

SHUT-UP I DON'T CARE: UNDERSTANDING THE ROLE OF RELEVANCE AND INTERACTIVITY ON CUSTOMER ATTITUDES TOWARD REPETITIVE ONLINE ADVERTISING

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ABSTRACT

Many streams of research have shown that familiarity influences positive attitudes. Such research streams have driven marketing strategies with the explicit goal of exposing potential customers to repeated stimuli, specifically to advertisements. These marketing strategies have been employed in many contexts, including online. This research paper argues that the online environment, being far richer than traditional means of conveyance, has a different constellation of constructs affecting attitudes. Due to this richness, simply applying the principle of repetition does not make logical sense. Further, this research hopes to extend the traditional view of advertising to the online environment by proposing two additional constructs, other than repetition, that influence attitudes of advertisements. These two factors are personal relevance and interactivity. To explore this idea, two empirical studies are undertaken to test the relationships between interactivity, personal relevance and attitudes. The first is a survey study (N=97), and the second employs a laboratory experiment (N=118). Results support that advertisement interactivity significantly affects attitudes toward the online ads, the website, and the product featured in the advertisement. Personal relevance was also shown to significantly affect attitude toward the ad in both studies.

Keywords: eCommerce, familiarity, interactivity, online advertising, personal relevance

1. Introduction

Any typical interaction with a web site, whether it is purchasing a sofa, reading the news, or even returning a web based email, will have a visible and sometimes ostentatious advertisement. No matter how much time, effort, or money is spent on keeping advertisements at bay, they just keep coming because advertisers believe repetition is the key to selling goods and services. What do advertisers and their clients get out of this typical online dissemination strategy? And is repetition the only factor that is important in such a context? Or are there more effective means to advertise online? This research addresses the above questions.

The Theory of Reasoned Action [Ajzen & Fishbein 1980] shows that attitude has a strong relationship with predicting behavior, meaning that understanding the impact of online advertising on a user's attitudes has many implications for consumer behavior [e.g., Fishbein & Middlestadt 1995; Herr 1995; Olson & Zanna 1993]. Attitude formation has also been shown to be influenced by constant repetition of advertising messages [Cacioppo & Petty 1989; Festinger 1954; Festinger et al. 1950; Garcia-Marques & Mackie 2001; Kunst-Wilson & Zajonc 1980; Miller 1976; Zajonc 1968]. Marketers have been using repetition with many different forms of media (e.g., radio and television commercials, billboards, magazine ads, and telemarketing). Based on these past successes, marketers have tried to use similar techniques in online advertising. These techniques include pop-up/down ads (commercials), banner ads (billboards), and unsolicited emails (telemarketing).

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However, past research has shown that the Internet is a very different medium due to its interactive nature and higher level of control of the media [Liu & Shrum 2002; Rayport & Jaworski 2003]. Also, little is known about how online factors influence Internet users' attitudes toward online advertising. Yet marketers repeatedly expose Internet users with the same techniques. In this paper, we investigate both the influence advertisement interactivity and personal relevance has on a user's attitudes. These two factors are intuitively important to understand in the context of online advertising because both are directly related to the differences that have been found between online advertising compared to offline. These specific differences are the level of control a user has over the environment and the one-to-one interaction that is possible online [Liu & Shrum 2002].

The goals of this paper will be forwarded by the following: First, a review of classic theory is presented that supports the idea that repeated exposure of stimuli results in positive attitude formation. Second, contemporary research that suggests such is not the case with online media will be summarized. Justifications for the hypothesis are also presented. Third, the methodological approach for hypothesis testing is outlined, which consists of a survey and laboratory experiment. Finally, practical and theoretical implications, limitations of this research, and future research will be discussed in light of the findings.

2. Reviewing the Role of Repetition and Familiarity on Attitudes

Does familiarity breed liking, or in the case of this research, positive attitudes? Some classical theories support the view that answers "yes". Here we will summarize two of these theories, the Mere Exposure Theory and the Proximity Effect.

Mere Exposure Theory posits that the more exposure one has to a stimulus, the more he/she will tend to like it. One study found that the more exposure to Chinese characters people experienced, the more positive meaning they assigned to those symbols [Zajonc 1968]. A related research study indicates that showing people posters about stopping foreign aid persuaded most people while using only moderate amounts of exposure. However, in this same study, there was a point of diminishing return. After 200 views, participants began to react negatively to the poster [Miller 1976]. A third study showed that participants shape their attitudes very quickly (1 ms). This study indicated that, even though participants were unable to identify the shape later, their positive attitude toward the shape increased even with such a short exposure time [Kunst-Wilson & Zajonc 1980].

The Proximity Effect supports the notion that the more interaction one has with others; the more likely he/she is to become friends with that person. A common study cited for this effect followed people who resided in a two-floor apartment building. This study found that neighbors were more likely to be friends, and that people on separate floors were less likely to be friends. However, people who lived in residences near the ground-floor staircases and mailboxes had friends on both floors [Festinger 1954; Festinger et al. 1950]. Current research has reiterated the Proximity Effect by investigating and confirming the effect of exposure familiarity and exposure on attitude. These studies show that message familiarity by repetition was more persuasive than less repeated messages [Cacioppo & Petty 1989; Garcia-Marques & Mackie 2001].

Based on these seminal theories, online advertising practitioners would be well advised to bombard internet users with ads. Such a strategy would be based on the understanding that the more one is exposed to online advertising the more likely they are to form a positive attitude toward that advertisement. According to this theoretical perspective, by repeated exposure through advertising, viewers (potential consumers) gradually would start to develop positive assessments of the product without ever experiencing it. However, here we investigate possible boundaries to this theoretical viewpoint in an *online* advertising context. This study posits two factors that influence consumers' attitudes with repetitive online advertisements, personal relevance and interactivity.

3. Understanding Advertising in an Online Context

Marketers have oft argued that a positive or negative reputation in advertising does not necessarily shape a consumer's attitude. Rather repetition directly affects the process of forming opinions [Katz 1987]. Recent research has found that repetition and familiarity may not be the only key variables in persuasion or attitude formation [Claypool et al. 2004; Garcia-Marques & Mackie 2001] especially in an online context [Fortin & Dholakia 2005]. However, further research is needed to understand how advertising techniques affect reaction in this new online context. We posit that two factors will be of great importance with repetitive online advertising strategies, *personal relevance* of the ad and the level of *interactivity* of the ad. These two factors have been identified as important by recent research regarding online advertising, but no research has explicitly studied these factors and their interactions [Liu & Shrum 2002].

Liu and Shrum [2002] have looked at some differences in advertising properties between the contexts of the internet and other traditional media. Liu and Shrum [2002] found three main differences: the level of active control, the level of two-way communication, and the level of synchronicity in an online context. These differences

accentuate a user's interests in online interaction. Specifically, the higher level of active control and the ability to have two-way communication is much different than any other type of media. As a result, a user's interests and *personal relevance* in online content are of much greater influence in a user's interactions online compared to other types of media (e.g., television or radio). Therefore, as the online environment has shown to be different in fundamental ways, it is important that researchers examine the factors that influence a user's perceptions of online advertisements.

4. Justification for Hypotheses

The above literature review brings to light two important variables that seem to affect attitude formation and online perceptions: personal relevance and interactivity. Hence, these two factors are posited in this paper to be driving influences in attitude formation with repetitive online ads (see *Figure 1* below). Specifically, personal relevance and interactivity have a direct main effect on: 1) attitudes toward the advertisement, 2) attitudes toward the website and, 3) attitudes toward the product.

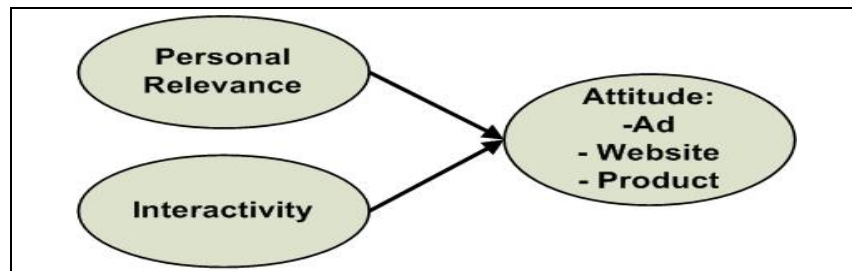


Figure 1: Proposed research model under conditions of ad repetition

5. Personal Relevance

Personal relevance in an attitude object is “the extent that consumers perceive [the object] to be self-related or in some way instrumental in achieving their personal goals and values” [Celsi & Olson 1988]. Personal relevance is the essential characteristic for involvement which has commonly been used in attitude research [Petty & Cacioppo 1981; Zaichkowsky 1985], and research regarding argument-based persuasion [Claypool et al. 2004; Petty et al. 1981].

Personal relevance has been shown to have direct and indirect effects on attitude. While direct effects on attitude have been shown, moderating effects of personal relevance are also evident [Liberian & Chaiken 1996]. Liberman and Chaiken [1996] showed how high levels of personal relevance increased attitude while low levels had the opposite effect. Claypool et al. [2004] studied the effect of personal relevance, repetition, and argument strength on attitude change. They found that message repetition increased attitude change in low relevant and weak arguments, and also high relevant and strong arguments. However, attitude change was found to be negative (opposite than intended) for high relevant weak arguments, and decreased with low relevant strong arguments.

Claypool's study found that personal relevance coupled with message repetition also impacts the way individual's process information. More specifically, when individuals were shown messages that were relevant, their positive disposition to the message increased with every repeated message. On the other hand, when the subjects were shown messages repeatedly that were not personally relevant, their attitude toward the message decreased with every iteration of the message [Cacioppo & Petty 1989; Garcia-Marques & Mackie 2001; Rieh 2002]. This research has shown that personal relevance can impact the way individuals interpret or perceive stimuli even in the presence of other information.

The increased control inherent in an online environment brings added importance to the role personal relevance in online advertising [Liu & Shrum 2002; Rayport & Jaworski 2003]. This is due to ability of advertisers to manipulate the online environment to create interruptions such as a “slide-in” or “pop-up” advertisement. Unlike the Internet, many other forms of media can only be used in a structured way. When reading a newspaper or a magazine, there is little ability for the media to distract or interrupt the consumer. Therefore, advertisements perceived as less personally relevant, online, will serve more as interruptions than objects of high importance. On the other hand, advertisements perceived as highly personally relevant will serve more as tools or features that enable a user to bring about their intentions.

H1a: For a repetitive online advertisement, a user's attitude toward the ad is positively affected by the level of personal relevance in the advertisement.

H1b: For repetitive online advertisements, a user's attitude toward the advertised product is

positively affected by the level of personal relevance in the advertisements.

H1c: In situations of repetitive online advertising, a user's attitude toward a website is positively affected by the level of personal relevance in the advertisements.

6. Online Interactivity

In addition to personal relevance, recent IS research has shown that interactivity does affect perceptions of online advertising [Coyle & Thorson 2001; Fortin & Dholakia 2005; Jiang & Benbasat 2003; Liu & Shrum 2002]. However, few in this stream of research have empirically tested the effects of interactivity in such contexts. Of the limited empirical evidence dealing with the effects of interactivity, past research has shown a direct effect on attitudes toward websites [Coyle & Thorson 2001; Johnson et al. 2006; Peng et al. 2004]. Interestingly, Peng et al. [2004] found that interactivity was the largest predictor of attitude toward a website.

There are many different definitions and conceptualizations for interactivity [Heeter 1989; Hoffman & Novak 1996; Lee 2005; Newhagen & Rafaeli 1996; Rafaeli 1988; Rogers 1986; Steuer 1992]. Steuer [1992] defines interactivity as "the extent to which users can participate in modifying the form and content of a mediated environment in real time." Interactivity in this light is seen as multi-dimensional in that it consists of three factors: 1) speed – the rate in which content can be manipulated 2) range – ability of content to be manipulated 3) mapping – the similarity between the controls and how the content is manipulated. Because of these three dimensions, an online advertisement can have varying levels of interactivity. An advertisement can be slow or fast in its exposure (speed), dynamic or static (range), or intuitive or unintuitive (mapping) in its interaction with the user [Oliver et al. 1997]. Such differences influence the experience and attitude formed from exposure to different types of online ads.

The online environment has been shown to be more interactive and have greater capability, compared to traditional media, to encourage one-on-one interaction [Liu & Shrum 2002; Rayport & Jaworski 2003]. This ability of web interfaces to be manipulated by users provides high potential for interaction. Interaction in an online context requires active participation on the user's part. Unlike traditional media (e.g., television and radio), internet advertising is not displayed through a media that encourages passive exposure. As internet advertising is developed with higher levels of interactivity to match the interactivity inherent in an online context the advertisement becomes more suited for the experience the user has on the internet. Therefore, the level of interactivity is expected to affect the ability of a user to interact in the online environment and consequently the user's attitude toward various aspects of the online environment.

H2a: For repetitive online advertisements, the perceived level of interactivity in online ads positively affects a user's attitudes toward the ads.

H2b: For repetitive online advertisements, the perceived level of interactivity in online ads positively affects a user's attitudes toward the products featured in the ads.

H2c: For repetitive online advertisements, the perceived level of interactivity in online ads positively affects a user's attitudes toward the website.

7. Methodology

In order to test these hypotheses, two different studies using different methods were conducted. In the first study, survey methods were employed to examine the hypotheses with a generalizable sample. The second study used a laboratory experiment, which allowed for isolation of the effects of interest. The analysis of these studies was conducted using structural equation modeling (SEM) with AMOS 4.0 to test these hypotheses and the fit of these research models.

7.1. Study 1

Study 1 was conducted with a 2 (relevant vs. not relevant) × 2 (high/low interactivity) factorial design. The purpose of the methodology was to create variance in the experience of the participants. Repetition was kept constant using a set task that was given to the participants in an online task sheet (see *Appendix A*).

7.2. Participants

A snowball sampling technique was used to recruit participants for this study. A snowball sample is a chain-referral sampling methods that originated with Coleman [1958]. This sampling technique uses a convenience sample of participants as seeds. These seeds recruit subjects based on a set of criteria to participate. This way many different networks are tapped. The sample group appears to grow like a rolling snowball. This methodology is commonly used in market research [e.g., Mick 1996]. Some other common labels used for snowball sampling are link-tracing sampling and random-walk sampling [Hedman & Sharafi 2004].

A core group of students in an introductory distance degree (online) IS course was selected due to the diverse types of backgrounds in such classes. This core group of participants was given an incentive (extra credit worth approximately 1 % of the final grade) to recruit other non-student participants. Each student was instructed to solicit

four individuals who were of diverse backgrounds and who use the internet for online purchases. Those who were recruited were not solicited to recruit others (the chain only went one link).

One hundred and thirty seven individuals (including the seed sample of students) participated in this survey. All survey members reported to have used the internet for eCommerce purposes. The minimum age reported was 13 and the maximum was 62. The average age was 33.38. 51 of the subjects (37.23 %) were male. After deleting all seed subjects², the sample was reduced to 97. The average age was 34.37, and 32 of the subjects (32.65 %) were male.

An a priori power analysis considered this sample to be adequate for testing this research model. The power analysis for this model is fairly uncomplicated as there are only three constructs represented by three items each. Therefore, having approximately 100 participants satisfies the need of a minimum of five participants per estimated parameter in structural equation modeling [Kline 2005].

7.3. Task

Each of the participants was given a URL to a website of a fictitious travel agent company. A travel agency was chosen to reduce the novelty the subjects could experience with this type of task, which was browsing and buying a vacation. Upon reaching the website, the participants were randomly assigned to one of the four experimental conditions (high/low personal relevance and high/low interactivity) as seen in *Figure 2* below. Each condition was associated with a task sheet (see sample task sheet in *Appendix A*) for a search and purchase task. Throughout the task, each page contained an advertisement related to their experimental condition. The task ensured that each participant was exposed to the advertisement a minimum of four times.

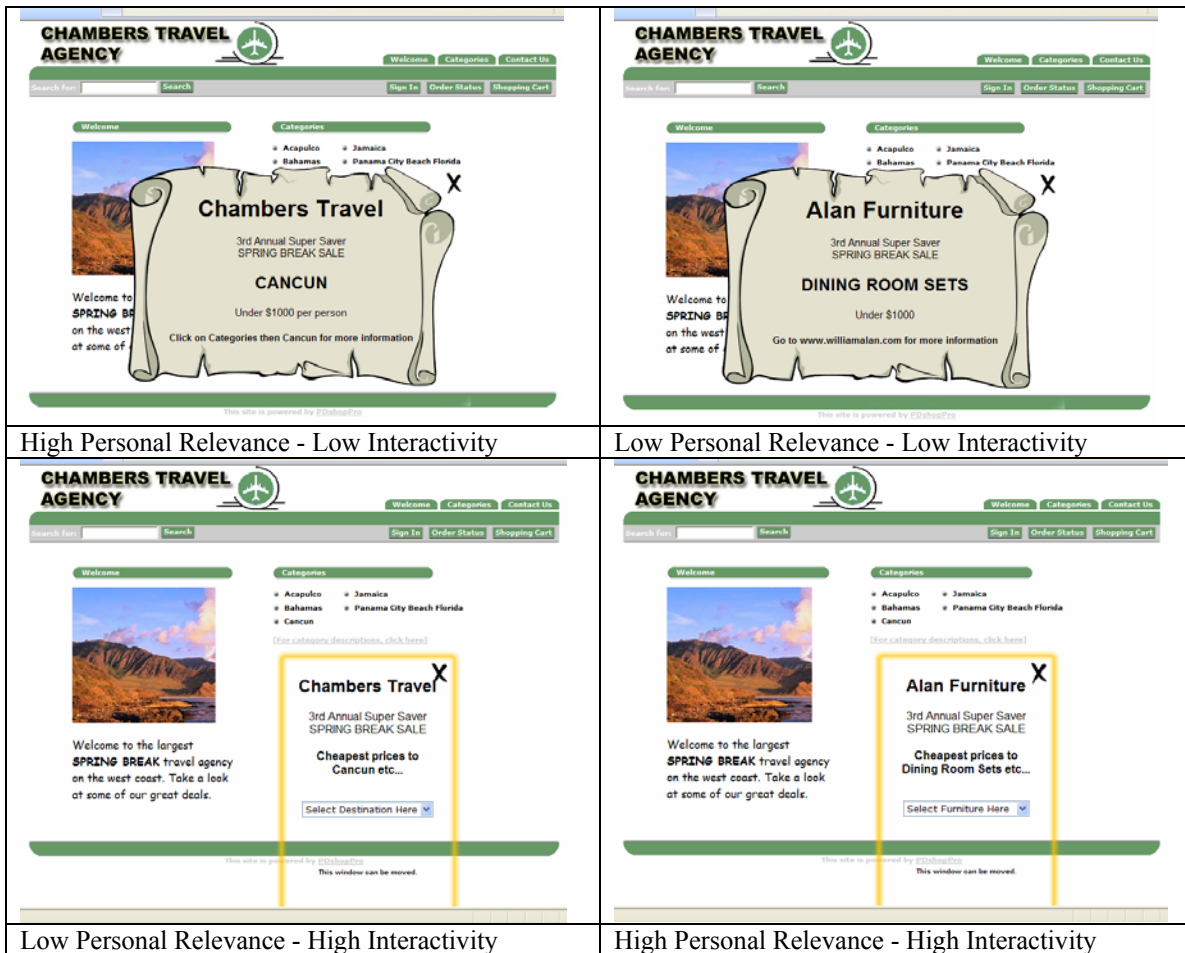


Figure 2: Screen shots of the homepage for each of the experimental conditions

² Snowball samples are not considered to be truly random samples without bias [Heckathorn 1997 & 2002; Salganik & Heckathorn 2004]. However, the inclusion of the seed sample of students biases the sample further. For that reason, the data used to test the hypotheses did not include the seed sample of students. Note also that the data was analyzed that included the seed subjects in the sample (N=137) and convergent results were obtained.

7.4. Variance Manipulations: Personal Relevance and Interactivity

Those participants assigned to the low personal relevance condition received ads regarding a furniture store on the vacation site. Those randomly assigned to the high personal relevance condition received ads for the best deal for the exact type of vacation the task asks them to find. The advisements within the vacation websites were “slide-ins”. These types of ads were embedded in the web page but were created using layers so the ad appears to overlay the content of the webpage. This layout approach was used so the ad would not be affected by pop-up blockers.

The high vs. low conditions of interactivity were based on the three dimensions of interactivity (i.e., speed, range, and mapping). Screen shots of these ads can be found in *Figure 2* and in *Appendix B*. High interactivity was operationalized as by being out of the way (range), transparent (range), fast (speed), movable (range), and having no download delay on clicking the close “X” (speed/mapping). Low interactivity was operationalized by having the ad be oblique (range), slow (speed), non-movable (range), covering the content of the website (range), and a 3 second download delay on clicking the close “X” (speed/mapping). Therefore, the high manipulation has incorporated high levels of speed, range, and mapping, and the low manipulation has low levels of speed, range, and mapping dimensions.

The selection of the use of the “pop-up” type of advertisement was motivated by two reasons. First, this type of ad is one that can be manipulated on all dimensions of interactivity. Second, these types of ads incorporate characteristics of many different ads. For example, a banner ad cannot represent the effects of a pop-up ad, but the pop-up ad can be placed in an area of a webpage similar to a banner ad.

7.5. Analysis

The items used to measure the constructs of interest were adapted from measures used in previous related research. The items can be seen in *Appendix C*. For the three attitude objects (website, ad, and product), attitude was measured with items adapted from [Kempf & Smith 1998]. Kempf and Smith [1998] developed these measures to assess the influence of advertising on product trials. Like stems and items are used for the measurement of attitudes toward the website and advertisements, however, differing items were used to measure attitudes toward the product as developed by Kempf and Smith [1998]. Perceived interactivity was measured with three items obtained from [Loiacono et al. 2002]. These items were developed as part of a larger instrument measuring various website characteristics. Using three separate samples, Loiacono and colleagues identified many different aspects of website quality, and developed survey items to measure these website characteristics. Here we use the survey items developed by Loiacono and colleagues to measure website interactivity. Personal relevance of the advertisements was measured with items adapted from [Bures et al. 2002]. These items were originally used to measure the personal relevance of scholastic content to students. Here we adapted these items to focus on the content of the advertisements used in this study. The following assessment of the psychometric properties for these items shows that they are valid and reliable.

7.6. Measurement Model

For the purposes of fit testing, the Comparative Fit Index (CFI), the Root-Mean-Square Error of Approximation (RMSEA), the Goodness-of-Fit-Index (GFI), and the Adjusted-Goodness-of-Fit-Index (AGFI) is used. The criteria used to evaluate model fit are that CFI values must be .95 or higher, and the RMSEA values must be .08 or lower with the high confidence interval not exceeding .10 [Hu & Bentler 1999]. The GFI should be greater than .90, and the AGFI should be above .80 and not more than .1 difference than the GFI [Hu & Bentler 1995]. The measurement model below (see *Table 1*) can be compared to the above thresholds. The fit of this model, which contains all of the different dependant variables of interest, is lower than recommended. For assessment of the measurement instrument this is justifiable considering all three exogenous variables are represented in this model, which is not intended for hypothesis testing³. The assessment of the structural models below is used to determine if exclusion of one or more of the exogenous variables would result in better fit to the data.

7.7. Reliability

The reliability analysis for these constructs was done using the Cronbach alpha and the Composite reliabilities⁴ [Werts et al. 1974]. The following are the Cronbach alpha values for the constructs of interest: Attitude toward the Ad (Att_Ad) – alpha 0.990, Attitude toward the Website (Att_W) – alpha 0.960, Attitude toward the product (Att_P)

³ As the measurement model should represent the highest possible level of fit compared to any possible structural model, the fit of the structural models (below for hypothesis testing) justifies the use of this measurement model for validation of the measures. We feel it was better to model all the exogenous variables together in order to assess the measurement properties of all instruments together (e.g., discriminant validity).

⁴ Composite reliability scores were calculated as $(\sum \lambda_i)^2 / [(\sum \lambda_i)^2 + \sum_i \text{Var}(\epsilon_i)]$ where λ_i is the indicator loading and $\text{Var}(\epsilon_i) = 1 - \lambda_i^2$.

– alpha 0.963, Personal Relevance (PR) – alpha 0.968, and Interactivity of the Ad (Inter) – alpha 0.932. These levels meet past literature’s recommendation is that the Cronbach alpha should be above 0.70. As shown above in *Table 1*, all composite reliability scores were also greater than the recommended threshold of .70 [Hair et al.1998]. These analyses demonstrate that the measurement of these constructs is reliable.

Table 1: Measurement model: standardized loadings (all loadings p<.0001), composite reliabilities and fit statistics for survey sample

Items	Standardized Loadings	Composite Reliabilities	Items	Standardized Loadings	Composite Reliabilities
Att_Ad1	0.953	0.990	Inter1	0.887	0.932
Att_Ad2	0.989		Inter2	0.927	
Att_Ad3	0.992		Inter3	0.903	
Att_Ad4	0.990		PR1	0.981	0.968
Att_W1	0.860	PR2	0.961		
Att_W2	0.904	PR3	0.919		
Att_W3	0.975	0.963	Att_P1	0.961	0.963
Att_W4	0.978		Att_P2	0.971	
			Att_P3	0.908	
Fit Statistics					
X ² /df	220.8/109		CFI	0.970	
GFI	0.843		RMSEA	0.087 (0.070, 0.103)	
AGFI	0.779				

7.8. Convergent Validity

Convergent validity was assessed by examining the factor loadings [Segars 1997]. These loadings should exceed the threshold of 0.707 [Chin 1998; Hair et al. 1998; Segars 1997]. The factor loadings (see *Table 1* above) indicate compliance with this standard, thus demonstrating convergent validity. Another assessment of convergent validity is that the Average Variance Extracted⁵ (AVE) of each construct should also be above .50 [Fornell & Larcker 1981]. The AVE of these constructs are as follows: Att_Ad – 0.963, Att_W – 0.866, Att_P – 0.897, PR – 0.910, and Inter – 0.821. Hence, convergent validity has been demonstrated.

7.9. Discriminant Validity

To assess discriminant validity, the AVE of each construct was compared to the squared correlation between each pair of constructs. If the AVE are larger than any squared correlation, then it is discriminant [Anderson & Gerbing 1988; Segars 1997]. *Table 2* indicates that this is the case for the measures used in this survey.

Table 2: AMOS estimated squared correlations and (AVE)*

	<i>Inter</i>	<i>PR</i>	<i>Att_Ad</i>	<i>Att_W</i>	<i>Att_P</i>
<i>Inter</i>	0.821				
<i>PR</i>	0.189	0.910			
<i>Att_Ad</i>	0.371	0.323	0.963		
<i>Att_W</i>	0.376	0.117	0.379	0.866	
<i>Att_P</i>	0.194	0.112	0.215	0.518	0.897

Note: AVE figures are shown in bold along the diagonal

7.10. Structural Model

As stated above, structural models were used to test the hypotheses (see *Figures 3 - 5*). The structural models only differed in that the exogenous variables changed for each type of attitude object tested in this context.

⁵ AVEs were calculated as $(\sum \lambda_i^2) / [(\sum \lambda_i^2) + \sum_i \text{Var}(\epsilon_i)]$ where λ_i is the indicator loading and $\text{Var}(\epsilon_i) = 1 - \lambda_i^2$.

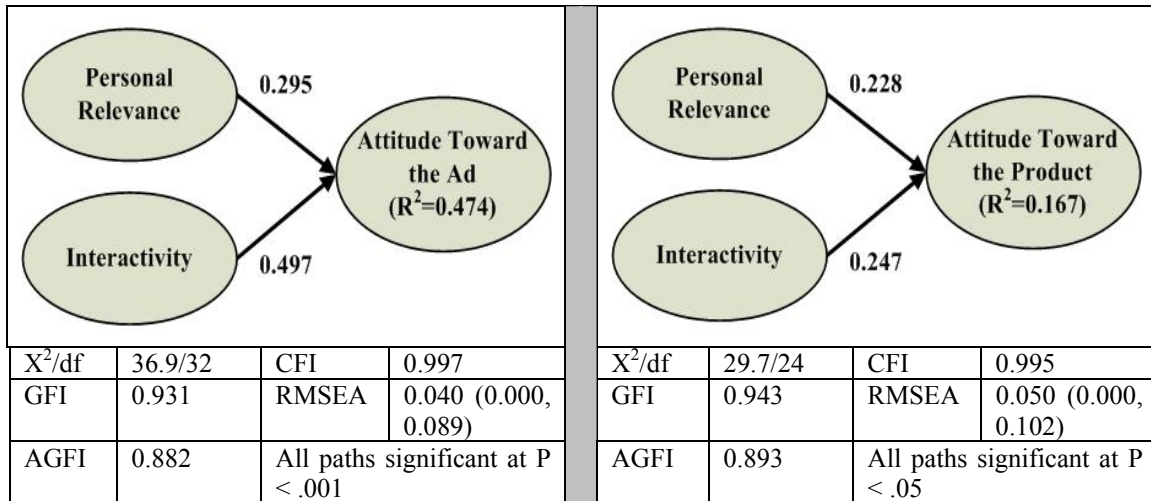


Figure 3: Structural model: standard regression weights, variance explained, and fit statistics for Survey 1 with attitude toward ad

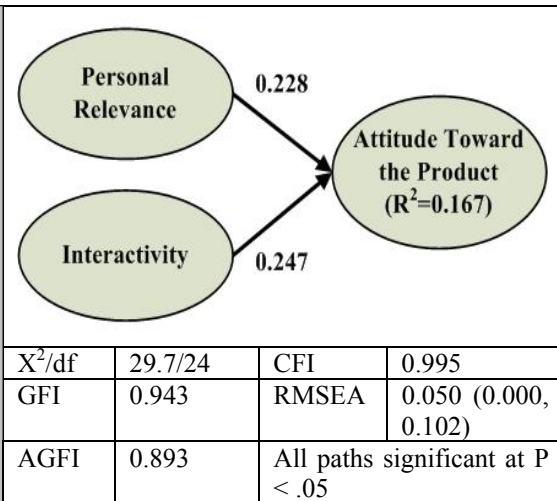


Figure 4: Structural model: standard regression weights, variance explained, and fit statistics for Survey 1 with attitude toward the product

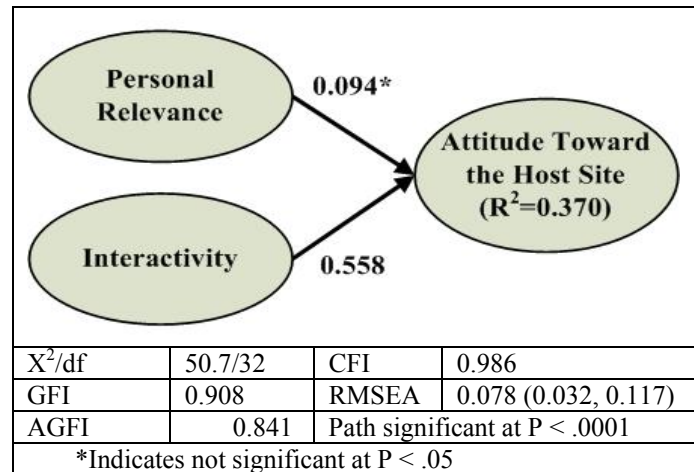


Figure 5: Structural model: standard regression weights, variance explained, and fit statistics for Survey 1 with attitude toward the website

The results for the structural model explaining attitudes toward the online advertisement indicate that the level of personal relevance and interactivity of the ad do significantly influence the attitude. The fit statistics for this model meet the thresholds outlined, supporting *H1a* and *H2a*. The results for the structural model explaining attitudes toward the product indicate that personal relevance and Interactivity significantly impact these attitudes. The upper confidence interval for the RMSEA is the only aspect of fit that may be considered unsupportive of the model fit. However, the RMSEA is still within acceptable fit standards, thus supporting *H1b* and *H2b*. Results for the structural model explaining attitudes toward the website indicate that personal relevance of the advertisements is not a significant predictor of these attitudes, thus not supporting *H1c*. However interactivity is a significant predictor, and the fit thresholds shows support for *H2c*.

7.11. Study 2

Study 2 was similar to Study 1 in that the same websites, advertisements, task sheets, and treatment groups were used. The main differences between the studies included using a controlled laboratory setting and a different sample in Study 2. The reason for conducting Study 2 was to isolate the effects of interest in a more controlled laboratory setting to see if the results from Study 1 could be replicated. Participants included 118 students from an on campus IS introductory course who received course extra credit (approximately 1 % of their final grade) for participating. 81 (68.6 %) were male. The minimum age was 18, the maximum age was 35, and the mean was 20.65. Each of the

sessions was randomly assigned to one of the experimental conditions, and the experiment lasted four sessions. Manipulation checks found that both the ad interactivity [$F(1,116) = 8.710, p=.004$] and ad personal relevance [$F(1,116) = 18.327, p<.001$] manipulations were significant. Consequently, the results of the hypothesis testing can reasonably be attributed to the isolation and manipulation of these to independent variables.

7.12. Measurement Model

The results of the measurement model for this study can be found in *Table 3*. As with Study 1, an assessment of the reliability, convergent validity, and discriminant validity showed that the measurement properties of the items fell within acceptable parameters.

Table 3: Measurement model: standardized loadings (all loadings $p<.0001$), composite reliabilities and fit statistics for experiment sample

Items	Standardized Loadings	Composite Reliabilities	Items	Standardized Loadings	Composite Reliabilities
Att Ad1	0.966	0.992	Inter1	0.719	0.877
Att Ad2	0.985		Inter2	0.820	
Att Ad3	0.993		Inter3	0.964	
Att Ad4	0.990		PR1	0.848	0.924
Att W1	0.912	PR2	0.955		
Att W2	0.973	PR3	0.881		
Att W3	0.960	0.976	Att P1	0.962	0.959
Att W4	0.973		Att P2	0.928	
			Att P3	0.936	
Fit Statistics					
X ² /df	132.4/109		CFI	0.992	
GFI	0.890		RMSEA	0.043 (0.000, 0.067)	
AGFI	0.845				

7.13. Structural Models

Structural models were used to test the hypotheses (see *Figures 6-8*). Similar to Study 1, the structural models only differed in that the exogenous variables changed for each type of attitude object tested in this context.

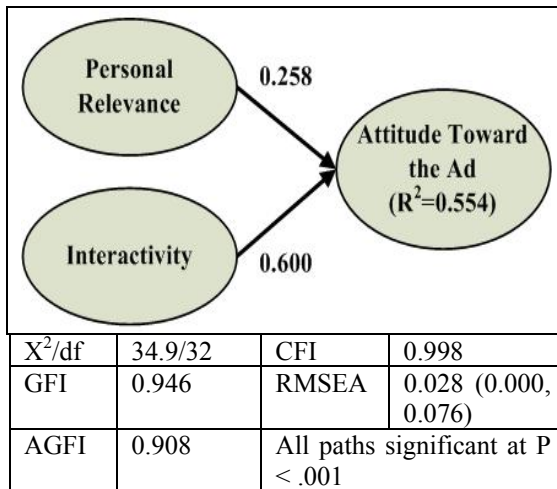


Figure 6: Structural model: standard regression weights, variance explained, and fit statistics for experiment with attitude toward ad

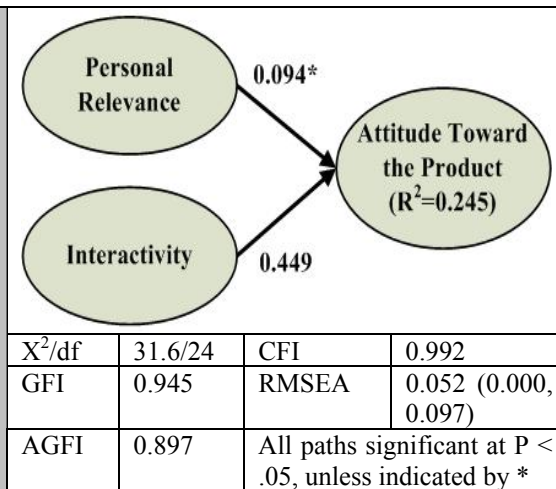


Figure 7: Structural model: standard regression weights, variance explained, and fit statistics for experiment with attitude toward the product

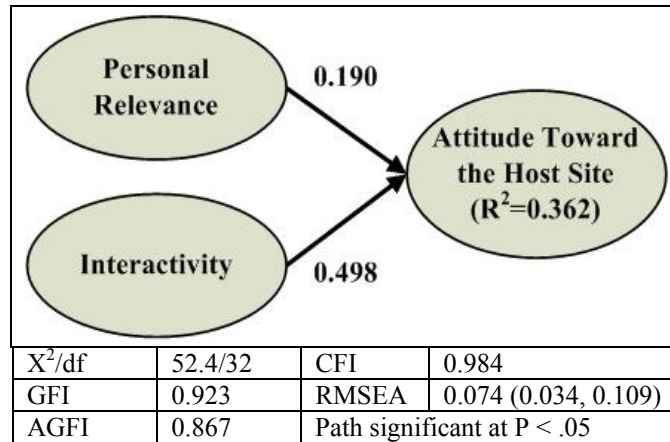


Figure 8: Structural model: standard regression weights, variance explained, and fit statistics for experiment with attitude toward the website

The results for the structural model that explains attitudes toward the online advertisement indicate that the level of personal relevance and interactivity of the ad significantly influence the attitude. The fit statistics for this model meet the thresholds outlined, supporting *H1a* and *H2a*. The results for the structural model that explain attitudes toward the product indicate that Interactivity significantly impacts these attitudes. However, the affect of personal relevance is not shown to be significant. This supports *H2b*, but does not support *H1b*. Results for the structural model that explain attitudes toward the website indicate that personal relevance and Interactivity of the advertisement are both significant predictors of these attitudes, supporting *H1c* and *H2c*.

8. Results

The results of studies 1 and 2 are summarized in *Table 4*. These two studies show that the effect of advertisement interactivity on all three dependant variables (attitude toward the ad, website, and product featured in the ad) was significant in both studies. Also, the effect of personal relevance was significant in both studies for attitude toward the advertisement. However, there was not convergence between results in the two studies regarding the effect of personal relevance on attitude toward the website and attitude toward the product.

Table 4: Summary of results from Study 1 and Study 2

Hypothesis	Study 1	Study 2
<i>H1a: For a repetitive online advertisement, a user’s attitude toward the ad is affected by the level of personal relevance in the advertisement.</i>	Supported	Supported
<i>H1b: For repetitive online advertisements, a user’s attitude toward the advertised product is affected by the level of personal relevance in the advertisements.</i>	Supported	Not Supported
<i>H1c: In situations of repetitive online advertising, a user’s attitude toward a website is affected by the level of personal relevance in the advertisements.</i>	Not Supported	Supported
<i>H2a: For repetitive online advertisements, the perceived level of interactivity in online ads affects a user’s attitudes toward the ads.</i>	Supported	Supported
<i>H2b: For repetitive online advertisements, the perceived level of interactivity in online ads affects a user’s attitudes toward the products featured in the ads.</i>	Supported	Supported
<i>H2c: For repetitive online advertisements, the perceived level of interactivity in online ads affects a user’s attitudes toward the website.</i>	Supported	Supported

9. Discussion and Conclusion

To summarize the intriguing findings of these studies, *H1c* and *H1b* are the two hypotheses that were not supported in both studies. However, neither was rejected by both studies. Such results suggest that there may be mediating or moderating variables of interest between the constructs personal relevance and the dependant variables of attitude toward the website and attitude toward the product. Future research should investigate other possible factors that could explain these results (e.g., irritation, annoyance, cognitive load).

Our results show that personal relevance and interactivity are important factors to consider in repetitive online

advertising. Studies 1 and 2 compliment each other by attesting to the importance of the level of advertisement interactivity on attitudes, and to the effect of personal relevance on attitudes toward eCommerce advertisements. These results were supported by both studies, a controlled experiment and a more generalizable sample in a survey. However, there are still limitations of these studies that need to be mentioned. First, the generalizability of these samples is in question. Although, Study 1 does employ a more generalizable sampling method than Study 2, snowball surveys have been shown to provide bias in their results. Future research should employ a more representative sampling technique.

Further, these studies only used two levels of Interactivity (High vs. Low) and one type of advertisement (pop-up ads). Therefore, interpretation of these results should be tempered with that understanding. Also, this research shows a direct effect of interactivity based on this manipulation. Future research should go beyond the scope of this research and isolate the different dimensions of Interactivity (i.e., speed, range, and mapping). Also, future research should investigate these effects with different types of advertisements, which may or may not be able to incorporate manipulations on every dimension of Interactivity.

Practical implications for this research abound in the marketing industry. In the past, many marketers used the diversity approach to advertising on the internet: send all types of advertisements to everyone, and inevitably you will get some responses/sales. This may be due to the relatively low cost of advertising online. It is true that unsolicited emails and advertisements are relatively inexpensive to send, and even with a minimal amount of responses, the responses (purchases) may justify (recover) the expense of such advertising. However, there may be a cost greater than the actual capital invested in the advertisements. This study shows that such shotgun approaches may not be the most advantageous for some business strategies because such ads may negatively affect the attitudes of users. Therefore, managers must understand how online advertising effects attitude formation which has downstream implications.

Important implications from these two studies apply to websites [Barnes & Vidgen 2002; Nah & Davis 2002]. As some websites depend upon eCommerce advertisements in their revenue model, it is important to understand how such advertisements can affect the attitudes and downstream behavior of a user. Online marketers also should understand the effects different types of advertisements have on potential customer's attitudes. This research suggests that for both websites and eCommerce advertisers, the level of interactivity in the ad is an important factor to consider. Further the level of personal relevance, for target markets and users, in the content of the ad should be considered by eCommerce marketers.

Theoretical implications have the most impact in regards to the boundaries implicated for Mere Exposure Theory, The Proximity Effect, and other research regarding familiarity or long-term exposure of messages. Our study suggests that repetition of stimuli viewed by others is not the leading indicator to valance attitudes. Familiarity was not shown to impact online users favorably in all cases dealing with online advertising. Another theoretical implication from this research is that the focus should shift from the evaluation of just the interface characteristics to a broad based assessment that includes the web content. This research supports that the personal relevance and interactivity of online content is an important factor in shaping attitudes of users. This advance in the literature may be the case with other types of online phenomena, such as online video and shopping carts. Future eCommerce and IS research should investigate further the role of online content in this type of media that affords a user much higher level of control.

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APPENDIX A: Task Sheet

When considering which website to buy from, you are mostly concerned about the features that are provided to help with order processing, and the interface presentation. Please help your friend in determining whether this purchase should be made at this website. Below is a list of items that will **help you in assessing the website**. Please perform and check off each action as you go through the list.

<input type="checkbox"/>	Enter Your Name: _____.
<input type="checkbox"/>	<u>CLICK HERE</u> and MAXIMIZE the new window (You will need to go back and forth from this window to the shopping site).
<input type="checkbox"/>	List a description of any advertisements you see.
<input type="checkbox"/>	Look at the vacation packages for Cancun .
<input type="checkbox"/>	Write down the price of the package you consider to be the best buy here _____.
<input type="checkbox"/>	Now you would like to explore other vacation packages. Click the ' Categories ' link
<input type="checkbox"/>	Now feel free to browse other vacation packages or any of the advertisements by Clicking their links.
<input type="checkbox"/>	As you are browsing, please write down the price of the best alternative to your above recommendation here _____.
<input type="checkbox"/>	When you have completed looking at the prices and details for the vacation packages. You are ready to purchase the best deal for the Cancun trip . Go to the vacation package and add it to your cart by clicking ' Buy Now '.
<input type="checkbox"/>	Then while in your shopping cart, Click ' Checkout '.
<input type="checkbox"/>	Enter in your information as requested. Then Click ' Continue '.
<input type="checkbox"/>	Enter in your shipping information, or check the box if it is the same as your billing information. Then Click ' Continue '.
<input type="checkbox"/>	Choose a shipping method. Then Choose a payment method, and Click ' Continue '.
<input type="checkbox"/>	You are now finished with the purchase, and can view your order or close the internet browser.
	Now Complete the Survey <u>CLICK HERE</u>

APPENDIX B: Screen Shots of the Ads for Each of the Experimental Conditions

<p>High Personal Relevance - Low Interactivity</p>	<p>Low Personal Relevance - Low Interactivity</p>
<p>Low Personal Relevance - High Interactivity</p>	<p>High Personal Relevance - High Interactivity</p>

APPENDIX C: Survey Items Used in Studies 1 & 2

Construct	Source	Item
Attitudes toward Products	[Kempf & Smith 1998]	The product that I've just examined is good.
		I have formed a favorable impression toward the product that I've just examined.
		I like the product that I've just examined.
Attitude toward the ads/website	[Kempf & Smith 1998]	Stem = My attitude toward the _____ is:
		Scales as follows
		Bad/Good
		Dislike/Like
		Unfavorable/Favorable
		Negative/Positive
Personal Relevance	[Bures et al. 2002]	The advertisements on this website were useless to me.
	All reverse coded	The advertisements on this website were irrelevant to me.
		The advertisements on this website are not personally important to me.
Interactivity ads	[Loiacono et al. 2002]	The advertisements in this site allow me to interact with it to receive tailored information.
		The advertisements in this site have interactive features, which help me accomplish my task.
		I can interact with the advertisements in this site in order to get information tailored to my specific needs.