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The Effects of Web Site Structure on Attitude: Moderating Effect of Surfing Behavior

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Abstract

This study examines the effects of types of information on website in terms of advertising effectiveness – memory, attitude, cognitive thoughts. The primary research question for this study is whether information quality and quantity have different effects on consumers' attitude toward the website. In this study, we manipulate information quality and quantity to see its impact on ad effectiveness. Also, we tested moderating effect by people's surfing behavior.

Keywords: Information quality; Information quantity; Surfing behavior; Searchers and Surfers; Attitude toward Ad; Attitude toward brand; Purchase intention

Introduction

One of main challenges advertisers face with the Internet is to create their Web sites so as to make visitors want to spend more time there, and to interact with the website and eventually elicit transactions. The assumption is that the more time consumers spend on the Web site, the more advantages, such as remembering the site's contents (and eventually, company and product information), the company has. Because of this, companies are now trying to put more information and features on their Web site since advertisers assume that many features on the site can give visitors more options while they are surfing [1]. Many consumer research studies, however, have shown the negative effects of greater amounts of information on consumers' decision making [2]. These studies have confirmed that presenting superfluous non-product-related information or a lot of information that consumers cannot handle (process) might impede consumers' ability to make good decisions. However, those studies were based on tests in the context of traditional media. The new media, such as the Internet, have totally different characteristics from those of traditional media. That is, the Internet allows consumers to control their information flow, and it is much easier for consumers to decide what information they want to be exposed to [1].

The purpose of current study is to test whether the traditional theory about information quality and quantity can be applied to the new media context. In this study, we introduce two different types of website surfing behavior and try to understand how these behaviors influence consumers' information searching on website.

Review of Literature

Over the past few years, the Internet, in particular the Web has been one of the hottest areas in advertising research. During those years, advertising and communication scholars have tried to study every aspect of the Internet. Some studied the potentiality of the Internet in terms of usage and users, some studied the issue of Web advertising measurement systems, and others have studied effects of new features of Web ads on memory and attitude [3-6].

In particular, advertising scholars have focused on the effects of Web ad features from two different perspectives. One major stream explores the effects of Web ad design aspects that are not possible in traditional media. For example, Coyle studied the effects of mapping in Web ads, Stevenson et al. studied the different effects of Web ad backgrounds, and Geissler studied the effects of consumers' perceived complexity of a company's Web site on their attitudes toward a Web site. Stevenson et al. examined the influence of a Web page's background on consumers' attitude. They found that if consumers perceive the Web page to be more complex (complexity was manipulated by color, items, and movement in the Web ad), they have a negative attitude toward those complex Web pages. Similarly, Geissler tested the effects of the perceived complexity of Web ads on consumers' attitudes toward the ad. Using Berlyne's complexity theory, Geissler argued that there would be a curvilinear relationship between a Web ad's complexity as perceived by consumers and consumers' attitude and behavioral intentions. Manipulating five different features - hyperlinks, page length of the first page appearing on the screen, graphics, text, and motion - from low to high levels, he found that the perceived complexity of the page has an inverted-U relationship with consumers' attitudes and behavioral intentions.

The other major stream regarding the effects of Web ad features focuses on their interactive aspects. For instance, Ghouse and Dou studied the effects of interactive functions of Web ads on consumers' perceived attitudes toward that Web ad, and Coyle, Benzian-Avery et al., Fortin, Karson, and Yang studied the different effects of interactive ads and non-interactive ads [6]. Most recently, Chung and Ahn tested the effects of interactivity on memory and attitude within different website structures. In their study, they manipulated website structures into interactive structure and linear structure based on hypertext theory, and tested which structure will be more effective in terms of memory and attitude. What they found was similar to other studies. That is, interactive structure has superior impact on consumers in terms of attitude, however, in terms of memory, linear structure was more effective than interactive structure.

In sum, these studies focused on the effects of interactive aspects of Web ads, but they used different design tools for manipulating the

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interactive aspects or features in the Web ads. This difference is due to different conceptual definition about the interactivity in a Web ad. For instance, Coyle considered vividness as the most important dimension of the interactivity, so he manipulated video and audio as the main tools to make consumers interact with the Web ad [7]. On the contrary, Chung and Ahn and Benzian-Avery et al. differentiated the interactive ads from non-interactive ads based on consumers' free choice. That is, Chung and Ahn (2008) defined the interactive ads as those that give options for consumers to choose and non-interactive ads as those that do not give options to consumers.

Types of surfing behavior

Though the term "involvement" has been used in studies in consumer behavior, some researchers use the broader motivation construct rather than involvement. Park and Mittl broadly define the involvement as a goal-directed arousal capacity. They argue that conceptualizing and operationalizing the involvement in terms of the degree of relevance of the message contents or issues to the person's attitudinal positions might be too restricted in the context of consumer behavior. Therefore, they proposed that the underyling reasons and causes for one's goal-directed arousal should be distinguished. In a series of studies, Park and Mittal and Park and Young divided involvement into two different states by underlying personal motives. They argue that a person can be highly involved with the advertising message by either high utilitarian motive or value-expressive motive. In here, utilitarian motives lead to *cognitive involvement* whereas value-expressive motives lead to *affective involvement*. So, high involvement based on different motives lead individual to focus on different type of information from advertisement. For example, high involvement based on a high degree of relevance of the message contents or issue is characterized as "high cognitive involvement," and individual in high cognitive involvement is usually affected by attributes-based message contents in advertisement. On the contrary, high involvement based on self-concept management is termed "high affective involvement," and individual in high affective involvement is usually affected by peripheral persuasion cues such as music, celebrity. As Bettman posits, personal motivation is an important factor affecting both the direction and intensity of consumer behavior. Further, individuals' underlying goals in information processing are important factors that affect how media users evaluate information [2].

In mass media context, many communication scholars have tried to understand different media usage according to individuals' underlying goals or motives from the perspective of uses and gratifications. A central tenet of the uses and gratifications is that audience are not passive media users, instead they are active for gratifying specific goals for using mass media. According to the studies of uses and gratifications, there are two different types of media orientations - instrumental and ritualistic orientation. Instrumental media use refers to goal-directed use of media to gratify informational motives, whereas ritualized media use refers to habitualized media use to gratify diversionary motives. Here, habitualized media use refers to time-consuming, more frequent, generalized use of media, but basic motive is information seeking. Therefore, instrumental media use are seeking specific information to satisfy their main objective for using mass media, whereas ritualized media users are seeking diversity to satisfy their main objective.

Similar categorization was tried regarding website surfing behavior. In the Web communication context, it has been suggested that users' have two different types of behaviors according to their motives. For instance, Thüring et al. suggested two broad categories of hypermedia user behavior - goal-directed surfing and wandering-through surfing. In goal-directed surfing, surfers are usually trying to reach final destination that contains the information he is looking for. Therefore, to these surfers any other information or tools in Web ad which are unrelated to their goal could be unimportant factors. In contrast, wandering-through surfing behavior can be characterized as surfing for fun, surfing for spending time. These surfers don't usually have any destinations that they want to go, and any specific information that they want to have. So, they prefer Web ad that offer a lot of fun to them.

Like Türling et al.'s categories in hypermedia context, there are two broad categories classifying Web site visitors' activities, that is, low-involvement hedonistic surfers and high-involvement utilitarian searchers, usually called surfers and searchers. Surfers are fun-seekers and explorers who desire entertainment and stimulation; they are likely to land at a Web ad, linger for a brief period and then take off for another more attractive site. In contrast, searchers are goal-oriented, looking for specific information, and are likely to spend more time at their preferred sites. Therefore, it is easy to see that surfers are more likely to engage in shallow, sensory-level, peripheral processing of the executional aspects of message but searchers will pay more attention to the contents of a message, processing it at a deeper, semantic level.

Information quality and quantity

In ELM context, many researches have repeatedly shown that message variables have varied effects on persuasion under different levels of elaboration [8]. Variables that scholars considered important to stimulate involvement in ELM context "are those that affect a person's rather conscious intentions and goals in processing a message" [8]. The implication of involvement for the web ad are clearly spelled out, as Petty and Cacioppo maintain "--- that in evaluating or designing an ad for a particular product, it is extremely important to know what information dimensions are important for people who desire to evaluate the true merits or implications of the product ---." This indicates that the "relevant" information used to evaluate the merits of any product or issue is likely to vary from person to person and situation to situation and the quality of information (relevance of information) is very important. One outcome of involvement is that it will be the informational dimensions of an ad that largely determine evaluations and attitudes for people's intent on evaluating the content of any given communication. Where involvement is low, the informational aspects of the web ad such as relevance of information to product (or, argument quality and strength in ELM) have little effect on attitudes. On the contrary, where involvement is high, the opposite will be obvious.

As seen in the previous section, consumers' clicking behavior may differ according to consumers' types of surfing behavior. “Searchers” are more likely to search the information given in the Web ad than “Surfers,” since searchers are willing or able to exert more cognitive processing effort. In this situation, searchers are more likely to demand greater information to satisfy their intrinsic need for information and cognition; that is, they are more likely to request more information by clicking hyperlinks given in the Web ad in order to see detailed information or to search other information. Further, searchers will also look for the relevant information that they need. According to ELM, under high involvement condition, the quality of the message arguments is a more important determinant of attitudes than a number of arguments. That is, highly involved consumers will look for quality of information than quantity of information, and further highly involved consumers will change their attitude based on the quality of information. In the traditional ad, this different effect on highly involved consumers will be possible since consumers do not have control over

the information given by the advertisers. That is, since consumers do not have control over their information flow, it is difficult to find relevant information unless it is given in the ad. However, in the web ad context, consumers can easily move to other information by clicking hyperlinks and easily get the relevant information for their needs in the web ad. Therefore, large quantity of information does not bother consumers' relevant information seeking behavior in the web ad. So,

H1: For searchers, both the relevance of the information (information quality) and information quantity will equally influence:

a. attitude toward the website

b. attitude toward the brand

c. attitude toward the company

d. purchase likelihood

However, for searchers, as stated above, the quality of information is the most important determinant. Since searchers' main goal is to find right information to satisfy their needs, relevant information is the most important to them. In addition to this, more detailed information and more diverse information will also be the most important determinant to searchers since they are ready to process the information given by the website. Therefore,

H2-a: For searchers, the relevance of the information with more information, compared to other conditions, will lead to the most favorable:

a. attitude toward the website

b. attitude toward the brand

c. attitude toward the company

d. purchase likelihood

In contrast to a high-involvement situation, consumers in low-involvement situations ("Surfers" in web context) have low motivation to process the advertising message. Therefore, they are less likely to request more information (i.e., less likely to click hyperlinks in the Web ad than high-involvement consumers). According to ELM, low-involvement consumers follow another route, the peripheral route. That is, they are more likely to be influenced by the peripheral cues in the Web ad. In this situation, the number of hyperlinks can be an important peripheral cue to consumers. That is, since surfers are not motivated to process further ad content and they do not want to engage in message-related thinking, they are not likely to click the hyperlinked information. Instead, they just consider the Web ad containing more hyperlinks better than the Web ad containing less hyperlinks because they may think that many hyperlinks will have more information and more hyperlinks will give more options to choose. This is the so called heuristic approach to the Web ad [9]. Since consumers all know that the hyperlinks contain information, surfers might use the simple heuristic approach that the more is the better (the more hyperlinks imply more information heuristic) based on their experience with the Web ad. Therefore, surfers will form an attitude toward the Web ad through considering the number of hyperlinks in the Web ad as the amount of information the Web ad can offer. So,

H3: For surfers, information quantity, compared to information quality will lead to more favorable:

a. attitude toward the website

b. attitude toward the brand

c. attitude toward the company

d. purchase likelihood

Method

The focus of experiment is on the effects of information quality and quantity under different types of surfing behaviors. In this study, information quality is operationalized as "the degree to which the information regarding product is related to the product itself." So, high quality information means that information is directly related to the product, and low quality information is the information not directly related to the product. The quantity of information is operationalzied "the number of product related information." Since each different information is normally hyperlinked in the website, the number of hyperlinks was manipulated as the quantity of the information in this study. This study utilized an experiment that manipulated 'types of surfing behavior,' 'information quality,' and 'information quantity,' thus resulting in a 2 (surfer vs. searcher)×2 (high quality vs. low quality)×2 (high quantity vs. low quantity) between-subjects full factorial design.

Manipulation of surfing behavior

This study adopted the same manipulation used in the previous study. For the searcher condition, the following instructions were given to participants at the first page of the website:

Thanks for your participation in this online survey. This study is for evaluating a newly developed camera website. Suppose that you are trying to buy a new camera and looking for the information to decide what will be the best for you through this website. Please look through these websites and give us your evaluation and recommendations after you finish. Please click on the start button if you are ready. This will last about 10 minutes. We will let you know when time is up.

For the surfer condition, the instructions read:

Thanks for your participation in this online survey. Suppose that you have nothing to do for the next 10 minutes and want to spend some time, and decide to surf the web for just fun and killing time. Please click on the start button if you are ready. This will last about 10 minutes. We will let you know when time is up.

Information quality manipulation

Through simple survey using students, product attributes that subjects think are important for the product was identified. In high quality condition, important product attributes were provided to the subjects. In low quality condition, information not related to the product itself was provided.

Information quantity manipulation

Information quantity was manipulated through manipulating the number of hyperlinks in the web ad. That is, in the first page of the web ad, listed hyperlinks were provided to the subjects. In low quantity condition, only 4 were hyperlinked to another information space. In high quantity condition, 22 were hyperlinked to another information space. Therefore, the information quantity for the first page was constant until subjects click one of hyperlinks and move to another pages.

Stimulus material

Previous studies have shown that product involvement would influence consumer behavior constantly. Therefore, it was decided

to use a product category that would have moderate involvement for most individuals, to obtain sufficient variance across the product involvement construct. A pre-test was performed on eight different product categories – calculator, answering machine, cordless phone, printer, 35 mm camera, cereal, computer and digital camera. The Zaichowsky Scale II was administered to 28 undergraduate students from a media planning class. Results show that the camera categories had moderate levels of product involvement among the subjects. Therefore, the camera (digital camera) was chosen as the product for this study.

The stimulus material for this study was created using HTML with a fictitious product name and company name. The first page of the Web site was a "log-in" page. Subjects had to type their log-in id to continue surfing. The second page contained all the hyperlinks, including product-related and other hyperlinks such as information about the company, message from the CEO, other corporate companies (under the same group), and additional features (e.g., language options, information about group). These hyperlinks were not directly related to the product (digital camera), but they were included in this study to make the Web site look real.

The number of hyperlinks was manipulated into two levels – 4 and 24. In the hypertext area, it is usually believed that there is a maximum size of breadth. If the breadth is so large, then the website looks unorganized. So, in this study, the maximum number of hyperlinks that was found in 'Canon.com' was used. In the second page, subjects faced the exact same page but a different number of hyperlinks. In the level with four hyperlinks, only the brand name for each different camera (four digital cameras) was hyperlinked. In the level with twenty-four hyperlinks, product information other than the four brand names was hyperlinked. Subjects could click those hyperlinks to see or find specific product information. Clicking those hyperlinks led subjects into the third page but to different locations. For example, when subjects clicked price hyperlinks, it automatically led subjects into the price location of the third page. At low-levels of hyperlinks, price was listed in the second page but was not hyperlinked. Therefore, subjects who wanted to see price information had to move to the third page and find that information by scrolling down the page. The information in the third page was downloaded from other camera-related Web sites. Therefore, all of the information was real and professionally composed. For low quality information (irrelevant information), general information about photographing, instead of information about digital camera, was provided. So, when subject in low quality condition clicks the links, it leads subject to the third page with photographing information.

Subjects and procedure

Undergraduate students in introduction courses for mass communication were asked to participate in the study from large southwestern university for the extra credit. Students were first asked to sign-up for one of 15 experiment sessions. A total of 201 students signed up and 186 students participated in the actual experiments. Upon arriving in the experiment lab, each subject was asked to select one card from a pool of 201 cards. This card contained each subject's log-in id for the study and her or his position in the experiment conditions. For example, user id 1 to 25 assigned subjects into the 'searcher,' 'high quality' and 'high quantity' condition; user ids 26 to 50 assigned subjects into the 'search,' 'high quality' and 'low quantity' condition, and so on. After selecting his or her id card, each subject was asked to sign the consent form for the experiment. After signing the consent form, the experiment coordinator read participants the instructions for the study. After receiving brief instructions for the study, subjects were asked to open the study home page and type their log-in ids and start to surf the Web site. When subjects logged-in, they were lead to the surfing behavior manipulation page. Subjects should read the message to proceed to the next page to finish their experiment.

Measures

Measures for dependent variables – attitude toward the website, attitude toward the brand and company, and purchase likelihood – were taken immediately after subjects finished surfing. Unlike previous studies on website structure effects; this study did not measure memory since the study manipulated the quantity of information. In other words, the total information was different across each condition and quality was different too. Therefore, measuring memory was not appropriate for this study. The dependent variables used to be evaluated in this study are:

Attitude toward the website (Awad)

A multi-item, seven-point semantic differential scale, which was used to measure attitude toward the website in several other studies and has been proven generally reliable, were used to measure attitude toward the website. Further, this study incorporated some other items, specifically developed to measure website attitude by Chen and Wells [10,11]. Those include the following anchors: (un)/favorable, like/dislike, (un)/interesting, (un)/appealing, (un)/satisfactory (α=.79).

Attitude toward the brand (Ab)

A 4-item scale measuring Ab was adapted from MacKenzie and Lutz and Raman [10]. It includes the following anchors: (un)/favorable, like/dislike, poor quality/high quality, and (un)/appealing (α=.81).

Attitude toward the company

A 4-item scale measuring Ac was adapted from Raman (1996). It includes the following anchors: (un)/favorable, like/dislike, trustworthy/untrustworthy, and (un)/appealing (α=.86).

Perceived amount and variety of information

To check the manipulation for information quantity, perceived amount and variety of information using two 5-point Likert-type items were used.

Purchase likelihood

Purchase likelihood was measured by offering four digital cameras to subjects by asking them how likely they purchase that camera from the website they just worked with. Subject was then asked to indicate how likely they would purchase each product using 10-point scale. At final analysis, those scores were averaged into one scale.

Data Analysis and Hypotheses Testing

The hypotheses were tested based on a 2 (behavior type: searcher vs. surfer)×2 (information quality: relevant information vs. non-relevant information)×2 (information quantity: high quantity vs. low quantity) between-subjects analysis of variance (ANOVA). Before the final analysis, three covariates, personal involvement with the camera, personal involvement with the web, and self-rated product knowledge (knowledge about digital camera), were used in each analysis. As a covariate, none of them was significant in the analysis.

Data screening

The data collected were examined for violations of normality

and outlier contamination so that, if necessary, appropriate data transformations could be executed to correct for abnormal skewness and kurtosis levels. First, statistics were calculated to determine the mean and standard deviation for each 8 groups. Then, univariate normality was checked by examining univariate skewness, kurtosis, and outlying case. Further, bivariate scatterplots were used to check for outliers and relationships among variables. One variable seemed to be slightly skewed (memory), but its skewnesses were not outside +3/-3 range of ratio of statistics to standard error within each of the independent variables. Therefore, it seems to be normal. And finally, multivariate outliers were also checked by using Mahalanobis' Distance (critical value for Mahalanobis' distance χ^2= 31.26, d.f.=11). No single case was identified as outlying cases in terms of Mahalanobis' Distance. Therefore, for the final analysis, all cases were included.

Manipulation check

Experimental manipulation for different users – surfer and searcher – was checked by, first, comparing subjects' memory of contents, and second, measuring their level of involvement during surfing. Manipulation for searcher can be described as successful if they recall more information than surfers given in the web site, and if their involvement level is higher than surfer during experiment. Since they are active information seekers, it was expected that they would recall information in the web site significantly more than subjects who are just trying to have fun. Memory was measured with open-ended questions. Two senior students, who didn't know the purpose of this study, coded whether answers were about website contents. And then, score 1 was given to each answer coded by two coders. Level of involvement was measured by a three-item involvement measurement: while going through the ad, I was (1) very involved/very uninvolved; (2) concentrating very hard/concentrating very little; (3) paying a lot of attention/paying little attention) (α=.82). Further, to check information quality manipulation, relevance of information to the product was checked by asking subjects a one-item 7-point semantic differential scale.

Manipulation checks on surfing type and relevance of information were conducted by two separate ANOVAs, one with surfing type and one with information relevance as the dependent variable. Three experimental factors (surfing type, information quality, and information quantity) were used as independent variables. Results of ANOVAs showed a significant main effect for surfing type on memory (F[1, 180]=9.036 , p<.05, ω^2= .05) and contents relevance on relevance measurement (F[1, 180]=85.174, p<.01, ω^2=.32). None of the other effects were statistically significant. In addition to this, average mean score was 4.93 for searchers and 4.13 for surfers, which is also statistically significant (t [186]=4.681, p<.01). Table 1 shows the results of manipulation checks and a summary of cell means and standard deviations of all measures.

Hypothesis testing

In this study, the between-subjects factors were types of behavior, information quality and information quantity. For each dependent variable, ANOVAs and planned comparisons were performed.

Hypothesis 1: In hypotheses 1, we expected, in general, equal influence of information quality and quantity on dependent variables. First, ANOVA on each dependent variable was run to see if there are significant main effects by information quality and quantity, and then simple main effects of information quality and quantity within behavior type were run. As hypothesized, ANOVA on each dependent variable yielded the predicted main effects of the information quality and quantity on attitude toward the website (F=22.46, p<.05 for information quality and F=93.27, p<.01 for information quantity), attitude toward the brand (F=29.52, p<.01 for information quality and F=105.37, p<.01 for information quantity), attitude toward the company (F=2.03, p>.15 for information quality and F=37.79, p<.01 for information quantity) and purchase likelihood (F=13.39, p<.01 for information quality and F=5.13, p<.05 for information quantity). However, information quality did not yield a significant main effect on attitude toward the company. To see the simple effects of quality and quantity within behavior types, tests of simple main effects on each dependent variable were run. As expected, both quality and quantity had a significant effect on attitude toward the website among searchers (F[1, 180]=25.441, p<.01, ω^2= .13 for quality; F[1, 180]=18.596, p<.01, ω^2= .09), on attitude toward the brand (F[1, 180]=32.58, p<.01, ω^2= .15 for quality; F[1, 180]=18.66, p<.01, ω^2=.09), and on purchase intention (F[1, 180]=20.06, p<.01, ω^2=.10 for quality; F[1, 180]=.027, p>.87). However, we did not have significant effect of quality on attitude toward the company (F[1, 180]=.844, p>.36). In sum, subjects expressed significantly more favorable attitude toward the website, brand, and purchase intention when they were exposed to more product relevant information than non-relevant information.

Hypothesis 2: Hypothesis 2 expects the most favorable attitude from 'searchers' when they are exposed to relevant with more information. Based on ELM, it was expected that searchers' attitude and purchase intention would be highest when they have more and relevant information. To test this hypothesis, mean scores of each group were compared across all different quality and quantity conditions. As expected, searchers' mean scores of attitude toward the website and brand were highest in relevant information with more information (M=4.86 for attitude toward the website; M=5.00 for attitude toward the brand), followed by relevant information with less information (M=4.63 for attitude toward the website; M=4.71 for attitude toward the brand). However, mean scores of attitude toward the company and purchase intention among searchers were not highest in relevant information with more information condition (M=4.42 for attitude toward the company; M=3.83 for purchase intention). Surprisingly,

Behavior Type	Info Quality	Info Quantity	Manipulation		Attitude	Attitude	Attitude	Purchase
			Memory	Relevance	website	Brand	Company	Intention
Searchers	High Quality	High	3.50	4.14	4.86	5.01	4.42	4.25
		Low	2.83	3.71	4.64	4.71	3.99	3.83
	Low Quality	High	2.43	2.34	4.52	4.51	4.25	3.34
		Low	2.16	2.48	3.41	3.52	3.80	2.99
Surfers	High Quality	High	2.16	3.48	4.69	4.81	4.62	3.40
		Low	2.63	3.55	3.48	3.56	3.56	3.19
	Low Quality	High	2.33	3.08	4.51	4.77	4.60	3.71
		Low	2.35	2.61	3.14	3.01	3.14	2.63

Table 1: Descriptive Statistics for Scales Used in the Experiment.

purchase intention was the highest among searchers in relevant information with less information (M=4.26).

Information quality was a significant factor on attitude toward the website, attitude toward the brand and purchase intention above/beyond information quantity. However, opposite to our expectation, those were significant only at low quantity level, not high quantity level. In other words, information quality and quantity are, individually, significant factor on all dependent variables among searchers. But, magnitude of impact was bigger from information quantity than information quality on all dependent variables.

Hypothesis 3: Hypothesis 3 also expects that attitude scores and purchase intention would be higher or highest among surfers who were exposed to more information than relevant information. That is, since surfers need to spend more time for their entertainment purpose, we expected that giving them more choice options would create more favorable attitude among surfers than giving them more relevant information.

To test this hypothesis, we also used mean score comparisons of surfers across all different quality and quantity conditions. As expected, information quality was not significant factor among surfers above/beyond information quantity on attitude toward the website. That is, among surfers, when information quantity was considered, information quality became non-significant factor regardless of its level (p>.40 for relevant information and p>.13 for non-relevant information). Quantity was the main factor creating favorable attitude among surfers (F[1, 180]=30.49, p<.01, ω^2=.15 for high quality; F[1, 180]=38.89, p<.01, ω^2=.18 for low quality). Also on brand attitude, quality was not a significant factor above/beyond quantity. Quantity had both significant impact on brand attitude for both high and low quality (F[1, 180]=35.57, p<.01, ω^2=.16 for high quality; F[1, 180]=71.56, p<.01, ω^2=.28 for low quality). On company attitude, the same results were found. Quality was not significant above/beyond quantity. Quantity was the significant factor on company attitude above/beyond quality (F[1, 180]=14.69, p<.01, ω^2= .075 for high quality; F[1, 180]=27.91, p<.01, ω^2=.13 for low quality). In terms of purchase likelihood, we found different results. Among surfers, information quality was significant factor on purchase intention only at low quantity (F[1, 180]=1.44, p>.23 for high quantity; F[1, 180]=4.13, p<.05, ω^2=.22 for low quantity). Information quantity also was the significant factor on purchase intention only at low information quality (F [1, 180]=.58, p>.45 for high quality; F[1, 180]=16.12, p<.01, ω^2=.08 for low quality).

Conclusion

This research tried to extend previous studies' findings on the effects of website structures on subjects' attitude, memory, and behavioral intentions, using the similar theoretical rationales from the hypertext communications. Chung and Zhao (2005) and Chung and Ahn (2007) found that in the internet context, a certain type of structure works better for consumers in terms of advertising effectiveness, such as attitude and memory. This study incorporated the concept of surfing types, which was often studied in mass communication area, with the relation

of website structures. Further, this study also aims to contribute to recent research in interactive advertising by documenting the different impact by an individual's surfing behaviors and website structure. Although past research in hypertext communication has documented attitudinal and behavioral differences across text structures, there has been no single study on the structure effects in the Internet context with relation to the behaviors on the internet.

In this experiment, we tested three hypotheses regarding subjects' attitude and behavioral intentions (purchase likelihood), manipulating subjects' behaviors on the internet and information quality and quantity on the website. The findings suggest similar results on attitude and purchase intentions as those from Chung and Ahn and Chung and Zhao's studies. In terms of attitude, results indicate that subjects' attitudes were different by their behavior types searchers those who look for information seriously. In other words, those who are highly involved with their information search) showed higher or highest attitude toward the website and brand when they were exposed to the relevant product information. Surfers (those who look for fun or entertainment) showed higher or highest attitude toward the website and brand when they were exposed to more information condition.

However, those effects by information quality on attitude toward the website and brand were not significant above/beyond information quantity. That is, when we control the effects of information quantity out, the magnitude of effects by information quality became un-significant, which means that information quantity is the more influencing factor on subjects' attitude toward the website, brand and purchase intentions. This phenomenon became obvious when we tested hypothesis 3. Information quality was not significant factor among surfers above/beyond information quantity on attitude toward the website. That is, among surfers, when information quantity was controlled, information quality became non-significant factor regardless of its level. Quantity was the main factor creating favorable attitude among surfers. Also on brand attitude, quality was not a significant factor above/beyond quantity, when quantity was controlled. Information quantity had both significant impact on brand attitude for both high and low quality. Further, on purchase intentions, information quality was significant only at low quantity condition.

In sum, these study documents that individuals will have a different surfing type – searcher vs. surfer – based on their purpose and this different surfing type will show different preference with the relevance of information provided in the website and quantity of information in the website. Although this study found some similar pattern regarding subjects' behavioral intention, attitude was not the same as suggested by ELM. In fact, relevance of information in the website had little impact on subject's attitude toward the website and brand regardless of their behavior types. Instead, information quantity was found to be more important influencing factor in this study.

Discussion

The findings in this study were opposite to our expectation. However, the findings provide some meaningful insights into recent findings in website structure effects and uses and gratification literatures. For example, Stafford and Stafford found that entertainment is one of three motivators among website users. Chung and Ahn argued in their studies that people tend to prefer more interactive website structures over linear structures. Interactivity was defined as "control over information flow" in their studies. In other words, people tend to prefer the website that gives them a control over their information flow. In new media context, hyperlinks provided in the website are the tools for information and interaction to people. People click hyperlinks to control their behaviors and to get information based on their needs. In this study, the result that information quantity is the more significant factor among searchers and surfers confirms that people do want to control over their information flow, and people do want entertainment in website.

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