INVESTIGATING MOTIVES AND INFORMATION PROCESSING STRATEGIES OF INTERNET USERS

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ABSTRACT

This paper scrutinizes the effect of Internet users' variation in need for cognition and their preferred information processing strategy for website design and brand attitude assessment. Data was gathered through an online survey (n=490). The applied Covariance Structural Modeling (CSM) results show that users' information processing strategies have no effect on website design and their brand attitude. The study also demonstrates that individual differences in motives influence choices of information processing strategy used to process the advertisement message and content. Moreover, a positive brand attitude is associated with the choice of the advertising message and content through which the recipients' attitude to the advertised brand is made more favorable.

INTRODUCTION

It has been acknowledged (e.g., Ju-Pak, 1999; Sundar, 2000; Yoon and Kim, 2001) that Internet advertising should be designed to consider the suitability of the medium based on consumer characteristics. Internet advertising persuasive effectiveness is influenced by personality traits (Roehm and Haugtvedt, 1999; Lee, Tansey and Frankwick 2000). Cacioppo and Petty (1982) developed the need for a cognition personality variable to account for individual differences in processing motivations in persuasive situations. Indeed, individual differences in need for cognition were linked to a theory of persuasion encapsulated in their Elaboration Likelihood Model (ELM) and empirical results have shown that attitudes change in a manner aligned with the situational manipulation of motivation (Cacioppo and Petty, 1986; Haugtvedt et al., 1992).

The web site's "unrestrained shelf space" and the "physical unrestricted time and space" give Internet advertisers more freedom and virtually unlimited opportunity to place whatever they want online (Stewart, 1998; Palmer and Griffith, 1998). However, the fact that the individual behaves differently in the real and virtual world (Turkle, 1995) makes it more difficult to target the right audience at the right place at the right time. The literature does not satisfactorily address a number of the applications of need for cognition in the Internet advertising context. Having said that, valuable studies of need of cognition exist within the marketing literature and a study, conducted by Raman and Leckenby (1995) has suggested that a need for cognition may affect the duration of a visit when corporate Web site advertising is for products that greatly involve consumers. However, their study confirmed that there is no positive relationship between a need for cognition and the duration of a Web visit as a possible measure of effectiveness of commercial web sites.

While research such as this provides guidelines for virtual consumer behaviour analysis, there is a need for new perspectives in web site management to emerge in today's competitive market. Thus, it is of importance to understand the underlying factors that have an influence on users' responses to their exposure to a banner advertisement or a corporate Web site and thereby influence their attitude and behaviour. Indeed, neither the trade nor academic literature has offered any explanation of the behavioural aspects nor how users' motives can affect their information processing and its effect on their attitude and behaviour or how users process and use information from the Internet. To address this gap, this study aims at proposing and testing a conceptual model linking Internet users' need for cognition and information processing strategies and investigating its effect on corporate website design and brand attitude.

The paper begins with a hypothetical model, a brief overview of the need for cognition and the information processing strategies literature and hypotheses follow. The methods, results and discussion follow, concluding with the research implications and limitations of the study, and suggestions for further research. It is expected that the results of this study would provide a more developed understanding of the role of the need for cognition as a personality variable and information processing strategy as a mechanism to process information and its influence on the design and appeal of the website and on brand attitude change.

THEORETICAL BACKGROUND

Developing research model

Our study utilizes the ELM as a psychological mechanism that aids in explaining how corporate Web site advertising can lead to positive brand attitude change. The ELM suggests the existence of two information processing strategies; central-route and peripheral-route processing. Central-route processing occurs following an individual's careful and thoughtful consideration of the rational and objective merits of the information presented. Peripheral-route processing occurs when motivation and ability to process are low and some simple heuristic cues are available (Petty and Cacioppo, 1984; Petty and Prieter, 1994).

A substantial body of empirical evidence has confirmed the roles of both central-route and peripheral-route processing in mediating the impact of advertising on brand attitude. Indeed, in some circumstances, attitude formation and change result from a consumer's careful attempts to comprehend and evaluate the relevant content of an advertisement and to integrate this new information with his/her prior knowledge into a coherent and reasoned opinion about the brand. In other situations, consumers use peripheral factors such as their feelings about the quality of the advertisement, the source of the advertisement or their current mood state as cues to assist them in deciding how they feel about the advertised brand.

From the consumer information-processing viewpoint, Rodgers and Thorson (2000) conceptualised that any control the advertiser could exercise in an interactive environment would be reflected at a structural level in terms of advertisement types, advertisement format and advertisement features. In this study, the proposed model includes advertisement type (corporate Web site) and advertisement format to predict a user's change in brand attitude in response to corporate Web site advertising. As regards to advertisement format, Bucy, Lang, Potter and Grabe (1999) suggested that it is important to distinguish between the content (verbal and visual informational components of the message) and the form (packaging of that information such as format, structure, editing and digital effects). In this paper, form and content of a corporate Web site are viewed as interacting with each other to bring about brand attitude change. Indeed, we side with Reeves and Nass (1996), who have suggested that an interaction between content and form of an advertisement results in an increased liking of the advertisement. Prior research (e.g., Mitchell and Olson, 1981; Shimp and Yokum, 1982; Lutz, MacKenzie and Belch 1983; Moore and Hutchinson, 1983; Mackenzie and Lutz, 1989; Park and Young, 1986) has established the connection between advertisement attitude and brand attitude and it is therefore reasonable to postulate a relationship between the interaction between *content*, form and brand attitude.

According to Roehm and Haugvedt (1999), personality affects information processing. Petty and Wegener (1998) claim that matching advertisement messages to an individual's personality enhances message elaboration and produces a more positive evaluation of the advertising claims. We side with them and propose a hypothetical model, which includes the need for cognition as a personality variable (see Figure 1).

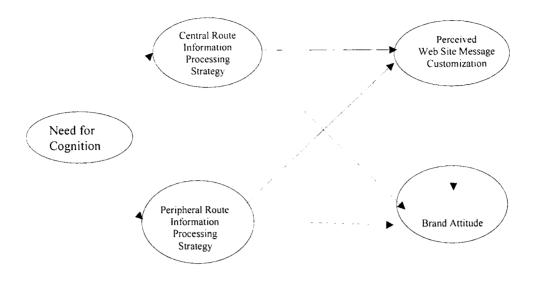


Figure 1: The path diagram of the hypothesised relationships

A conceptualization and discussion of the variables in the hypothesized relationship follows.

Linking need for cognition and information processing strategies

Need for cognition originates from the early works of Cohen, Stotland and Wolfe (1955) on individual differences in cognitive motivation. Need for cognition is conceptualized as reflecting a stable intrinsic motivation that can be developed and changed rather than a true need (Cacioppo and Petty, 1982; 1986). Cohen et al., (1955, p. 291) define the need for cognition as "...a need to structure relevant situations in meaningful, integrated ways. It is a need to understand and make reasonable the experiential world".

Contemporary research on individual difference began with the Cacioppo and Petty (1982) suggestion that there were individual differences in people's tendencies to engage in and enjoy effortful cognitive activities. According to Cacioppo and Petty (1982, p. 116), the need for cognition is "...a tendency of individuals to engage in and enjoy thinking". Based on their analytic studies, inter-individual variations in people's tendency to engage in and enjoy effortful cognitive endeavors were represented in terms of a single factor, which was called need for cognition. That is, inter-individual variations in need for cognition were conceptualized as falling along a bipolar continuum, from *low* to *high*. As such, individuals who have a high need for cognition (also known as chronic cognisors) would tend to enjoy tasks that provided an opportunity to think, while those individuals who were low in need for cognition (chronic cognitive misers) would tend to avoid tasks that required cognitive effort. According to Cacioppo, Petty, Feinstein, Blair, and Jarvis (1996), the distinction between individuals who have high or low need for cognition appears to be initiated in large part by their past experiences, which are reinforced by their accessible memories and behavioral histories, to manifest in current experience and to influence the processing of information relevant to present endeavors or problems.

Several studies were conducted to establish the relationship between need for cognition and intellectual ability (Cacioppo and Petty, 1982; 1986; Cacioppo, Petty, and Morris, 1983; Waters and Zakrajsek, 1990; Dollinger and McMorrow, 1992; Petty and Jarvis, 1996). The results established that need for cognition should be considered as a cognitive motivation rather than as an intellectual ability. When compared to individuals who are low in need for cognition, those who have high need for cognition are generally characterized by active, exploring minds and draw out information from their environment through their senses and intellect. These individuals are also likely to seek more information about a wide range of tasks, issues and current events than are individuals who are low in need for cognition.

The existing research (e.g., Olson, Camp, and Fuller, 1984; Leary, Sheppard, McNeil, Jenkins, and Barnes, 1986; Taylor and Bagby, 1988; Taylor, Bagby, and Parkers, 1992; Thompson and Zanna, 1995) has also revealed that a need for cognition acts in conjunction with other effects. For example, Leary et al., (1986) suggested that individuals high in need for cognition are more likely to base their judgment and beliefs on empirical information and rational considerations than are individuals who are low in need for cognition. Earlier research has also shown that individuals high in need for cognition tend to be more curious (Olson et al., 1984) and to feel more personally involved in social issues (Thompson and Zanna, 1995). Thompson and Zanna's (1995) findings have also suggested that need for cognition is negatively related to emotionality. On the other hand, studies conducted by Taylor and Bagby (1988) and Taylor et al., (1992) reported that individuals high in need for cognition have less difficulty identifying and communicating feelings, discriminating feelings from bodily sensations and enjoying a normal emotional life.

Applying the Petty and Cacioppo (1986), Elaboration Likelihood Model (ELM) to Internet users processing Internet advertising, under the central route processing strategy, suggests that the users will be expected to have a high need for cognition. These users are expected to possess information motivation and consequently they will be likely to engage actively in processing the content of the advertising message if it is of high personal relevance. It is also expected that they will have the ability to attend, process and respond to advertising messages because of their familiarity with the message content arising from their high level of involvement and prior knowledge. It is also plausible that these individuals will have the capability to facilitate more interactions with a corporate Web site.

Therefore, it is expected that:

H_{1a}: Need for cognition is positively related to verbal information processing strategy (central-route information processing).

Under the peripheral route processing strategy, users are expected to have low needs for cognition. These users are expected to possess entertainment motivation and therefore, they are likely to engage actively in processing the content of the advertising when peripheral cues are presented. It is also expected that they will lack the ability to attend, process and respond to advertising messages because they will prefer attractive visual presentations. Therefore, it is also plausible that these individuals will have the capability to facilitate more interactions with a banner advertisement as well as with a target advertisement.

Therefore, it is expected that:

H_{1b}: Need for cognition is negatively related to visual information processing strategy (peripheral route information processing).

Linking perceived web site message customization, information processing strategies and brand attitude

The recent literature on communication and psychology pertaining to the effects of modality (presentation) may be invoked to understand the relative cognitive effects of different multimedia combinations. Sundar (2000) pointed out that each individual modality such as text, picture, audio or video contains unique characteristics and different individuals encode this modality-specific content in a different manner when they process information. For example, the author cited a recent experimental study where individuals exposed to a multimedia news site indicated a greater likelihood of re-visiting the site when compared to a text-only version even though the two groups did not differ in the amount of information that they learned from the site.

Reeves and Nass (1996) suggested that the formal features of media used for creating multimedia Web sites have the potential to create the illusion of the website visitor being transported to the world portrayed in the media. Both authors, however, argued that such perception could be generated with relatively low-technological interfaces, which involve text or pictorial material. The findings from Bucy et al., (1999) have also confirmed that formal features often compel attention, increase arousal, and enhance memory and impact of subjective evaluations of media content.

Earlier studies (Ju-Pak, 1999; Sundar, 2000; Yoon and Kim, 2001) have offered evidence that Internet advertising should be designed to consider the suitability of the medium based on consumer characteristics. Past consumer research literature has also shown that presentation modality has a strong influence on determining information processing strategy (Bettman, 1976; Bettman and Kakkar 1977; Bettman and Park 1980). Schenkman and Jonsson (2000) suggested that the use of a Web page is determined by factors such as information provided, the usability of the site and the impression given to the users. Preference for the Web page is also closely related to its appeal. Roehm and Haugtvedt (1999) suggested that personality affects information processing and empirical evidence provided by Roehm (1999) supported the proposition that matching advertising messages to an individual's personality enhances message elaboration and produces a more positive evaluation of the advertising claims (Petty and Wegener, 1998).

A review of Internet advertising literature has shown that most Internet advertisements are designed to focus on employing visual and verbal material that is interesting, informative and entertaining in an attempt to attract users' attention and to enhance the value or attractiveness of the content. Bezjian-Avery, Calder, and Iaccobucci (1998) suggested that a cognitive matching of system properties (visual or verbal) and consumer preferential needs (preferred visual or verbal processing) is critical for maximum persuasion. Findings from Sundar (2000) suggested that audio and video downloads are powerful cues and are likely to be noticed and scrutinized by users to a greater extent than a few paragraphs of text. He stated that the addition of multimedia to a Web site appeared to positively affect users' memories of the advertisements on the site. Sundar, Narayan, Obregon, and Uppal (1998) concluded that where advertisers use the new features of the online medium that are non-existent in print (for example, audio and video downloads, animated images, hyperlinks, site-map etc.), they affect the user's attention to the advertisements. These authors concluded that information processing experiments should be employed to determine the mechanism by which these new features help or hinder the reception to online advertising by the users as well as their reaction to it.

Previous studies (Vaughn, 1980; Ratchford, 1987; Ratchford and Vaughn, 1989) have also suggested a product-media match approach through developing advertising creative strategies, which incorporate functional attitude theory (Katz, 1960) using the Vaughn's FCB matrix

{high/low involvement and thinking/feeling products} (Vaughn, 1980) to understand their impact on advertising effectiveness. Regardless of the advertising appeal (rational-informational or emotional-transformational) of a corporate Web site, the persuasiveness of an advertising message (ability to form and change an individual's brand attitude) is dependent on an individual's level of motivation (Petty and Cacioppo, 1986). As previously suggested, the persuasiveness of a corporate Web site message is also affected by the extent to which it matches an individual's personality (Petty and Wegener, 1998). Hence, it would be reasonable to argue that a corporate Web site that is designed based on individual differences in terms of need for cognition, goal-directed motives, preferred information processing strategies and level of personal product involvement is more likely to elicit a favorable brand attitude.

Therefore, this paper has examined the following hypotheses:

H₂: The extent of perceived Web site message customization affects Internet users' choice of information processing strategy (central-route information processing or peripheral route information processing).

H₃: The greater extent of perceived Web site message customization, the greater extent of change in brand attitude.

Linking information processing strategies and brand attitude

The model presented in Figure 1 indicates that two different information processing strategies produce positive brand attitudes. It has been suggested that any given attitude may be stronger when it is changed or formed through processes requiring extensive issue-relevant elaboration (via central route processing) rather than cue-based persuasion (via peripheral route processing). With this in mind, it is anticipated that when a variable such as matching impacts on attitudes via a central route, the resultant attitude will be stronger than when matching impacts attitudes via a peripheral cue process. We hold that this theory can be directly applied to the Internet.

Therefore, in the context of Internet advertising, the outcomes of an attitude-behavior relationship are expected to link to the cognitive processing of messages yielding more positive attitudes and higher predictive power for future purchases than low-elaboration processing. Haugtvedt and Petty (1989) have also suggested that attitude change induced via systematic, or central route processes tends to be of a longer duration than attitude change resulting from peripheral route processes. These researchers have consistently concluded that attitude change induced via the central route is more predictive of behavior than changes induced via the peripheral route. Thus, we put forward the following hypothesis.

H₄: The type of information processing strategy employed (central-route information processing or peripheral-route information processing) effects brand attitude change.

RESEARCH DESIGN

Sample and data collection

The population for this study was Australian Internet users. As such, there were no boundaries placed on the potential respondents since the Internet can be connected anywhere and at anytime. The data for this study were collected through an online survey with a sample size totalling 490 respondents who had to have at least one year of Internet experience. Two samples including a working adult group and a commercial online panel were chosen. The first sample was recruited by using advertising flyers and emails to undergraduate business students. A professional marketing research firm, AMR Interactive Australia, using their existing online panel, provided the second sample. The panel members were invited to participate in the study via email. A Web URL address was then sent to those who showed interest and willingness to participate in this study in return for a cash draw incentive.

Questionnaire development

The questionnaire was developed in English. The measurement scales were adapted from various sources to suit the specific context of Internet advertising, and thus, were based on valid and reliable measures found in previous research. Before administering the survey, a pre-test of the questionnaire with a small group of ten respondents was conducted, and some minor changes were made.

The questionnaire consisted of two sections. The first section included general questions concerning respondents' Internet usage in terms of time spent, purposes of using Internet and number of years of experience in surfing the Internet. The second section included sets of questions that were designed to measure four different phenomena: 1) the importance of need for cognition, 2) Internet user's preference for processing verbal (central-route) and visual information (peripheral-route); 3) importance of Web site design customization; 4) a measure of the change of brand attitude from pre-exposure when followed by post exposure after browsing respondents' selected website.

In the first part of the second section of the questionnaire, respondents were first asked to rate (on a scale from 1 to 5, where a "1" indicated not at all likely, and a "5" indicated very much likely) the individual difference in need for cognition (the scale of 18 items was adapted from Cacioppo and Petty, 1982; Batra and Stayman, 1990).

In the second part of the second section, a set of questions asked respondents to evaluate their preference for processing verbal (central-route) and visual information (peripheral-route) (information processing style on a scale of 22 items-11 visual subscale and 11 verbal subscale. This was adapted from Childers, Houston and Heckler, 1985) on a four-point scale (where a "1" indicated always true, and a "4" indicated always not true).

The third part of the second section utilised a portion of a Cho (1999) scale to measure Web site design customization by asking respondents to indicate their attitude on a 7-point Likert scale, where a "1" indicated strongly disagree with the web content (design) about products/brands, and a "7" indicated strongly agree.

The last part of the second section required respondents to indicate their attitudinal response on a 7-point Likert scale (where a "1" indicated strongly disagree about products/brands, and a "7"

indicated strongly agree). This part utilized the scales developed by Gardner (1985), Mitchell (1986), Maheswaran and Sternthal (1990), and Cho (1999). Since these scales were originally designed to measure brand attitude for traditional media, they were modified to apply to Internet advertising. Finally, the last section included demographic questions.

Choosing stimuli material

The design of the corporate Web site was customized to each individual's differences in their need for cognition, the current goal-directed motives (informational versus entertainment) for their browsing and searching on the Internet and their preferred information processing strategies (central-route information processing versus peripheral-route information processing).

Given that the message content is capable of affecting the ability to process, the messages that were designed for a corporate Web site were a trade-off between argument processing (elaboration likelihood is high) and the operation of peripheral cues (elaboration likelihood is low). That is, both high and low levels of product relevance (computer and fashion apparel) were presented to encourage argument processing whereas low levels of personal relevance (soft drink) were used with source-likeability peripheral cues to influence attitude in the absence of argument scrutiny.

Checking manipulation

Previous studies have identified the main reasons for web site failures which include difficulty in navigation, irrelevant information which pays little or no attention to the Internet users' needs and an inability to present rich visual information and as well as a reasonable amount of dynamism when consumers arrive at a Web page. Pre-tests were therefore performed to address all of these concerns on the experimental Web sites. The manipulation checks were adapted from previous studies (Celsi and Olson 1988; Gardner 1985; Petty and Cacioppo 1984). Two separate online tests were conducted in the computer laboratory. In order to direct the subjects' processing goal when being exposed to the experimental materials, subjects were instructed to evaluate the design (creative aspects) of each Web site but not the brand. The three Web sites met the desired properties. Pretest subjects were assigned to all experimental advertisements and were asked to rate the extent to which the advertisement content met the desired creative design manipulations.

Reliability tests were performed on all measures while independent sample t-tests were used to determine the validity of the manipulations. The results showed that the soft drink Web site (n=31) was perceived as more entertainment-oriented (M=2.38, t=8.358 and p=0.00) than information-oriented (M=3.28, t=3.321 and p=0.00). These results indicated that the soft drink Web site was more entertaining. As for the computer Web site, subjects (n=54) perceived its content as an informative site (M=2.58, t=10.203 and p=0.00). The fashion apparel site (n=36) was perceived as a combination of informational (M=2.35, t=-11.284, t=0.00) and entertainment (M=2.70, t=6.126, t=0.00) site.

The data were analyzed using descriptive statistics and applying the following statistical techniques: exploratory and confirmatory factor analyses, reliability, and validity tests followed by an analysis using Covariance Structural Modeling (CSM).

FINDINGS

Fifty-five percent of the sample was male and about 89 percent of participants were 18 to 40 years old. Sixty-six percent of the subjects had at least an undergraduate or associated degree and about 81 percent reported using the Internet for more than 10 hours per week. When asked to state the purpose of using the Internet, almost half of the sample reported using the Internet for the purpose of searching for information. About 25 percent of the subjects reported using it for entertainment purposes and 11 percent used it for online shopping. Only a small portion of the sample claimed to use the Internet for communication and work-related activities. 46 percent of the sample had more than three years of Internet experience.

Assessing the psychometric properties of measures

The assessment of the measurement models was conducted through confirmatory factor analyses. Table 2 depicts four constructs in total. Each construct was tested for its convergent validity and discriminant validity. Convergent validity will be satisfied if coefficients are statistically significant and substantial of a value equal to or greater than 0.50 (Steenkamp and van Trijp, 1991) and the overall fit of the model is acceptable (Anderson and Gerbing, 1988; Steenkamp and van Trijp, 1991). As for discriminant validity, it is achieved through CFA if the correlation between two components is significantly less than unity and the model receives a satisfactory level of fit. Fornell and Lacker (1981) suggest a criterion of comparing the average variance (p_{vc}) and composite reliability (p_c) of a construct under investigation with the squared regression coefficient (phi) between a construct and other constructs of interest. The discriminant validity between these constructs is satisfied if both p_{vc} and p_c are greater than squared phi (Bagozzi and Foxall, 1996; Steenkamp and van Trijp, 1991). Unidimensionality is demonstrated when the indicators of a construct have acceptable fit on a single factor model (Anderson and Gerbing, 1988). Unidimenionality was achieved.

Table 2: Summary of psychometric properties of measures

	Construct	No. of Items	Reliability Tests				Validity Tests		
Š			Cronbach Alpha	Composite reliability (CR)	Average Variance Extracted (AVE)	Average Item Loading	Unidimensio- nality	Within- Construct Convergent Validity	Within Construct Discriminant Validity
1	Need for Cognition (NC)	14	0.9232	0.873	0.607	0.796	Satisfactory	Satisfactory	N.A
2	Verbal-Visual Processing Style (VVS)	15	0.8991 0.8891	0.858 0.838	0.563 0.561	0.825 0.825	Satisfactory	Satisfactory	Satisfac- tory
3	Brand Attitude	3	0.9435	0.907	0.788	0.937	Satisfactory	Satisfactory	N.A
4	Customized Web Site Design	7	0.9076	0.896	0.625	0.857	Satisfactory	Satisfactory	Satisfac- tory

The findings indicated that the dimensions of these constructs were conceptually and empirically acceptable with multiple goodness-of-fit indices (GFI, CFI, TLI and NFI) above the 0.90 recommended levels. All variance extracted for the latent constructs were equal to or greater

than the conventional standard of 0.5. The average factor loadings on these constructs were all equal to or greater than 0.70. Factor loadings of less than 0.50 were removed. The measurement was re-specified and the CFA was repeated to assess the goodness-of-fit, within construct convergent validity and within construct discriminant validity including the composite reliability and the average variance extracted. Lastly, the composite reliabilities (CR) were computed. The CR results show that all constructs had acceptable reliability. Previous research (Kline, 1998) has recommended the use of multiple indices to assess the fit of the model to the data. "There is no single answer to the question about what is a good fit. The more criteria that a model satisfies, the better are its fit" (Kline, 1998, p. 131). Therefore, in this study, larger CFI, TLI and NFI values (greater than 0.90) indicated good model fit. The normed χ^2 should not be greater than 5.0 (Wheaton, Muthen, Alvin, and Summers, 1977) to indicate a good fit. Finally, the RMSEA value of less than or equal to 0.08 indicates a good fit. Low goodness-of-measures would have suggested that the model could be substantially improved.

In evaluating goodness of fit, the data in Figure 3 shows that the model produced a good fit to the data. For absolute fit measures, the model had a GFI (0.965) of above 0.90 and the Normed χ^2 (3.308) was within an acceptable level of less than 5. All three incremental measures achieved more than the desired threshold of 0.90 for goodness-of-fit (NFI = 0.969, TLI = 0.965 and CFI = 0.965). The RMSEA (0.069) was below the recommended level indicating a good level of fit.

Hypothesis Testing

The results of the CSM demonstrate that the standardized regression coefficients of the structural path between brand attitude and information processing strategies (central-route, peripheral route) were not significantly different from zero (see Figure 3 and Table 3).

Table 3: Standardized regression coefficients of need for cognition, information processing strategies (central-route, peripheral-route), perceived web site message customization and brand attitude

		Standardized Regression Weights			
	Estimate	S.E.	C.R.	P	
H _{1a} Central Route < NC	0.888	0.065	8.224	0.000	
H _{1b} Peripheral Route < NC	0.549	0.040	6.908	0.000	
H ₂ Central Route < Perceived Web Site Message Customisation	-0.324	0.163	-4.586	0.000	
H ₂ Peripheral Route < Perceived Web Site Message Customisation	0.272	0.195	3.861	0.000	
H ₃ Brand Attitude < Perceived Web Site Message Customisation	0.517	0.045	10.951	0.000	
H ₄ Brand Attitude < Central Route	-0.083	0.134	-1.349	0.177	
H ₄ Brand Attitude < Peripheral Route	0.050	0.160	0.825	<u>0.409</u>	

Need for cognition was positively related to both central-route information processing strategy (β = 0.888, SE = 0.065, p = 0.000) and peripheral-route information processing strategy (β = 0.549, SE = 0.040, p = 0.000). These findings supported hypotheses H_{1a} and H_{1b} .

The influence of perceived Web site message customization on central-route information processing strategy was negative (β = -0.324, SE = 0.163, p = 0.000) whereas the results showed a positive effect of perceived Web site message customization on peripheral-route information processing strategy (β = 0.272, SE = 0.195, p = 0.000). Therefore, H₂ was supported.

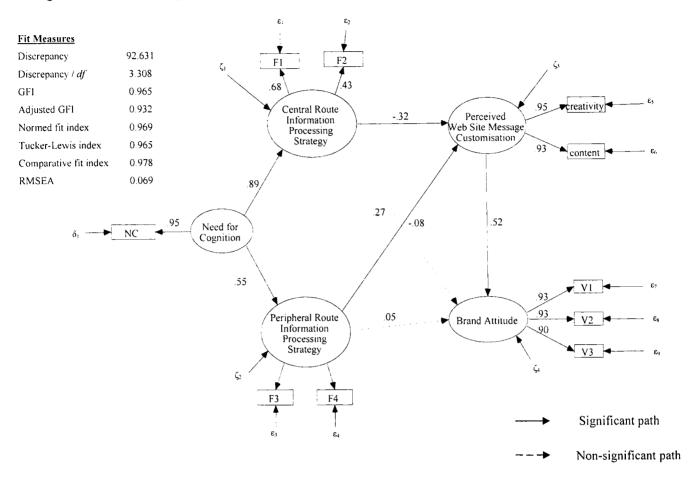


Figure 3: CSM results of estimates of relationships

As expected, the results confirmed that the extent of perceived Web site message customization affects brand attitude change (β = 0.517, SE = 0.045, p = 0.000) and H₃ was supported.

Insignificant results were also found for the structural relationship between information processing strategies and brand attitude. The preferred information processing strategy used did not effect change in Internet users' brand attitude (central route - β = -0.083, SE = 0.134, p = 0.177; peripheral route - β = 0.050, SE = 0.160, p = 0.409). These findings did not support H₄.

DISCUSSION

Based on the assessment of Internet users' attitudes, it becomes apparent that a positive relationship exists between perceived Web site message customization and brand attitude. These findings provide empirical evidence for the proposition that Internet advertising is effective as a branding medium when it identifies individual characteristics such as need for cognition, goal-directed motives (information, entertainment), information processing strategies (central-route, peripheral-route), product categories (low, medium, high) and level of product involvement (low, medium, high) to determine message strategy decisions (rational-informational versus emotional-entertainment).

The results of our study suggest that Internet users tend to adopt a combined central-peripheral-route to process Web site content. This is similar to the third route, known as an experiential-route, conceptualized by Meyers-Levy and Malaviya (1999). Most corporate Web site designs are based on employing both visual and verbal materials that are interesting, informative and entertaining in an attempt to attract users' attention and to enhance the value or attractiveness of the content. As a result, users do not utilize a single type of information processing strategy to process the content of each Web page; instead two processes appear to be used in parallel (Wolfinbarger and Gilly, 2001; Moe, 2003)

The results of our study suggest that a customised Web site design (for example, Web sites that contain fewer animations and static images, corporate logos and slogans versus those that contain dynamic animations with a colourful background, animated graphics, corporate logos and slogans) result in greater user interactivity. The increased user interactivity as a result of the interaction between the 'form' (packaging of information such as format, structure and digital effects) and 'content' (verbal and visual information component of the message) of the Web site. This interaction is similar to the concept of flow proposed by Novak and Hoffman (1997) and Hoffman, Novak and Duhachek (2003), that is, when Internet users became highly involved with the Web content found on the Web site. Our findings also support the proposition made by Roehm and Haugtvedt (1999) and Nowak, Shamp, Hollander and Cameron (1999) who suggested the use of customised messages presented to match consumers' personalities or characteristics.

Our study also demonstrates that message strategy should not be confined to two communication views based on an informational and transformational dichotomy, as suggested by Laskey, Day, and Crask (1989) and Wells (1980). Moreover, informational and transformational strategies should vary according to the product categories as well as the consumer characteristics.

Our study identifies no consistent and significant relations between users' inter-individual differences in need for cognition and their information processing strategies and between information processing strategies and brand attitude change. Previous studies (Ahlering, 1987; Condra, 1992; Verplanken, Hazenberg, and Palenewen, 1992; Verplanken, 1993; Papacharissi and Rubin, 2000; Yoon and Kim, 2001) have suggested that individuals who have a high need for cognition would tend to enjoy tasks that provide an opportunity to think while individuals who are low in need for cognition would tend to avoid tasks that require cognitive effort. Our study results show that no support for brand attitude change occurs via central-route or peripheral-route information processing strategies. Users may have mild positive feelings induced by brand familiarity. These feelings are then transferred to their initial judgment but are insufficient to generate changes in brand attitude.

CONCLUSIONS

This paper's contribution to knowledge is a development of model and an assessment of the relationship between the need for cognition and information processing strategy and their influence on website design and brand attitude. It is expected that Internet users can and do switch information processing strategies according to a search for specific task (for example, motivation for searching information and/or entertainment). On the one hand, the previous literature on users' motives and preferred information processing strategies (Hoffman and Novak, 1996; Roehm and Haugtvedt, 1999; Hoffman et al., 2003) has also suggested that Internet users who are extrinsically motivated, are interested in specific information and that they are typically more goal-directed to search for specific content and to experience a high degree of involvement while searching for

valuable information via a central-route information processing strategy (Hoffman and Novak, 1996). On the other hand, users seeking entertainment are guided by impulse and curiosity and they perform the search activity for its own sake rather than as a means to a specific end (Hoffman and Novak, 1996). These users will be likely to employ a visual (peripheral-route) information processing strategy.

IMPLICATIONS FOR PRACTICE

On a practical note, this study recommends that marketers and advertisers pursue multiple advertising goals such as brand awareness, brand recall, brand image and brand attitude through an appropriate Web site design. Proper Web site message customization is designed through selecting content (informational, transformational, or variation of both according to product category), appeal (rational, emotional or variation of both) and form (packaging of information such as format, structure and inclusion of interactive features) to effect positive attitude change. Message strategy should not be confined to two communication views based on an informational and transformational dichotomy. Web site designers should consider varying informational and transformational strategies based on the product categories and consumers' characteristics.

According to the results of our study, click-through rate is merely providing a convenient means for determining the frequency with which consumers pay attention to (click) Internet advertising. Current statistics used for evaluating Internet advertising effectiveness include information concerning the measure of true advertising exposure, the exact frequency of exposure to build brand awareness, and consumers' usage and reaction to Internet advertisements and advertisers' Web sites. Indeed, our model recommends the evaluation of brand attitude change (before and after exposure) as an effective Internet advertising evaluation measure.

LIMITATIONS AND FUTURE DIRECTIONS

This study provides a framework for future research to investigate the different types of Web site design that are crucial for creating positive attitudes toward advertisements and the brand when advertising new or unfamiliar brands online. However, the model needs further replication, extension and critical evaluation using a similar product category and/or unfamiliar brands. Future studies should also focus on using unfamiliar brands to verify the applicability of the 'brand attitude' approach presented in our study. Moreover, due to the natural differences between products and services, the model should also be tested in a service environment.

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