

To substantiate or not to substantiate? Analysis of Claim Substantiation and Product Identification on Advertising

Steve H. Sohn
University of Louisville

Abstract: Typical body improvement product advertisements use rather exaggerated claims without using substantiation. Does this common yet unproven tactic really work in advertising this particular product category? Does a perceived product identification influence advertising effectiveness with or without claim substantiation? The current study analyzes impacts of two particular independent variables (product identification and claim substantiation) on advertising effectiveness measured through attitude toward ad (A_{ad}) and attitude toward brand (A_b). The current study is based on a 2x2 factorial experimental design with (a) exercise vs. diet pills as two different product identifications, and (b) present vs. absence of claim substantiation as two main conditions. Structural Equation Modeling (SEM) is utilized ($N= 665$) as analysis tool. Tested model, which has a very acceptable model fit, shows that the influence of product identification is much larger ($\beta =.39$) than the influence of claim substantiation ($\beta =.10$) on perceived ad believability. The ad believability is directly influences perceived argument quality ($\beta =.73$), which, in turn, exerts heavy influence on A_{ad} ($\beta =.64$). The results provide important practical and ethical implications to the field of body improvement industry.

Keywords: weight loss advertising, body image, attitude change, claim substantiation, product identification, advertising effectiveness

Contact: Steve H. Sohn, Assistant Professor, Department of Communication, University of Louisville, 310 Strickler Hall, Louisville, KY 40292, steve.sohn@louisville.edu

Introduction

Every day, people are bombarded with a barrage of idealized body images focusing on thin-ideal from the media. Put simply, ideal body images are found everywhere in the media. Consequently, due to the prevalent nature of such images, more and more people are becoming obsessed in improving their body shapes. As a result, in the U.S. alone, the weight loss market was an industry worth \$46.3 billion in 2004, and was to be estimated for reaching \$61 billion by 2008 (PRWeb, March 23, 2005).

As the industry grows, we see more and more advertisements for exercise equipments, diet pills, diet supplements, and other body improvement/weight loss products, all of which utilize various message tactics. Some advertisements focus on pictorial images of a product with exaggerated and over-simplified body copies. Others may use detailed body copy with supporting substantiation to increase the level of perceived credibility. A comprehensive content analysis on current trends of body improvement advertisements has yet to be conducted by the time this manuscript was written. However, one can safely assume that the typical messages promoting body-improving products or services use exaggerated claims such as “just 30-minutes a day, three times a week” or “one pill a day” *without* much detailed substantiation. But does it really work? Despite its widespread use, is it really an effective tactic in generating the types of outcomes those advertisers desire (e.g., generates positive brand image, inducing higher purchase intention) from the targeted audiences? The problem in answering that question is that no study has been conducted in measuring the specific effects of substantiated claims in the body improvement product advertisements. Thus, there has not been an empirical evidence on effectiveness (or *ineffectiveness*) of that widely popular, yet under-studied tactic in advertising this particular types of product category of body improvement.

Moreover, certain types of body improvement products (e.g., exercise equipment) maybe perceived as more legitimate and proven products in producing desired results simply by its perceived product identification (e.g., “it promotes physical activity”). On the other hand, other types of products that are more difficult to identify as to what it does/how it works (e.g., diet pills) may be perceived as to be not-so-legitimate or “too good to be true” in producing the desired results. Then, regardless of the message tactic used, does the identification of the advertised product by itself generate an impact sufficient enough to influence the advertising effectiveness? On the other hand, can the effective use of a message using detailed and scientific substantiation for the claim overcome the perceived *ineffectiveness* of the advertised product? Just how big of an impact should product identification and presence of detailed substantiation have independently and together on advertising effectiveness for body improving products? So far, volumes of studies were done on the cognitive processes in advertising messages and impacts of source characteristics on persuasion. Still, there has not been a research that could actually provide empirical evidence on the particular effects of product identification and claim substantiation that targeted ever-growing body improvement industry. The only studies that focused on such issues thus far have been by Kavanoor, Grewal, and Blodgett (1997) that examined the effects of claim substantiation on over-the-counter medication advertisings, or by Bishop (1997) that examined the effects of diet advertising on consumers’ intentions to engage in a diet.

Therefore, the main purpose of this study is to examine (a) the independent impacts of product category and (b) the independent impacts of claim substantiations on advertising effectiveness among college students using Structural Equation Modeling (SEM) as a main analysis tool. The results from the current study through SEM will make a unique contribution by taking a holistic approach in putting both independent variables (product identification and claim substantiation) together in advertising process through a model building. This particular approach will provide hard empirical evidence on distinctive effects of product identification and claim substantiations on advertising effectiveness in body improvement products. The results from the study will provide highly practical and ethical implications to the creative and message tactics in advertising within the body improvement industry.

Product Type, Evidence of Quality, and Ad Believability

It is a general belief that body improvement demands time and effort. Suppose, then, that most body improvement ads contain arguments consisting of unsubstantiated claims. According to the Elaboration Likelihood Model (ELM), the effects of argument quality on message evaluations and attitudes should be moderated by the involvement level of the receivers (Petty & Cacioppo, 1986). If the argument is of low quality using exaggerated claims, then the inclusion of evidence in the form of detailed substantiation may raise the argument quality up to a moderate level. If the argument claim is of low quality with exaggerated claims but little or no detailed substantiation is provided, then argument quality will remain at a low level. Therefore, assuming that audiences are involved in the body improvement issue and thus do pay attention to these advertisements, the presence of detailed claim substantiation in the ad is an important variable that influences how the advertising message is to be processed by influencing the level of perceived believability.

The believability of the ad is “the extent to which the audience perceives the claims made by the brand to be true” (Lutz 1985,p. 49). Audiences’ ratings of the believability of an advertisement should be a function of both central-systematic processing and peripheral-heuristic processing. As noted by Brunel and Nelson (2003), Eagly and Chaiken (1993), and Petty and Cacioppo (1986), the evidence of quality is a critical element in establishing advertising believability. Thus, along with an easily identifiable product category (Stewart & Furse, 1986), presence of detailed substantiations will increase the level of perceived advertising believability, which will increase the perceived argument quality.

H1: Easy to identify product category (e.g., exercise equipment) will more positively predict the perceived ad believability than a difficult-to-identify product category (e.g., diet pills).

H2: Advertisement with claim substantiation will more positively predict the perceived ad believability than the message without the claim substantiation

Believability, Argument Quality, Attitude Toward Ad, and Attitude Toward Brand

The information processing theory by McGuire (1968, 1985) describes six specific stages of how information is processed: message exposure, attention to the message, comprehension of message content, acceptance of the premises contained in message arguments, opinion

change, and attitude change. According to the theory, comprehension results in an attitude change. Thus, to accomplish persuasion, one must pay attention to the message and the message must be comprehensible. In this way, messages can persuade audiences to change beliefs, and ultimately behaviors.

According to the advertising process model developed by Hamilton and Mineo (1996), how much do audiences believe in the claim made in the ad will determine the level of “ad believability,” which will positively influence the presence of argument quality audiences perceive within the message. Both ad believability and perceived argument quality positively enforce the attitude toward the ad (A_{ad}). A_{ad} in turn will influence attitude toward the advertised brand (A_b).

The A_{ad} and the A_b can be defined as “enduring evaluations of the ad and brand that are influenced by both thoughts and feelings” (Heath & Gaeth, 1994, p. 129; see also Lutz, 1985; Petty & Cacioppo, 1986). Ad believability should have a direct and positive effect on attitude toward the ad, A_{ad} (Lutz, 1985; MacKenzie & Lutz, 1989). That is, an ad is believable to the extent that a consumer has confidence in the claims made in the ad, where “his/her counterargument may lower his/her attitude toward the ad” (Heath & Gaeth, 1994, p. 133). Moreover, Lutz (1985, p. 49) argued, “other things equal, the higher credibility of the ad, the more favorably the consumer responds to it.” Therefore,

H3: Perceived ad believability will positively predict perceived argument quality

H4: Perceived ad believability will positively predict attitude towards the ad (A_{ad})

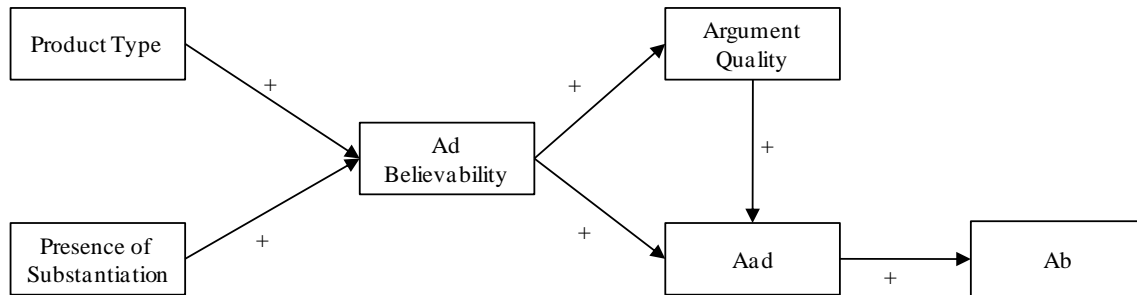
H5: Perceived argument quality will also positively predict attitude towards the ad (A_{ad})

Various previous studies (e.g., Batra & Ray, 1985; Cox & Locander, 1987; Droge, 1989; Gardner, 1985; Liu & Stout, 1987; Lutz, MacKenzie, & Belch, 1983; Machleit & Wilson, 1988; MacKenzie, Lutz, & Belch, 1986; Mitchell & Olson, 1981; Moore & Hutchinson 1985) all claim that A_{ad} influences A_b . Particularly, Batra and Ray (1985), Droge (1989), and Liu and Stout (1987) established strong causality that A_{ad} would cause changes in A_b . Therefore,

H6: A_{ad} will positively predict A_b

The proposed structural equation model (SEM) was constructed (Figure 1) based on the hypotheses listed above. The directions of paths in the proposed model indicate the predicted directional paths of influences and valence of paths indicate positive/negative influences. The proposed model predicts that product type and presence/absence of claim substantiation determines the level of ad believability, which will positively influence perceived argument quality and A_{ad} . A_{ad} will positively influence A_b .

Figure 1. Proposed model with all hypothesized paths.



- Product Type would be effect-coded (exercise equipment: +1, diet pills: -1) so the positive path coefficient would indicate the more influence coming from exercise equipment condition.
- Presence of substantiation would be effect-coded (presence of substantiation: +1, absence of substantiation: -1) so the positive path coefficient would indicate the more influence coming from presence of substantiation condition.

Methods

Procedure and manipulated materials

The study used a 2 (product identifications) x 2 (presence/absence of claim substantiation) factorial experiment design with on-line questionnaires. The two product types represented the two different product identifications. Exercise equipment was used as an easy to identify product because it was based on physically active approach in burning calories. A diet pill was used as a difficult to identify product because the general audiences would not have knowledge of how it would work through what types of chemical processes of calorie burning. Magazine advertisement was used as manipulated material in this experiment for the following reason.

One of the major goals of this study is to measure the effects of detailed substantiation found in the message in advertising. However, the television is a passive, low involvement medium. Krugman (1965) argues that television is a low involvement medium that induces learning without involvement through repetition, while magazine is a high involvement medium that may generate enduring changes in beliefs. Moreover, television commercials in general allow only limited opportunities for the audiences to be exposed to and process detailed messages due to their short exposure duration of only 15 or 30-second. On the other hand, magazine advertising, as a print medium, offers plenty of opportunities to the readers to read through and process the presented detailed substantiation.

The presence vs. absence of detailed claim substantiation was manipulated by utilizing a particular paragraph used in the message (Appendix 1 and 2), and the presence vs. absence of claim substantiation manipulations represented weak evidence versus strong evidence for claim made in the ad.

In order to eliminate any potential bias caused by existing attitudes toward real brands available in the marketplace, fictitious brands were used in the manipulated advertisements for the experiment. Additionally, in order to eliminate any potential bias caused by design layout and personal attractions of the models in the ads, (a) identical design layouts and color themes were utilized throughout all four advertisements, and (b) the pictures of products were utilized as a visual focus instead of a human model. The only differences among the four manipulated advertisements were the types of products used and types of body copy with or without the presence of detailed substantiation.

The first ad was an exercise equipment ad containing detailed scientific claim substantiation ($N=163$). The second ad was an exercise equipment ad containing lack of claim substantiation ($N=175$). The third ad was a diet pill ad containing detailed scientific claim substantiation ($N=154$). The fourth ad was a diet pill ad containing lack of claim substantiation ($N=173$).

Data Collection

Participants, who were sampled from a target population of college students, were recruited from several communication and psychology courses in a liberal arts college and two universities in the east coast of United States. The participants were recruited from college campuses because they were from the particularly vulnerable population for the body image related problems. College students are the target population for this study because they are highly conscious about their body images and thus consume various products and services for body improvement. A research group Anorexia Nervosa & Related Eating Disorders, Inc. reports that “one out of every four college-aged women uses unhealthy methods of weight control—including fasting, skipping meals, excessive exercise, laxative abuse, and self-induced vomiting” (Media Awareness Network, n.d.). Others (e.g., Alicke, Smith & Klotz, 1986) also confirm that eating disorders and body dissatisfaction occur more frequently in college-aged individuals.

The questionnaires were administered on-line, and the participants were randomly assigned to view one of four magazine advertisements during the process. In exchange for participation, they received extra credit. The total N of the participants for this study was 665. The participants visited the web address given to them and filled out the questionnaire. During the process, each participant was exposed to one version of the four available advertisements. The particular version of the ad that each participant was exposed to was randomly chosen by the web server, which resulted in four randomly assigned experimental groups with compatible numbers of samples in each condition.

Measurement

The measurements used in the model were tested using confirmatory factor analysis (CFA). Internal consistency and reliability were assessed using Cronbach’s standard score coefficient α . Afterward, AMOS was used to create SEM from the obtained data.

Product identification was coded through effect coding. The exercise equipment condition was coded as 1, while the diet pills condition was coded as -1 . The positive path

coefficient would indicate exercise equipment as having more influence on consequence variables. Presence of claim substantiation was also effect coded. The presence of substantiation in copy condition was coded as 1, while the vague, exaggerated-claiming with no substantiation condition was coded as -1. The positive path coefficient would indicate that the copy with substantiation having more influence on the consequence variables.

Perceived ad believability was measured by three item 7-point scale (1: *strongly disagree*, 7: *strongly agree*) asking questions like “I found the claim made in the advertisement to be believable.” The scale was highly reliable ($\alpha=0.93$). Perceived argument quality was measured by ten-item, 7 – point bipolar scale developed by Petty and Cacioppo (1986). The 10 endpoints were labeled with terms such as unconvincing/convincing, weak/strong, poorly constructed/well constructed. After appropriate reverse-coding, the ten-item scale resulted in very high reliability ($\alpha=0.95$).

The two attitude measures on A_{ad} and A_b were measured by the bipolar scale developed by Madden, Allen, and Twible (1988), containing ten items such as unpleasant/pleasant,” “unlikable/likable,” “boring/interesting,” and “bad/good. This scale is similar to those developed by Lutz, MacKenzie and Belch (1983), consisting of two 7-point scales, measuring 1) favorable/unfavorable, 2) interesting/uninteresting. However, the scale by Madden, Allen, and Twible (1988) contains more items to improve the reliability of the factor. The α for all ten A_{ad} items after appropriate reverse-coding was 0.94, whereas the α for all ten A_b items was 0.96.

Table 1. Descriptive statistics of manipulation check and dependent variables in the model.

	Mean	SD	Reliability (α)
Manipulation Check: Perceived Effectiveness			
Exercise Equipment	4.65	1.17	0.85
Diet Pills	2.95	1.60	0.90
Dependent Variables			
Perceived ad believability	2.98	1.46	0.93
Perceived argument quality	3.15	1.18	0.95
Attitude toward ad	3.27	1.10	0.94
Attitude toward brand	3.34	1.10	0.96

Results

The analysis consisted of two basic steps. As a first step, a series of manipulation checks were performed to determine the effectiveness of the experimental treatments. Following the manipulation checks, the subsequent step involved the testing of proposed model in Figure 1 using the AMOS.

Manipulation check

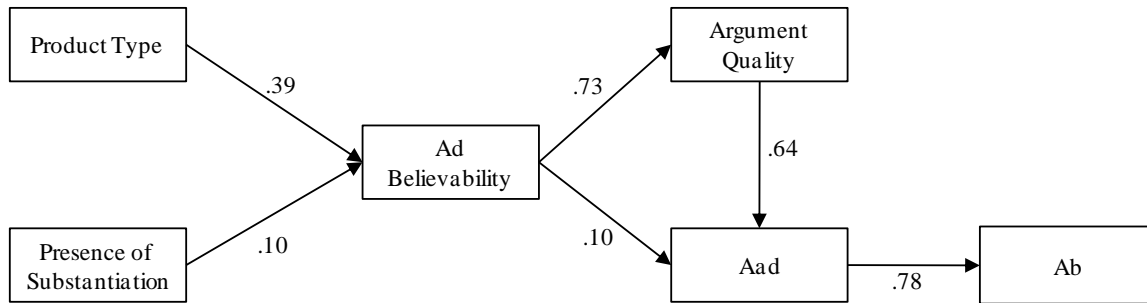
As a first step to ensure that the participants attended to the different product advertised in each advertisement during the experiment, they were asked to recall which product they saw in the ad. The choice categories were 1) running machine, 2) nutrition supplement, 3) weight training equipment, 4) protein shake, 5) stationary bicycle, and 6) diet pills. In both weight-training equipment and diet pill conditions, more than 95% of the participants correctly recalled the product advertised.

Additional manipulation checks were conducted to determine the extent to which the participants perceived the different characteristics of copy and the different products advertised in each of the four conditions, as intended by the author. To ensure that the participants perceived two product types differently, they were asked three questions regarding the effectiveness of the products they saw in the ads. The three items were (1) how effectively can this product improve your body? (1=ineffective, 7=effective); (2) if you used this product, would it improve your body? (1=strongly disagree, 7=strongly agree); and (3) how much would this product improve your body? (1=not much, 7=a lot). The α for the 3-item effectiveness scale was 0.91.

Testing of the proposed model

A root mean square error of approximation (RMSEA) of 0.05 or smaller with insignificant p value and insignificant chi-square (χ^2), along with other fit indices of .90 or higher are generally considered as acceptable model fit in SEM (Kline, 1998). However, as pointed out by Byrne (2009), when RMSEA is becoming close to expectations and chi-square testing is becoming unduly influenced by a large sample size, the other fit indices are becoming more important and valuable. Therefore, the fact that all other fit indices being .90 or higher in the tested model (Figure 1) indicates that this is a model with an acceptable fit (see Figure 2): RMSEA=0.07 (PCLOSE = .04), $\chi^2=39.85$, $df=9$, $p=.00$, goodness of fit (GFI)=0.98, and adjusted goodness of fit (AGFI)=0.96. Other baseline comparison fit indices also indicate a very acceptable fit: CFI=0.98, RFI=0.96, IFI=0.98, and TLI=0.98.

Figure 2. Result of proposed model testing.



- Product Type was effect-coded (exercise equipment: +1, diet pills: -1) so the positive path coefficient would indicate the more influence coming from exercise equipment condition.
- Presence of substantiation was effect-coded (presence of substantiation: +1, absence of substantiation: -1) so the positive path coefficient would indicate the more influence coming from presence of substantiation condition.
- Maximum Likelihood Estimation was utilized. Path coefficients are standardized beta weights (all paths were $p < .05$), $N = 665$, $\chi^2 = 39.85$, $df = 9$, $p = .00$, $RMSEA = 0.07$ ($PCLOSE = .04$), $GFI = 0.98$, $AGFI = 0.96$, $RFI = 0.96$, $IFI = 0.98$, $TLI = 0.97$, and $CFI = 0.93$

Analyses of individual paths

The results of model testing showed that all six hypotheses were supported with all significant paths ($p < .05$).

Ad believability. H1 and H2 predicted that easy to identify product category (e.g., exercise equipment) and advertisement with claim substantiation would more positively predict the perceived ad believability than a difficult-to-identify product category (e.g., diet pills) or the message without the claim substantiation.

Perceived ad believability was increased directly by product identification ($\beta = .39$). A positive beta (β) here indicated that when a product was what audiences could easily identify, it increased the perceived level of ad believability. Perceived ad believability was also increased when there was claim substantiation in the ad (presence of claim substantiation), but rather by a small margin ($\beta = .10$). These findings coincide with the findings by Chaiken and Maheswaran (1994), or Maheswaran, Mackie, and Chaiken (1992), all of which state that when a message is perceived to be clearer, it improves believability. Similarly, when a product in an advertisement is perceived to be more effective due to the nature of the advertised product type being easily identifiable, the message becomes easier to comprehend. Consequently, the ad itself will be perceived as less ambiguous and more believable. Moreover, when the message is becoming easier to comprehend due to the use of claim substantiation in the ad, it will also reduce ambiguity, boosting believability.

Argument quality. H3 predicted that perceived ad believability would positively predict perceived argument quality. Perceived argument quality increased with perceived ad believability by a large margin ($\beta = .73$), which indicated the importance of using clear and believable message to improve perceived argument quality.

Attitude toward ad. H4 predicted that perceived ad believability would positively predict attitude towards the ad (A_{ad}) while H5 stated that perceived argument quality would also positively predict attitude towards the ad (A_{ad}). The tested model (Figure 2) showed rather marginal influence of perceived ad believability on A_{ad} ($\beta = .10$). However, what applied the sizable influence directly on A_{ad} was the perceived argument quality ($\beta = .64$), indicating that the influence of ad believability on A_{ad} was actually being mediated by the perceived argument quality.

Attitude toward brand. H6 predicted that A_{ad} would positively predict A_b . Consistent with other theories, as predicted, A_b increased with A_{ad} ($\beta = .78$).

Post-hoc analyses

Even though the model did not hypothesize direct effects from the two exogenous variables (product type and presence of substantiation) on such outcome variables as A_{ad} and A_b , an additional model was constructed to test this possibility. The resulting model did not show significant direct effects of product type and substantiation on A_{ad} and A_b . Instead, these findings indicate that the effects of product type and substantiation were mediated through the perceived ad believability and argument quality.

Conclusion

Model summary

In summary, the presence of claim substantiation in the body copy, as well as the type of product shown in the ad, determine the level of believability individuals perceive in the ad. Importantly, the type of product shown in the ad strongly influences the level of perceived believability. When the advertised product is exercise equipment, audiences can easily identify what it is. Consequently, they perceive the advertisement to be more believable than when the advertised product is a diet pill. When the claim substantiation in the body copy is utilized, the audiences also perceive the message to be more believable. Overall, it is the exercise equipment ad with claim substantiation that is perceived to be most believable and effective.

The increased level of believability that audiences perceive from the advertised message increase perceived argument quality, and this creates a more favorable attitude toward the ad. Therefore, the advertisement for exercise equipment-type product yields the highest level of attitude change simply due to its product nature. Moreover, if one desires to further increase the attitude change among the target audiences (or if the advertised product is perceived to be less legitimate, in a case of diet pills), then detailed and scientific claim substantiation *must* be used in the advertised message. Finally, the message must be perceived as believable to influence attitude change. If, for example, one desires to create a positive attitude toward the ad as the ultimate objective of an advertising campaign, it is necessary to instill high quality arguments by utilizing a highly believable and clear message – this becomes especially true if the product in the advertisement is perceived to be less legitimate or perceived to be less effective by its nature.

Major findings, implications and future study

This study contains several major findings and important implications for both academics and practitioners interested in advertising and body image.

In terms of the advertising message process, this study reconfirms the importance of perceived message believability and argument quality in creating a favorable attitude toward the advertisement and the advertised brand. More importantly, the results of this study suggest the importance of providing specific and scientific substantiation for the claim to the audiences to generate stronger attitude change. This becomes even more important when one is trying to advertise product categories like diet pills. The nature of the product being difficult to identify will result in a lower level of believability and argument quality than would be the case for a different, easy to identify products like exercise equipment. Still, the type of product in the ad plays a more important role than the presence of substantiation in body copy. Also, this study reveals the fact that when a product in an advertisement is perceived to be effective simply based on its product category, it can lead to a higher level of believability, regardless of the use of substantiation.

Thus, the findings in this study provide very valuable practical implications for the advertisers who may be in the process of developing advertising campaigns for body improvement products or services. Of course, some may argue that the results from the findings are nothing but common sense: people trust exercise equipment better than diet pills. However, this study provides *hard evidence* of the effects of product identification that has not been confirmed through an empirical testing, targeting a specific industry: body improvement industry. Moreover, unlike any previous studies, this study shows how the product identification functions with the effects of having or not having claim substantiations in generating an attitude change. Learning from this study, the advertisers will be able to develop more effective campaigns that can generate larger impacts in audiences' information processing and their subsequent attitude change. Yet, some may argue that the findings from this study do nothing but provide more ammunition to those advertisers who may be trying to "manipulate" the audiences to purchase their products or services. However, this study actually brings an ethical implication that benefits both advertisers and consumers.

As mentioned at the beginning, people are getting more conscious of how their bodies look, and people are spending more and more money to purchase different types of body-improving products and services. As a result, there are more products and services available than ever before, all of which promise body improvement. People are consequently dealing with a flood of advertisements for those products/services. A problem is that many of those advertisements might be viewed as questionable at best, or even as deceptive, using vague, exaggerated claims with no apparent substantiations. If advertisers implement the knowledge provided by this study, then they should make a more conscious effort to create messages with strong and clear substantiations for the claims. It becomes especially important if they are trying to advertise a product that might be viewed as "too good to be true", like diet pills. By doing so, the practice of utilizing deception and puffery will become less necessary. Thus, the audiences will have better opportunities to evaluate the messages by evaluate the quality of substantiations

present in the messages, and ultimately make the right decisions for themselves without being deceived.

What if advertisers are trying to advertise products that may be viewed as more legitimate or effective by its nature, like exercise equipment? The findings suggest that those advertisers can afford to focus more on the creative aspects of advertising campaign without concerning too much about using detailed body copy to establish message believability and argument quality. Thus, audiences will be able to enjoy more creative, visually pleasing advertising messages and still make the right choices for themselves.

Despite the findings, this study suffers from one particular limitation, which is the quality of advertisements used as manipulation. The advertisements used in the study were not of a professional, production quality that the participants were accustomed to. The manipulated advertisements needed to be produced to maintain consistency among them and to eliminate the effects of other confounding variables, all of which contributed to the lower visual quality of the advertisements. Thus, utilizing manipulated ads that did not fully resemble the actual advertisements participants were typically exposed to in reality may have caused a lower level of external validity. However, the main focus of this study was *not* to examine the impacts of creative execution. Rather, the focus was to examine the impacts of product category and substantiation in the ad. Therefore, even though the manipulated ads were not of real-world, professional quality, the participants were able to notice the advertised products and were able to evaluate the body copy. Therefore, this limitation should not have produced a significant confounding effect on the dependent variable measures.

One may criticize the use of general college student sample instead of using only those who were interested in body improvement (i.e., the actual target of those body improvement advertising). S/he can, therefore, argue that the sample characteristics may have introduced an unwanted bias to the results. However, as pointed out earlier, college student population *in general* is a highly vulnerable to the body image related problems and they are part of a consumer culture familiar with the conventions of magazine advertisements. Moreover, those body improvement product/service ads are found from various media contents such as prime time TV, cable TV, various types of magazines, and various radio stations in different formats. Therefore, it is highly unlikely that only those who are particularly interested in body improvement are being exposed to these types of ads. In fact, many who are not particularly looking for a body improvement products may become interested in particular product/services as a result of advertising exposure. Therefore, the use of general college student sample regardless of their current intention for weight loss and body improvement may not have cause a significant bias toward result. Rather, it may have actually increased the external validity of this experimental study.

For the future study, it is noted that the product identification and the claim substantiation in body copy are just two of the many elements in advertising message structure. Moreover, the existing knowledge level of intended target audiences and their level of motivation may play a critical role on the message process, as suggested by the persuasion knowledge model (Friestad and Wright 1994). Therefore, further investigation should be conducted to incorporate other known and important variable (e.g., level of existing product knowledge, level of involvement in

body image, and level of motivation for improvement) in advertising message processing to examine the ways they impact how advertising messages are processed. Moreover, there is another variable like purchase intention that can be used as outcome variable that measures advertising message effectiveness. Incorporation of the purchase intention outcome variable in the model will enable to further aid our understanding on how the use of product identification and substantiation influence advertising message process.

References

- Alicke, M. D., Smith, R. H., & Klotz, M. (1986). M.L. Judgments of physical attractiveness: The role of faces and bodies. *Personality and Social Psychology Bulletin*, 12, 381 – 389.
- Batra, R., & Ray, M. L. (1985). How advertising works at contact. In L.F. Alwitt, & A.A. Mitchell (Eds), *Psychological processes and advertising effects*(pp. 13 – 37). Hillsdale, NJ: Lawrence Erlbaum.
- Bishop, R. C. (1997). Promoting the thinness ideal: Perceptions of diet product advertising (Doctoral dissertation, Temple University, 1997). *Dissertation Abstracts International*, 58, 621.
- Brunel, F. F., & Nelson, M. R. (2003). Message order effects and gender differences in advertising persuasion. *Journal of Advertising Research*, 43, 330 – 341.
- Byrne, B. M. (2009). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). New York: Routledge/Taylor & Francis.
- Chaiken, S., & Maheswaran, D. (1994). Heuristic processing can bias systematic processing: Effects of source credibility, argument ambiguity, and task importance on attitude judgment. *Journal of Personality and Social Psychology*, 66, 460 – 473.
- Cox, D. S., & Locander, W. B. (1987). Product novelty: Does it moderate the relationship between ad attitudes and brand attitudes. *Journal of Advertising*, 16, 39 – 44.
- Droge, C. (1989). Shaping the route to attitude change: Central versus peripheral processing through comparative versus noncomparative advertising. *Journal of Marketing Research*, 26, 193 – 204.
- Eagly, A. H., & Chaiken, S.(1993). *The psychology of attitudes*. Orlando, FL: Harcourt Brace Jovanovich College Publishers.
- Friestad, M., &Wright, P. (1994). The persuasion knowledge model: How people cope with persuasion attempts. *Journal of Consumer Research*, 21, 1 – 31.
- Gardner, M. P. (1985). Does attitude toward the ad affect brand attitude under a brand evaluation set. *Journal of Marketing Research*, 22, 192 – 198.
- Hamilton, M. A., & Mineo, P. J. (1996). Personality and persuasibility: Developing a multidimensional mode of belief systems. *World Communication*, 24, 1 – 16.
- Heath, T. B., & Graeth, G. J. (1994). Theory and method in the study of ad and brand attitudes: Toward a systematic model. In E.M. Clark, T.C. Brock, & D.W. Stewart (Eds), *Attention, Attitude and Affect in Response to Advertising* (pp.125-148). Hillsdale, NJ: Lawrence Erlbaum.

- Kavanoor, S., Grewal, D., & Blodgett, J. (1997). Ads promoting OTC medications: The effect of ad format and credibility on beliefs, attitudes, and purchase intentions. *Journal of Business Research*, 40, 219 – 227.
- Kline, R.B. (1998). *Principles and practice of structural equation modeling*. New York: Guilford Press.
- Krugman, D. M., Cameronn G. T., & McKearney, C. (1995). Visual attention to programming and commercials: The use of in-home observations. *Journal of Advertising*, 24, 1 – 12.
- Liu, S. S., & Stout, P. A. (1987). Effects of message modality and appeal on advertising acceptance. *Psychology and Marketing*, 4, 167 – 187.
- Lutz, R. J. (1985). Affective and cognitive antecedents of attitude toward the ad: a conceptual framework. In L. F. Alwitt, & A. A. Mitchell (Eds.), *Psychological processes and advertising effects* (pp.45 – 63). Hillsdale, NJ: Laurence Erlbrum Associates.
- Lutz, R. J., MacKenzie, S. B., & Belch, G. E. (1983). Attitude toward the ad as a mediator of advertising effectiveness: Determinants and consequences. In R. P. Bagozzi, & A. M. Tybout (Eds.), *Advances in consumer research* (Vol. 10, pp. 532 – 539). San Francisco, CA: Association for Consumer Research.
- Maheswaran, D., Mackie, D. M., & Chaiken, S. (1992). Brand name as a heuristic cue: The effects of task importance and expectancy confirmation on consumer judgment. *Journal of Consumer Psychology*, 1, 317 – 336.
- Machleit, K. A., & Wilson, R. D. (1988). Emotional feelings and attitude toward the advertisement. *Journal of Advertising*, 17, 27 – 35.
- MacKenzie, S. B., & Lutz, R. J. (1989). An empirical examination of the structural antecedents of attitude toward to ad in an advertising pretesting context. *Journal of Marketing*, 53, 48 – 65.
- MacKenzie, S. B., Lutz, R. J., & Belch, G. E. (1986). The role of attitude toward the ad as a mediator of advertising effectiveness: A test of competing explanations. *Journal of Marketing Research*, 23, 130 – 143.
- Madden, T. J., Allen, C. T., & Twible, J. L. (1988) Attitude toward the ad: An assessment of diverse measurement indices under different processing “sets.” *Journal of Marketing Research*. 25, 242 – 252.
- McGuire, W. J. (1968). The nature of attitudes and attitude change. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (2nd Ed., Vol. 3, pp. 136-314). Reading, MA: Addison-Wesley.

- McGuire, W. J. (1985). Attitudes and attitude change. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (3rd Ed., Vol. 2, pp. 233-346). New York: Random House.
- Media Awareness Network (n.d.). Beauty and Body Image in the Media. Retrieved September 12, 2009, from http://www.media-awareness.ca/english/issues/stereotyping/women_and_girls/women_beauty.cfm
- Mitchell, A. A., & Olson, J. C. (1981). Are product attribute beliefs the only mediator of advertising effects on brand attitudes? *Journal of Marketing Research*, 18, 318 – 332.
- Moore, D. L., & Hutchinson, J. W. (1985). The influence of affective reactions to advertising: Direct and indirect mechanisms of attitude change. In L. F. Alwitt & A. A. Mitchell (Eds.), *Psychological processes and advertising effects* (pp.65-87). Hillsdale, NJ: Laurence Erlbrum Associates.
- Petty, R. E., & Cacioppo, J. (1986). *Communication and persuasion: central and peripheral routes to attitude change*. New York: Springer/Verlag.
- PRWeb. (2005, March 23). U.S. weight loss market worth \$46.3 billion in 2004- Forecast to reach \$61 billion by 2008. Retrieved September 24, 2009, from <http://www.prweb.com/releases/2005/03/prweb221062.htm>
- Stewart, D. W., & Furse, D. H. (1986). *Effective TV advertising: A study of 1,000 commercials*. Lexington, MA: Lexington.

Appendix 1. Presence vs. absence of claim substantiation in Exercise Equipment conditions

Substantiation used in the body copy:

Take, for example, a 200-pound man with 25% body fat. By beginning an effective strength training program, he can reduce his body weight by burning up the fat through exercising. Consequently, along with the lost weight, his strength, muscle tone, and metabolism will improve, giving him a firmer, more fit appearance.

PowerStation Cross Trainer is going to help you to achieve your goal through strength training.

The Cross Trainer is the only strength system that provides the stability of health club leverage equipments, the speed of selectorized machines and the proven function and performance of dumbbells. It combines the best health club equipment into one compact, serious strength system.

Version without substantiation that used typically found exaggerated claims in bullet-pointed format:

- *PowerStation is the world's best weight training machine*
- *Why? Because it is the heaviest, yet most compact and easiest to use quick change weight machine.*
- *Thus, it is the most effective and versatile training equipment.*
- *Just 30-minute workouts, three times a week will give you the body you always wanted.*

Appendix 2. Presence vs. absence of claim substantiation in Diet Pills conditions

Substantiation used in the body copy:

Leptin leapt into the headlines in 2001, when it was shown to be a protein that promoted the destruction of fat. And Leptin is now available as the most effective fat-burning formula."

The key finding is that Leptin acts differently in cells of overweight people than in those of thin people, says Dr. Roger Unger, at the University of Texas Southwestern Medical Center.

"In skinny people, Leptin causes fat to burn up, but nothing of the sort happens in overweight person's fat cell. When a person gets overweight, his fat cells have resistance to the action of their own Leptin. If the fat cells were no longer resistant, they would burn up fat the way they do in a normal person."

But by taking Laptin based formula, the cells that normally store fat suddenly loose the resistant to Leptin and becomes fat-burning cells.

Consequently, you can lose a lot of weight in as short as just two weeks.

The version without substantiation that used typically found exaggerated claims in bullet-pointed format:

- *It will help you to burn up the fat fast*
- *It will control your appetite so you will be losing weight faster*
- *It will increase your energy*
- *It targets trouble areas (i.e. Buttocks, thighs, love handles)*
- *It will boost your metabolism*
- *It is extremely fast acting so you can get the result fast*
- *Maximum strength, just one capsule a day*

Appendix 3. Correlation Matrix of All Variables in the Model.

	1	2	3	4	5	6
	<i>n</i> = 665					
1. Product Type	-	.01	.39*	.24*	.26*	.29*
2. Claim substantiation		-	.11*	.07	-.01	-.00
3. Ad Believability			-	.73*	.57*	.52*
4. Argument Quality				-	.71*	.61*
5. Attitude toward Ad					-	.78*
6. Attitude toward Brand						-

Note. *Correlation is significant at $p < .05$ level