brand may be the standard practice—the dominant logic—in most advertising conversion studies. Such a practice is a likely cause of self-generated validity (Feldman and Lynch, 1988), that is, respondents’ working memory awareness of their own prior behavior and answers to previously asked questions affecting how they answer the current question before them. Thus, expect advertising effectiveness findings not to look as good after removing the bias of identifying one brand as the sponsor of the brand’s advertising conversion study.

A valuable by-product of third-party framing advertising conversion studies is that the breadth of the data collected broadens—to ensure that the sponsor remains anonymous—such studies ask questions about advertising response and product use for several versus one brand. While the details of the studies that the current meta-analysis describes come from one industry, destination marketing, the implications apply for many advertisers Interested
in learning how consumers respond to their advertising—as well as the advertising of competing brands.

META-ANALYSIS

Meta-analysis is quantitatively cumulating knowledge across studies by aggregating quantitative outcome measures and correcting errors and biases in research findings. Meta-analyses for the sake of cumulating knowledge is fundamental for the development of science because meta-analyses procedures serve to overcome research artifacts that occur in all individual empirical studies—artifacts that thwart efforts to draw correct theoretical inferences (see Hamilton and Hunter, 1998). Simple meta-analysis methods include calculating unweighted or weighted averages of measures of effect sizes, for example, correlation coefficients between levels of independent and dependent variables (see Glass, 1976). Sophisticated meta-analysis methods include using psychometric theory to correct outcome measures for the effects of sampling error, random error of measurement, range restriction, and other study imperfections (see Hunter and Schmidt, 1990).

In this article we report the results of a meta-analysis of question framing in published reports on the impact of advertising on customer purchases. Our study includes testing the hypothesis that identifying the specific brand sponsoring the study in surveys of customer inquirers (the prevailing practice in tourism-advertising conversion studies) serves to bias the estimated impact of the brand’s advertising. The results support the hypothesis. We suggest research procedures to use to reduce sponsor-identification bias, or alternatively, to measure such bias in future advertising conversion studies. Note that in this case, the “file drawer problem” of not including unpublished studies that support the null hypothesis of no treatment versus control-group effect (see Hunter and Schmidt, 1990) does not occur. Since the phenomenon under study is not a zero-one result (presence or absence of the phenomenon) but instead is simply reporting a proportion, there is no reason to suggest that a publication bias exists that would contradict our findings.

SELF-GENERATED VALIDITY IN MEASURING BELIEF, ATTITUDE, AND BEHAVIOR

Self-generated validity includes acts of measurement that changes the phenomenon under study—measurement steps that produce thought and behavior reports by respondents that are predicted by the theory being tested (see Feldman and Lynch, 1988). Question context is one category of self-generated validation. Question context includes the influence on respondents’ answers of what the respondents perceive to be the epistemic interests of the researcher.

A relevant source of information in this regard is the researcher’s affiliation. For example, Norenzayan and Schwarz (1999) presented respondents with newspaper accounts of mass murders and asked them to explain why the mass murder occurred. In one condition, the questionnaire was printed on the letterhead of an alleged “Institute for Personality Research,” whereas in the other condition it was printed on the letterhead of an “Institute for Social Research.”

As expected, respondents’ explanations showed more attention to personality variables or to social-contextual variables, depending on whether they thought the researchers was a personality psychologist or a social scientist. Apparently, they took the researcher’s affiliation into account in determining the kind of information that would be most informative, given the researcher’s likely epistemic interest (Schwartz, 1999).

Given that all questions are asked within some contextual bounds, the “problem” is not the context dependency of human judgment but rather the researchers’ hopes that this context dependency may—miraculously—not apply to their own study.

Unfortunately, this hope is unwarranted, and any given result may lead us astray when we do not take its contextual nature into account. To be alerted to contextual influences, researchers are well advised to include context manipulations in the design of their studies, a piece of advice that is more often offered than heeded (Schwarz, 1999).

ADVERTISING CONVERSION STUDIES

The objective central to advertising conversion studies is estimating the share of inquirers requesting free information offered in advertisements who “convert” into buyers. Thus, conversion share equals advertising inquirers buying the brand divided by total advertising inquirers. The implicit, and sometimes explicit, assumption is that some share of persons requesting and receiving information about a brand are influenced by attending to the information to buy the brand. Figure 1 describes the several steps and linkages among advertising exposure-to-inquiring-to-buying the brand advertised. Figure 1 also includes the broad steps taken in an advertising conversion study.

The central concern with advertising conversion studies is whether or not they measure advertising’s influence on sales that occurred due to being exposed to the advertising. Because advertising conversion studies are not controlled experiments (e.g., split-run tests, see Caples,
1974), they fail to measure the impact of advertising on changing sales (Woodside, 1990). However, even though Woodside (1990) and others (e.g., Burke and Gibling, 1990) describe severe limitations to such studies, advertising conversion studies are the main method used in most government tourism-advertising evaluations to assess the impact of advertising on visitors’ behaviors (Woodside and Sakai, 2003).

Sponsor identification

With the exception of published reports on two sets of tourism-advertising conversion studies (Woodside and Ronkainen, 1982; Woodside and Soni, 1990), all other published reports of tourism-advertising conversion studies include the research procedure of identifying the brand (i.e., specific tourism destination) sponsoring the study in the questionnaire and cover letter sent to samples of customer inquirers in the studies.

Using a survey method that prompts each subject in the sampled households to remember (or to think that she or he remembers—requesting free literature offered in advertisements for a brand, i.e., a state travel destination advertising) is likely to strongly bias these subjects’ attitudes and behaviors toward the survey. Also, the opportunity is lost to examine whether or not sampled inquirers are able to retrieve that they had made such requests. In 1991 Woodside and Soni noted that a substantial share of inquirers may not attend to the free information they requested—these customers may have lost interest in the brand or have more pressing concerns compared to thinking about buying the brand—and many fail to remember requesting the information sent to them.

The ability to recall requesting free literature is likely to be a function of the effort and intrusiveness of making such requests: the greater the effort and intrusiveness, the more likely the ability to later report having made such requests. Assuming that using a reader-service card (“bingo card”) is less effortful and intrusiveness than mailing a coupon appearing in an advertisement to make an inquiry or telephoning, the share of reader-service inquirers reporting inquiries may be expected to be much lower than the shares of mail and telephone inquirers.

In conversion studies where the brand sponsoring the study was not mentioned to the sampled inquirers, Woodside and Soni (1991) test and confirm the hypothesis that inquirers using reader-service cards in magazines to request free information offered in advertisements are particularly prone not to report having made.
such requests: 68 percent of such inquirers sampled did not report asking for information they were known to have requested! A total of 21 percent of inquirers using coupons-in-ads to request the free information did not report asking for it; 12 percent of the inquirers using toll-free telephone numbers appearing in the advertisements did not report asking for the free information they had requested.

HYPOTHESES
Framing advertising-conversion survey questions by reminding inquirers in the sample that they had requested free information offered in a given brand’s advertisements is likely to bias the respondents’ perceptions and knowledge that they had made such requests, attended to, and acted upon the information provided. Identifying the brand sponsoring the study may lessen interest in responding to the questionnaire among inquirers who did not buy the brand subsequent to requesting the advertised free literature; they may reason, “the survey does not relate to me because I did not buy the brand.”

Consequently, the response rate to questionnaires mailed to sampled inquirers is hypothesized to be lower (H1) and the estimated conversion rate is hypothesized to be higher (H2) when the brand sponsoring the study is identified versus not identified—the persons responding to the survey are most likely to be customers who converted to buyers of the focal brand in the questionnaire. Figure 2 summarizes the two hypotheses.

Two published studies (Hunt and Dalton, 1983; Woodside and Ronkainen, 1984) confirm that nonrespondents to surveys have lower conversion levels than respondents. For example, in a tourism-marketing conversion study reported by Hunt and Dalton, the conversion rate of 33 percent estimated from the responses to a mail survey was substantially higher than the 23 percent conversion rate among persons interviewed in a follow-up telephone survey of the nonrespondents to the mail survey.

RESEARCH METHOD
Data for this meta-analysis comes from 32 published findings on tourism-advertising conversion studies. These published findings come from articles published in the Journal of Travel Research, the Journal of Marketing, the Journal of Advertising Research, and other sources. (The specific sources used are indicated in the references with an asterisk.) Summary descriptions of a few of the 32 studies are provided below. This meta-analysis is restricted to examining the findings from studies using mail survey procedures. One limitation to the present report is that only advertising conversion studies in the travel industry that do not identify the sponsors’ identities are available from one author (Woodside) working with several different colleagues. However, the present also includes several studies by Woodside, colleagues, and others that do identify the sponsors’ identities. The present study includes no attempt to limit the findings to favor specific hypotheses.

The data include the first tourism-advertising conversion study published
in the *Journal of Travel Research* (Woodside and Reid, 1974). In this study, Woodside and Reid (1974) did not include a separate cover letter; the survey was a postcard; they did identify the brand sponsoring the study (the state of South Carolina); and they informed the sampled inquirers that the inquirers had made a request for the free literature offered in South Carolina tourism advertisements. Woodside and Reid (1974) report a 28 percent response rate and visitor/inquiry conversion rate of 53 percent.

In 1981 Woodside and Motes report incorporating several steps to increase the response rate in several tourism-advertising conversion studies for the state of South Carolina. These steps included the use of a second and a third mailing to nonrespondents to the first survey mailing and included a hand-signed cover letter to each person receiving the survey. The response rates were dramatically higher for Woodside and Motes (1981) compared to Woodside and Reid (1974): the response rates ranged from 62 to 65 percent in the second set of studies, and the conversion rates ranged from 47 to 58 percent.

For another U.S. state, Woodside and Ronkainen (1982) took additional steps in attempting to increase the quality of the resulting output measures. Along with the use of a second and third mailing to nonrespondents, research by Woodside and Ronkainen (1982) provided the first published report of conversion findings from studies that did not identify to respondents that they were known to have requested free travel literature offered in advertisements by a specific destination—the state sponsoring the conversion study. Each cover letter was individually addressed to the sampled inquirers; the cover letter explained the purpose of the study to be a university study of leisure travel to seven states. Detailed questions were asked in the questionnaire about travel to seven, not just one, state. The final response rates for the study ranged from 74 to 80 percent; the conversion rates ranged from 43 to 61 percent.¹

**FINDINGS**

Figure 3 summarizes the findings of the meta-analysis. The first hypothesis is supported: the average conversion rate was higher (59 percent versus 49 percent) when the studies were not attributed to one brand, and the sampled inquirers were not informed that they were known to have requested free literature offered in advertisements for this brand (one tailed $t = -1.732, df = 30; p < .05$).

The results support the second hypothesis: the average conversion rate is significantly lower (36 percent versus 47 percent) when the sampled inquirers who respond are not informed that the survey is in response to their inquiring for free literature offered by a named brand (one tailed $t = 2.552, df = 31; p < .008$).

**DISCUSSION**

We present evidence that the question frame influences responses related to asking tourism-advertising inquirers about completed travel visits. The results lead us to suggest the adoption of Schwarz's (1999) recommendation that context manipulations be included in tourism-advertising conversion studies.

In discussing the recommendation made by Woodside (1990) that sampled inquirers not be reminded that they had requested free literature offered in advertisements, Burke and Gitelson (1990) offer the argument that the researcher is not being completely honest with the potential respondent. However, the researcher is not being dishonest in suggesting that the purpose of the study include objectives other than learning the travel behavior and demographics of the sampled inquirers.

Also, for the first time, empirical evidence has been described to support the contention that question framing that reminds sampled inquirers of their prior request-behavior is likely to influence their responses. Heretofore, Burke and Gitelson (1990) pointed out such framing comparisons are unavailable to support or refute Woodside's (1990) contention.

However, the results reported here are preliminary. Our meta-analysis complements rather than serves to substitute for the use of true experiment designs (see Banks, 1965) in which several alternative question-framing treatments and control groups are used with random assignment of subjects in the survey design.

At least two rationales may be the cause for higher conversion rates among sampled inquirers informed that they had requested free literature offered in advertisements compared to sampled inquirers not informed. First, the sampled inquirers informed about the brand sponsoring the study and that they had requested free literature about this brand may feel more obligated to report they did, or will, use the information received to travel to the advertised state. Second, the sponsor-informed sampled inquirers may use the question frame to mentally retrieve a trip made one or more years earlier in their lives—a trip not asked about in the survey—to answer positively that they traveled to the state. Such "telescoping" responses would be more likely when a questionnaire is focused mainly on one versus several brands.

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¹In a series of separate conversion studies for the state of Louisiana, Woodside and Sem (1990) report using the procedure of identifying the study to sampled inquirers as a university study of leisure travel related to seven U.S. states. The fact that the sampled inquirers were known to have requested free literature related to travel in Louisiana was not divulged in either the survey or the cover letter. After a second mailing to nonrespondents to the first mailing, the usable response rates ranged from 42 to 64 percent (across 10 separate studies).
**FUTURE RESEARCH**

We urge the use of true experiments to examine the influence of context manipulations in such conversion studies. The need for learning the variety and amount of unintended question interpretations by respondents is substantially unmet in the field of advertising conversion research.

Related to such issues is the question of asking respondents if the information sent to them was used to help decide on visiting the destination advertised. Empirical research related to such question frames (see Braun and Zaltman, 1998) includes the finding that respondents substantially underestimate the influence advertising has had on their own behavior. Consequently, asking respondents to report on the extent of influence on their own behavior of the free brand literature they received may be naïve.

**IMPLICATIONS FOR PRACTICE IN MEASURING ADVERTISING EFFECTIVENESS**

The current dominating research practice in advertising conversion studies, as well as focus group studies on advertising effectiveness, appears to include informing consumers of the name of the brand sponsoring the research. For example, subjects in focus groups are often asked to comment of the appeal of each advertisement one at a time when viewing a series of print or broadcast advertisements for the brand. Such practice is unnecessarily far removed from real-life processing of competing advertisements in conditions of clutter. Also, social desirability bias (Bandura, 1977) is likely to result—such single-brand advertising testing likely causes subjects to say something nice about at least
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one of the advertisements in the study. The focus of such studies is more likely to center on the subject’s views of the relative merits of each advertisement seen for the one brand and not on the persuasiveness of the advertising in attracting the subject to the brand versus competing brands. The second issue is the more telling one for advertising effectiveness research.

Rather than telling the subject that she or he is known to have responded to an offer for free advertised literature, or showing the subject advertisements one at a time for a brand to evaluate, a different research method is likely to be more useful. Asking the respondent questions about 10 brands, or showing a few sets of 10 advertisements per set, achieves several worthwhile outcomes. First, asking debriefing questions examines sponsor identity bias. Second, multiple brand tests provide estimates of how well each of your brand’s test advertisements does in getting through the clutter of competing brands’ advertisements (as well as advertisements for brands of other products).

Third, the testing approach using small numbers of independent sets of advertisements of competing brands reframes the main question before the subject to a brand appeal focus rather than an advertisement appeal focus. Asking, “Which message or offer, if any, among this set of 10 advertisements appeals the most to you?” inherently provides more useful information for the advertiser compared to placing one advertisement before the subject and asking, “What do you like or dislike about this advertisement?” The usual method of identifying the one brand sponsor in an advertising effectiveness study likely generates self-perceptions by the subject that she or he is an expert in judging the quality of the brand’s advertising. Using such a method provides no data on the relative strength of the brand’s advertisements versus competing advertisements in capturing awareness or attracting the subject to the brand compared to multiple brand surveys or experiments of advertisements for competing brands.

Actions for avoiding brand-sponsor identity bias and self-generated validity bias are worthwhile and doable. By framing your advertising effectiveness study to include questions about multiple brands helps to eliminate brand-sponsor-identity bias and increases the depth and quality of data collected—worthy objectives in advertising research.

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REFERENCES

References preceded by an asterisk include one or more conversion studies included in the meta-analysis in this article.


