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A HONG KONG STUDY OF ADVERTISING CREDIBILITY

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Key words: advertising, skepticism, credibility, self-esteem

Structured Abstract

Research paper

Purpose

The aim of the research reported in this paper was to identify for which types of products and services consumers find the advertising to lack credibility and in which media this effect is most serious. The association between self-esteem and skepticism towards advertising was also explored.

Design/methodology/approach

Using a structured questionnaire, two hundred Hong Kong shoppers were surveyed in mall intercept interviews.

Findings

The results showed that ads for weight-loss products were considered the least credible. The broadcast media (radio, broadcast television and cable television) were considered the most credible advertising media, while direct mail and the internet were considered the least credible. Self-esteem was found to be positively related with skepticism towards advertising.

Research limitations

The study had two key limitations. First, the list of products and services was not exhaustive. Second, the study did not consider how frequently the interviewees were exposed to each medium.

Practical implications

By recognizing the credibility of their advertisements and the media in which they are placed, and the influence of self-esteem on advertising skepticism, the findings are of use to advertisers in formulating their strategies. The findings also provide information of value for policy makers trying to combat non-credible and deceptive advertising.

Originality/value

The primary contribution from this work comes in the form of methodological considerations. This is the first study to consider the relationships between self-esteem and skepticism after controlling for socially desirable responding. Also, this study takes a broader perspective by looking at credibility of advertising across a range of products and media, and with a broader audience, than has been considered in previous research.

1. Introduction

Advertisements which are unbelievable or over-dramatized can irritate consumers, and their claims frequently are not accepted (Obermiller, Spangenberg and MacLachlan, 2005). It is generally agreed that deception on the part of marketers is not a rare occurrence (Andreasen, 1991). Russo et al. (1981) suggest that an advertisement is deceptive if it creates, increases or exploits a false belief about product/service performance. Most countries implement both self regulation and government controls which require advertisers to be able to prove that their claims are true (Petty, 1996). For example, in the US, the FTC (Federal Trade Commission) defines deceptive advertising as, "…a misrepresentation, omission or practice that is likely to mislead the consumer acting reasonably in the circumstances to the consumer's detriment." (FTC, 1983).

In recent years there has been widespread criticism alleging deceptive ads in Hong Kong, especially ads relating to real estate, beauty, and health and weight-loss products and services (Hong Kong Consumer Council, 1999). Such potentially deceptive ads may indeed have appeared since Hong Kong's regulatory environment has loopholes and gray areas. For instance, the Trade Descriptions Ordinance protects the consumer against the supply of goods with false or misleading "trade descriptions", which is interpreted as including information or instructions relating to goods appearing in advertisements. However, the ordinance applies only to goods, not to services, accommodation or facilities. In addition, there is no regulation of health claims made in the advertisements relating to health food-like food supplements, slimming foods, food substitutes, or food containing traditional Chinese medicine. Health food very often falls outside the controls relating to drugs, such as the Pharmacy and Poisons Ordinance. That makes such products and services major areas of concern when it comes to advertising. The Hong Kong Broadcasting Authority's TV advertising code stipulates that, "No advertisements may contain any descriptions, claims or illustrations which expressly or

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by implication depart from truth or mislead about the product or service advertised or about its suitability for the purpose recommended", but sponsored TV shows (which in effect are advertorials) commonly feature testimonials by celebrities, and depict "success stories" after using, for instance, health-related products. These are not regarded as commercials and as such are not governed by the TV Advertising Code. In any case, there is no such code for the print media. While a code of practice has been adopted at the agency level to prevent deceptive advertising, this code is only implemented on a voluntary basis and the prevalence of misleading advertising in Hong Kong would suggest that its effect is limited.

Hong Kong has been striving to become the marketing and advertising capital of Asia, yet it appears to lag behind many developed economies in terms of both the legal and self-regulatory framework regulating misleading advertising, particularly in the non-broadcast media. The increasing concern about deceptive advertising in Hong Kong and the previously mentioned variance in advertising regulations make Hong Kong an ideal location for studying perceptions of advertising credibility. While much research has been conducted on advertising credibility (e.g. Newell et al., 1998; Russo et al., 1981), these previous studies have all suffered from sampling and measurement limitations. To overcome the shortcomings of previous research, this empirical study examined perceived ad credibility in Hong Kong based on the three major elements of the communication process: sender, channel, and receiver (Schramm, 1971). Specifically, the study first identified which product/service advertisers (i.e. senders) and which media (channels) consumers found least credible. The association between self-esteem (a receiver trait) and skepticism towards advertising was then explored.

2. Background and hypotheses

Product Type

Ad credibility is the degree to which the consumer perceives claims made about the brand in the ad to be truthful and believable (Lutz, 1985). It has a positive influence on attitude towards the brand, which then affects the intention to purchase the brand (MacKenzie et al., 1986). Ads for different kinds of products and services differ in their level of credibility. Ads sponsored by weight-loss products or services, for instance, have received much criticism for their allegedly deceptive content. For such products, Cleland et al (2002) go so far as to suggest that "most of the programs and products advertised are at best unproven and at worst unsafe" (p v). In the same report it was suggested that of 300 weight-loss advertisements sampled from broadcast and cable TV, radio, magazines, supermarket tabloids, direct mailings, commercial e-mails and web sites, 40% made at least one false claim, while 55% made unsubstantiated claims.

In Hong Kong too, ads for weight-loss products and slimming services are often perceived as lacking credibility (e.g. Hellmich, 2002; Hong Kong Consumer, 1999). In Hong Kong, people no longer diet solely for health reasons. It has become increasingly common for the non-obese to diet, particularly women. Even those who are at a healthy weight strive to look thinner, and demand for weight-loss products is surging (Prendergast et al., 2002a). Advertisers are often accused of grossly exaggerating the benefits of their products and services to attract potential slimmers (Cleland et al 2002). With this backdrop, it is hypothesized that such advertisements are perceived as less credible than ads for other types of products and services.

H1: The claims in weight-loss product advertisements are perceived as less credible than those in advertisements for other products/services.

Medium Credibility

Lutz (1985) has defined advertising credibility in terms of claims made about brands or products, but that definition is rather limiting in that it doesn't consider the impact of the advertising medium on credibility. Advertising credibility relates not only to the product being advertised, but also to the medium through which the message is being delivered. Advertising medium credibility can be defined in terms of consumers' perceptions of the average believability of a channel's overall advertising content (Kiousis, 2001). Each medium has its own image and personality (the vehicle source effect of Aaker and Brown (1972)), so it is logical to suggest that different media have different levels of intrinsic credibility. Research has shown that the advertising medium itself influences consumers' perceptions of the ads it carries. Marshall and Na (2003) revealed that an advertisement presented on the Internet has less credibility than the same message presented in a print medium. Their explanation was that as anyone can put anything online, it is generally more difficult for a person to distinguish whether the material on the Internet has been inspected or not. Consumers consistently did not consider the Internet a credible source and were less likely to believe web advertisements in studies by Diaz (2000) and Gilbert (1999).

Direct mail is also perceived as a medium which has relatively low credibility (Belch and Belch, 2007). Research by the Hong Kong Consumer Council (Hong Kong Consumer Council, 1999) has shown that print media carry a greater percentage of deceptive ads than broadcast media. This may be because, as mentioned earlier, ads in print media face less legal restrictions than those in the broadcast media (which are monitored by the Broadcasting Authority). Direct mail is print medium, and it is often referred to as "junk mail" (Belch and Belch, 2007). It is also viewed as lacking credibility (Gilbert, 1999). The Hong Kong Direct Marketing Association offers a Code of Ethics to advertising agencies and marketers regarding direct mail marketing, but adherence to the code is voluntary. Thus, direct mail may be is perceived as having low credibility in Hong Kong. This leads to H2 and H3.

H2: Radio, broadcast television and cable television are perceived as the most credible

advertising media.

H3: Direct mail and the internet are perceived as the least credible advertising media.

Self- Esteem and Skepticism Towards Advertising

Skepticism towards advertising is generally defined as the tendency to disbelieve advertising

claims (Obermiller and Spangenberg, 1998). This is in line with the concept of ad

believability, which also influences the ad credibility (Lutz, 1985). Highly skeptical

consumers are, by definition, more disbelieving of any advertising claim than their less

skeptical counterparts (Obermiller and Spangenberg, 1998; Hardesty et al. 2002). More

recent research has indicated that more skeptical consumers like advertising less, rely on it

less, and attend to it less. They respond more positively to emotional appeals than to

information appeals (Obermiller, Spangenberg and MacLachlan, 2005). Advertising

skepticism has also been related to consumer traits such as self-esteem (McGuire, 1968).

Branden (1994) has defined self-esteem as one's reputation with oneself. Past research has

shown that persons high in self-esteem often exhibit low conformity (Hovland and Janis,

1959) as well as low persuadibility (McGuire, 1968; Rhodes and Wood, 1992). People with

higher self-esteem are more demanding, have more value in their own opinion, and are more

difficult to persuade. This view is consistent with the results of the longitudinal research by

Boush et al. (1994) which concluded that adolescents with high self-esteem are more

skeptical towards television advertising than a matched group with low self esteem. People

with high self-esteem will trust their beliefs and values, and thus will be less likely to be led

by claims in TV advertising. On the other hand, one with low self-esteem will lack self-confidence and thus be more inclined to rely on the judgments of others. This may make those low in self-esteem less skeptical towards TV (or, indeed, any) advertising.

The present study was designed to investigate such relationships between self-esteem and skepticism after controlling for socially desirable responding [the tendency for individuals to present themselves favorably with respect to current social norms and standards (Zerbe and Paulhus, 1987)]. It looked at advertising in general, not just TV advertising. This, and controlling for socially desirable responding, is by no means unimportant. Boush et al.'s (1994) study was limited to 1) adolescents and 2) the context of television advertising. In addition, their work did not control for socially desirable responding. The latter effect is of particular concern, since the items in the self-esteem scale employed were worded in such a way as potentially to invite interviewees to give less than accurate answers. In short, method variance concerns seem to have been given little attention in previous research in this area. H4 is offered:

H4: Self-esteem is positively related with skepticism towards advertising, after controlling for socially desirable responding.

3. Methods

Sample

Given the number of independent variables, and in anticipation of applying regression analysis to the results, a ratio of 40 respondents per variable was considered reasonable, assuming reliable measurements and a non-skewed dependent variable (Tabachnick and

Fidell, 2001). Accordingly, 200 responses were gathered through personal interviews using a structured questionnaire. The mall intercept survey interview was the method selected. This is because many Hong Kongers pass through shopping malls after work on weekdays (public transportation stations and restaurants are found there), and they like to shop in malls at weekends. The mall intercept interviews were conducted from 5:30 p.m. to 9:00 pm over a four week period in high traffic malls in three districts of Hong Kong: Tsim Sha Tsui (in Kowloon, an entertainment district), Causeway Bay (on Hong Kong Island; a commercial district) and Tsuen Wan (in the New Territories; an industrial district). People with a complete range of ages and occupations could be interviewed in these locations. To control for self-selection bias, respondents were selected systematically, with the interviewer choosing every third passers-by (Sudman, 1980). In cases where non-Cantonese speakers were chosen, they were skipped and the next third passer-by was chosen.

While the intercept sampling method was designed to yield a sample representative of the total population, extrapolation of the results to the general Hong Kong population requires some caution. Having said that, previous researchers have found data gathered in mall intercept surveys to be suitable in advertising research, especially if an element of objectivity is included in the sampling, as was the case here (Lautman et al., 1981).

Measures

There were six sections to the questionnaire (all questionnaire items can be seen in the appendix). Six point scales were adopted instead of a five or seven point scales in order to avoid any central tendency and for better discriminatory power (Prendergast et al., 2001).

A list of product and service advertisements was generated based on conventional classifications of consumer product/service categories together with reference to the

classifications adopted in previous research by the Hong Kong Consumer Council (1999).

The list was then further revised through focus group interviews. To measure the credibility

of ads for each product/service category (Section 1), the approach of Kent and Allen (1994)

was adopted, with interviewees being asked to indicate (on a six-point semantic differential

scale, with 1 = credible and 6 = not credible) their perception of the credibility of each of the

fifteen product and service advertisements.

To assess medium credibility (Section 2), 10 media were listed in the questionnaire. Except

for the Internet, all of the media were borrowed from Prendergast et al.'s (2002b) study of

offensive advertising in Hong Kong. Respondents were then asked to assess each media

along a three-item six-point Likert scale previously used by Block and Keller's (1995) in

their study of the perceived credibility of handbills. The score from these three items was

then used to calculate the average credibility level of each media, where 1 = credible and 6 =

not credible.

Skepticism was assessed in Section 3 as the sum of the nine items that comprise Obermiller

and Spangenberg's (1998) advertising skepticism scale, with 1 for strongly agree (low

skepticism) and 6 for strongly disagree (high skepticism). Higher scores therefore represented

higher skepticism.

Section 4 assessed each respondent's self-esteem using a scale adopted from the studies of

Rosenberg (1965) and Boush et al., (1994). The three items (where 1= strongly disagree, and

6 strongly agree) measured the extent to which a person had a positive view of him/herself.

Lower scores therefore indicate lower self-esteem.

Section 5 consisted of ten true-or-false statements measuring the influence of social

desirability on the subject's responses. The scale was originally developed by Crowne and Marlowe (1960), but the abbreviated version used here has been widely applied by others (Podsakoff, 1986). The higher the score on the scale, the more a person may be tending to respond to questions in a manner he/she deems socially desirable.

Section 6 aimed at collecting demographic information about the respondents. Gender was dummy coded (0 = male and 1 = female). Age was dummy coded, with one dummy being 29 years or below (age dummy 1), the other being 40 years or above (age dummy 2), with an age between these thresholds used as the reference category. Education was dummy coded (0 = secondary or below and 1 = tertiary or above). Personal monthly income was dummy coded, with one dummy being HK$10,000/month or less (income dummy 1), the other being HK$20,000/month or more (income dummy 2), while an income between these thresholds was used as the reference category.

The questionnaire was developed in English, translated into Chinese, then back-translated for checking (Brislin, Lonner, and Thorndike, 1973; Tamanin et al., 2002). The questionnaire was pretested before use. Although every effort was made to control for common method variance (for instance, controlling for socially desirable responding), it was considered prudent to test for common method variance using Harman's (1967) single factor test. This test assumes that if a significant amount of common method variance exists, a single factor, or a general factor that explains a significant amount of the variance, will emerge from factor analysis when all the variables are entered. The results of the factor analysis revealed that there were five factors with eigenvalues above 1.0, which combined explained 62.6% of the variance. The largest single factor explained 28.4%. No general factor was apparent in the unrotated structure.

Descriptive Statistics

Of the 200 interviewees, slightly more than half were male. The majority were below 40 years old, while 9 percent were aged 50 or above. The majority of interviewees (88.5%) had finished secondary school. More than half of the interviewees earned less than HK$20,000 per month (roughly USD$2,600 per month).

Table 1 presents the means of the self-esteem, skepticism, and social desirability scores and correlations among them. Each mean is the average of the scores on items measuring that construct.

(INSERT TABLE 1 HERE)

The internal reliability of the scales was assessed using Cronbach's alpha (Cronbach, 1951) or a KR20 coefficient for the dichotomous data. Both the self-esteem and skepticism scales were unidimensional and displayed acceptable reliabilities (.80 and .92 respectively). The original alpha score for the ten items of the social desirability scale was 0.61. On deleting item 4 ("I have never been irked when people expressed ideas very different from my own") the alpha increased to 0.64. While the generally agreed upon lower limit for Cronbach's alpha is 0.70, 0.60 is considered acceptable in exploratory research (Hair et al, 1998).

As predicted, there was a significant correlation between self-esteem and skepticism towards advertising. There was also a (relatively weaker) correlation between self-esteem and the tendency for socially desirable responding (implying that it is necessary to control for social desirability in studies of this sort).

Hypothesis testing

Ad Credibility and Product Type

The interviewees were asked to rate the credibility of ads in 15 product/service categories. The results are shown in Table 2.

(INSERT TABLE 2 HERE)

The least credible advertisements were for weight loss products (4.70). The second least credible were weight loss services advertisements (4.55). Hair regrowth product advertisements (4.53) were the third least credible.

Hypothesis 1 predicted that advertisements for weight-loss products would be perceived as less credible than those for other products or services. The means in Table 2 were subjected to repeated measures analysis of variance to compare interviewees' perceptions of the credibility of ads for different types of products and services. The results revealed that ads for the fifteen different product and service categories were perceived as having significantly different levels of credibility [$F(14,186) = 47.19, p < .001$].

Pairwise comparison (Table 3) shows that the advertising claims for weight-loss products were perceived as the least credible. This supports Hypothesis 1.

(INSERT TABLE 3 HERE)

Medium Credibility

For each medium, the internal reliability of the three-item medium credibility scale was computed. The alphas were above 0.70, indicating acceptable internal reliability. Table 4 shows the average credibility of each medium.

(INSERT TABLE 4 HERE)

Radio (M = 3.01), broadcast television (M = 3.14) and cable television (M = 3.40) were perceived as the three most credible media. In contrast, direct mail (M = 4.51) and the Internet (M = 4.35) were viewed as the two least credible.

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Hypothesis 2 predicts that radio, broadcast television and cable television would be perceived as the most credible media. The means shown in Table 4 were subjected to repeated measures analysis of variance to compare interviewees' perceptions of the credibility of the ten media. The media were found to differ significantly in perceived credibility [$F(9,191) = 53.11$, $p<.001$]. Pairwise comparison (Table 5) shows that radio, broadcast television and cable television were perceived by the interviewees as the most credible advertising media, which supports Hypothesis 2. The same table also shows that the internet and direct mail were perceived by the interviewees as the least credible media, which supports Hypothesis 3.

(INSERT TABLE 5 HERE)

Relations amongst Constructs

To test the hypothesis that self-esteem predicts advertising skepticism, the procedures recommended by Cohen and Cohen (1983) to test statistical significance were used. The following data were entered into a hierarchical regression: (1) demographic variables in the following order: sex, income, education, age; (2) socially desirable responding; (3) self esteem. All these variables were regressed separately on the outcome variable so that the effect of demographics and the control variable were partialed out from the main effects. Tolerance levels indicated that multicollinearity is not a concern. The results are shown in Table 6.

(INSERT TABLE 6 HERE)

Model 1 included only the demographic variables. The R^2 and Adjusted R^2 were .195 and 0.170 respectively. Gender ($\beta = -.151$, $p<0.05$), income dummy 1 ($\beta = -.280$, $p<0.001$), and education ($\beta = .213$, $p<0.01$) were significantly associated with advertising skepticism.

Model 2 contained the control variable, socially desirable responding. Adding this variable significantly increased the R^2 ($\Delta R^2 = .017$, $p<0.05$).

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The addition of self-esteem in Model 3 produced a significant change in R^2 ($\Delta R^2 = .148$, $p<0.001$), and self-esteem has a standardized beta of .438 ($p<0.001$). Accordingly, self-esteem accounts for a unique variance in advertising skepticism. H4, which states that self-esteem is positively related with skepticism towards advertising (after controlling for socially desirable responding) was supported.

From Table 6, it is apparent that self-esteem explained 14.8% of the variance in skepticism towards advertising over and above that explained by socially desirable responding, with the latter explaining only 1.7% of the variance in the dependent variable. Demographic variables explained the largest portion of the variance (19.5%). An examination of the interactions between demographic variables and self-esteem revealed no significant results.

5. Discussion

Before discussing the findings, several limitations need to be recognized. First, the list of products and services was not exhaustive (for instance, automobiles were not included). Second, there may have been distractions inherent in the mall environment during the survey which could have affected the responses (McDaniel and Gates, 1996). Third, the study did not examine how frequently the interviewees were exposed to each medium, which may have an effect on their perceptions of ad credibility. In future research, it would be useful and interesting to investigate how the level of ad credibility varies when an ad for a less credible product/service (e.g. a weight-loss product) is placed in a credible advertising medium (e.g. radio). Also, it would be interesting to investigate whether there are other consumer personality traits aside from self-esteem that predict advertising skepticism.

Despite these limitations, this study has built on the previous work related to advertising

credibility and offers new insights about the relationship between advertising credibility and product type, medium type, and consumer self-esteem. Advertisements for weight-loss products, weight-loss services, hair regrowth products, and cosmetic and beauty products were generally ranked with lower levels of credibility than advertisements for other products and services. The explanation for this finding may be that these products are categorized as improving or enhancing physical attractiveness, and advertisers of these appearance improvement products and services rely heavily on verbal claims rather than specific numerical claims to indicate in the ads the effects of their products or services. Studies have shown that consumers feel that verbal claims provide a wider margin for deception than more specific numerical claims (Mohr et al., 1998).

Radio, broadcast television and cable television were found to be the more credible than other media as advertising channels. This general finding may be explained by the advertising regulations established by the Hong Kong Broadcasting Authority to police advertising in the broadcast media. Consistent with this theorizing, the (unregulated) print media were perceived as being less credible than the broadcast media. Therefore, in terms of attempting to limit consumer exposure to misleading advertising, this finding would offer support for arguments that the print media in Hong Kong are in need of greater advertising regulation. It is interesting that within the broadcast media group, radio had the highest credibility. This finding may be explained by creativity restrictions (specifically, the inability of radio to visually mislead).

The Internet and direct mail were perceived as the least credible advertising media. This may be a result of the pervasiveness of junk mail, giving people a perception that all direct mail is junk mail. For the Internet, this finding may be explained by its freewheeling and unregulated nature.

Consistent with the findings of Calfee and Ringold (1994), the interviewees generally believed that advertising is not a reliable source of information about products and services, i.e. they were generally skeptical. Boush et al. (1994) showed that adolescent self-esteem was positively related to skepticism towards television advertising, but they did not study skepticism towards advertising in general, nor did they control for socially desirable responding. This study has compensated for that shortcoming and showed that, after controlling for socially desirable responding, someone with higher self-esteem will be more skeptical towards advertising in general.

6. Managerial Implications

The findings are of use to advertisers in formulating their strategies and provide information of value for policy makers. First, looking at products whose advertising is perceived as being less credible, advertisers of these products may find that they can enhance the credibility of their advertising by providing empirical evidence that their products actually have a significant effect on the problems they are promoted as resolving. In the lack of such evidence, advertisements for such products are going to lack credibility and therefore, one would predict, will have less positive attitudinal and behavioral effects. Another approach could be to use credible sources to endorse their products, which could enhance the overall perceived credibility of their advertising.

The Internet and direct mail had relatively low credibility as a medium. The initial managerial implication is that, in general, it would be appropriate for marketers to rely less on direct mail and the internet for advertising. It is however quite difficult for some companies, such as small firms and online stores, to do so. They may need to take extra measures to shore up their credibility by, for example, providing the address of a physical office or a by offering a money-back guarantee (Marshall and Na, 2003) when they use these media to compensate for

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the poor credibility of the medium.

Considering consumer self-esteem, the findings would suggest that advertising practitioners need to consider the self-esteem of their target audience, and recognize that their advertising claims are more likely to be questioned and challenged if the target audience has high self-esteem. An ethical issue is raised: do advertisers whose products have doubtful claims deliberately target their message at consumers who are lacking self-esteem, in the knowledge that those consumers are more likely to believe their message? Testing this hypothesis in future research, while difficult and controversial, would be of interest and importance.

In term of public policy, the findings tend to be consistent with the literature in that ads for weight-loss products and slimming services are often perceived as lacking credibility (e.g. Hellmich, 2002; Hong Kong Consumer, 1999), and this highlights areas of adverting in which regulation might be beneficial. On the other hand it has to recognized, or at least hoped, that marketers rarely set out to produce misleading or non-credible advertising, and there is a difficult balancing act to perform between ensuring freedom for advertising messages and consumer protection. While public policy issues are not a focus of this paper, public policy makers are obviously going to be interested in policing advertising that substantively lacks credibility. Such policy makers may also be interested to know that, at least in the Hong Kong content, advertising tends to be less credible in the unregulated media.

7. Conclusions

This study has demonstrated that the credibility of ads varies depending on the product or service being advertised. The credibility of various media has also been shown to vary, and self-esteem has been shown to be correlated with skepticism towards advertising. All of these findings should be of use to advertisers in formulating their strategies. The findings should

also be useful to policy makers trying to combat non-credible and deceptive advertising.

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Appendix

Variable	Questions
Advertising credibility and product type	1. I feel that the claims made in XXX advertisements are credible.
Media credibility	1. The advertisements in XXX are credible. 2. I think the advertisements in the XXX are exaggerated.* 3. I think the advertisements in the XXX are unbelievable.*
Advertising Skepticism	1. We can depend on getting the truth in most advertising. 2. Advertising's aim is to inform the consumer. 3. I believe advertising is informative. 4. Advertising is generally truthful. 5. Advertising is a reliable source of information about the quality and performance of products. 6. Advertising is truth well told. 7. In general, advertising presents a true picture of the product being advertised. 8. I feel I've been accurately informed after viewing most advertisements. 9. Most advertising provides consumers with essential information.
Self-esteem	1. I feel good about myself as a person. 2. I can do many things well. 3. I am looking forward to the future.
Socially desirable responding	1. I'm always willing to admit it when I make a mistake. 2. I always try to practice what I preach. 3. I never resent being asked to return a favor. 4. I have never been irked when people expressed ideas very differently from my own. 5. I have never deliberately said something that hurt someone's feelings. 6. I like to gossip at times.* 7. There have been occasions when I took advantage of someone.* 8. I sometimes try to get even rather than forgive and forget.* 9. At times I have really insisted on having things my own way.* 10. There have been occasions when I felt like smashing things.*

* reverse scored

Table 1: Descriptive statistics for the main research variables

	M	SD	1	2
1. Skepticism towards advertising	3.50 (.92)	.844		
2. Self-esteem	4.37 (.80)	1.03	.463**	
3. Social desirability	.530 (.64)	.233	.162*	.237**

* Significant at the $p < 0.05$ level
** Significant at the $p < 0.01$ level
*** Significant at the $p < 0.001$ level
For self esteem, 1 = strongly disagree (lower self esteem) and 6 = strongly agree (higher self esteem). For skepticism, 1 = strongly agree (low skepticism) and 6 = strongly disagree (high skepticism).
Reliabilities in parenthesis

Table 2: Credibility of product/service advertisements

Products/Service advertised	Mean	S.D
1. Weight-loss products	4.70	0.814
2. Weight loss services	4.55	0.966
3. Hair regrowth products	4.53	0.977
4. Cosmetics	3.90	0.984
5. Health food	3.87	0.955
6. Real estate	3.84	1.093
7. Tutorials and training	3.83	1.000
8. Chinese medicines and therapies	3.82	0.991
9. Insurance	3.71	1.040
10. Travel services	3.29	0.882
11. Telecommunications	3.20	0.965
12. Professional services	3.03	1.077
13. Food and beverage	2.99	0.990
14. Banking services	2.86	1.121
15. Movies	2.75	1.036

1 = credible and 6 = not credible

Table 3: Mean pairwise differences in the credibility of ads for 15 types of products/services

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.Real estate	---	-0.71*	0.15	-0.30	-0.60	0.10	0.55*	-0.87*	-0.70*	1.08*	0.81*	0.64*	0.13	0.98*	0.85*
2.Weight loss services		---	0.73*	0.68*	0.65*	0.72*	1.26*	-0.16*	0.01	1.80*	1.52*	1.35*	0.84*	1.69*	1.56*
3.Chinese medicines/ therapies			---	-0.05	-0.08	-0.01	0.53*	-0.88*	-0.71*	1.07*	0.80*	0.63*	0.11	0.96*	0.84*
4.Health food				---	-0.03	0.04	0.58*	-0.84*	-0.67*	1.12*	0.84*	0.67*	0.16*	1.01*	0.88*
5.Cosmetics					---	0.07	0.61-	-0.81*	-0.64*	1.15*	0.87*	0.70*	0.19*	1.04*	0.91*
6.Tutorials and training						---	0.54*	-0.88*	-0.71*	1.08*	0.80*	0.63*	0.12	0.97*	0.84*
7.Travel services							---	-1.42*	-1.25*	0.54*	0.26*	0.09	-0.42*	0.43*	0.30*
8.Weight loss products								---	0.17*	1.95*	1.68*	1.51*	0.99*	1.84*	1.72*
9.Hair regrowth products									---	1.78*	1.51*	1.34*	0.82*	1.67*	1.55*
10.Movies										---	-0.27*	-0.44*	-0.96*	-0.11	-0.23*
11.Professional services											---	-0.17*	-0.69*	0.17*	0.04
12.Telecommunications												---	-0.52*	0.34*	0.21*
13.Insurance													---	0.85*	0.73*
14.Banking														---	-0.13
15.Food and beverage															---

* Significant at the p < 0.05 level

Table 4: Medium credibility

	Media	Mean	S.D
1.	Direct mail	4.51	0.876
2.	Internet	4.35	0.823
3.	Women's magazines	3.97	0.703
4.	Men's magazines	3.86	0.638
5.	General magazines	3.78	0.680
6.	Posters and billboards	3.56	0.633
7.	Newspapers	3.43	0.732
8.	Cable television	3.40	0.778
9.	Broadcast television	3.14	0.848
10.	Radio	3.01	0.827

1 = credible and 6 = not credible

Table 5: Mean pairwise differences between the credibility scores of different media

	1	2	3	4	5	6	7	8	9	10
1.Internet	---	0.948*	0.792*	0.918*	0.565*	0.382*	0.488*	-0.0163*	1.34*	1.205*
2.Cable TV		---	-0.157*	-0.030	-0.383*	-0.567*	-0.460*	-1.112*	0.392*	0.257*
3.Posters and billboards			---	0.127*	-0.227*	-0.410*	-0.303*	-0.955*	0.548*	0.413*
4.Newspapers				---	-0.353*	-0.537*	-0.430*	-1.082*	0.422*	0.287*
5.General magazines					---	-0.183*	-0.077	-0.728*	0.775*	0.640*
6.Womens' magazines						---	0.107*	-0.545*	0.958*	0.823*
7.Mens' magazines							---	-0.652*	0.852*	0.717*
8.Direct mail								---	1.503*	1.368*
9.Radio									---	-0.135*
10.Broadcast TV										---

* Significant at the p < .05 level

Table 6: Hierarchical regression analysis: predicting advertising skepticism from self-esteem

Independent variables	Model 1 β	(t)	Model 2 β	(t)	Model 3 β	(t)
Demographics						
Gender	-.151	(-2.160*)	-.131	(-1.871)	-.083	-1.312
Income (dummy 1)	-.280	(-3.724***)	-.282	(-3.775***)	-.210	-3.074
Income (dummy 2)	.082	(1.003)	.105	(1.273)	.115	1.547
Education	.213	(2.652**)	.183	(2.262**)	.115	1.555
Age (dummy 1)	.021	(.186)	.052	(.457)	.164	1.562
Age (dummy 2)	.040	(.372)	.033	(.310)	-.040	-.406
Control						
Social desirability			.137	(2.055*)	.068	(1.118)
Main predictor						
Self-esteem					.438	(6.650***)
R²	.195		.212		.360	
Adjusted R²	.170		.183		.333	
Std. error of estimate	.728		.762		.688	
F equation	7.778		7.382		13.442	
ΔR²	.195		.017		.148	
F for ΔR²	7.778***		4.224*		44.228***	

β = standardized beta coefficient
* Significant at the p < 0.05 level
** Significant at the p < 0.01 level
*** Significant at the p < 0.001 level