HOW CAN WEB ADVERTISING INFLUENCE MALE AND FEMALE BELIEFS?

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ABSTRACT
This paper reviews the application of ELM to understand how men and women differ in their evaluation of information content and the visual presentation used in web advertising. It verifies the ELM by examining several variables influencing consumers’ beliefs of web ads. These variables include (a) advertising appeals (rational/emotional), (b) personal and product involvement (high/low), (c) the gender (female/male). A survey of 591 Internet users investigated by which a 2×2×2 ANOVA between-subjects experimental design is used to guide the research design and the systematic analysis procedure. The result of this finding is that in high-involvement situations, people are more likely to click a Web ad with a rational advertising appeal contrast than an ad with an emotional advertising appeal. Also we find that a rational advertising appeal ad contrast than an emotional advertising one is evaluated more favorably by males than females. Managerial implications for the use of these ad execution cues are discussed and future research avenues are proposed.

Keywords: ELM, advertising appeal, personal and product involvement, advertising belief

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INTRODUCTION

Internet s an Important Channel
While Web advertising appears to be the most important influence on the future of the advertising industry over the next ten to fifteen years (Ducoffe, 1996), advertisers are uncertain about its effectiveness. As online shopping creates new market opportunities,
businesses can have a better grip of consumer behavior through the Internet and respond quickly to each individual consumer as consumers browse through the Internet advertisings and purchase items they need.

The Internet is becoming a more important marketing channel in both business-to-business (B2B) and business-to-customer (B2C) markets. It is projected that over 11 percent of the world’s population now has access to the Internet, with the number of users worldwide reaching USD$719 million by December, 2003; this is an increase of 100.4 percentage since the year 2000. World-wide Internet use is projected to reach USD$1.7 billion by 2007 (Nielsen, 2006). Online shopping, a form of virtual operation on the Internet has shown the potential to grow from a small to a major portion of the global commerce.

Consumer interactions with Internet advertising will be influenced by their Internet use motivations. For example, a consumer who uses the Internet for writing a research paper will be less likely to click on a pop-up banner ad that disrupts his/her work. On the other hand, a consumer who plans to purchase a vacation package is more likely to view an Internet travel advertising or related Websites. As Web use by both males and females continues to grow, it is becoming clear that genders make use of the Web differently (Sheehan, 1999). Differences have been seen in male and female Web users’ perceptions of Web advertising (Schlosser, Shavitt, & Kanfer, 1999), use patterns (Weiser, 2000), and online privacy concerns and behaviors (Sheehan, 1999). Additional knowledge concerning the Web’s gender-specific advertising behavior is needed.

**Gender Difference in Internet Use**

Well over a decade ago, gender differences have been of interest to advertisers and marketers. For example, there is some evidence to suggest that males might better process technical product information in graphical forms because visual depictions are conductive to right-hemisphere procession. Whereas female, technical product information might be better processed if presented in verbal prose, which is more compatible with left-hemisphere processing (Meyers-Levy, 1994). Despite a recent surge in the use of the Internet by women (Pastore, 2001), there is a great deal of
evidence that suggests the Internet remains less hospitable to women than men (Herring, 2000) with fewer women than men using the Internet (Kehoe, Pitkow, & Morton, 1997).

Past researches found that sex differences responded in advertising due to differences in values via traditional media (Brunel & Nelson, 2003), self-construal (e.g., emotion, satisfaction) (Wang, Bristol, Mowen, & Chakaborty, 2000) and processing style (e.g., appeal order vs. information processing) (Meyers-Levy, 1989). According to their researches, males tend to process message appeal heuristically, while females prefer connected, other-focused message and tend to demonstrate integrative processing strategies.

As a reason for this difference, some researchers have argued that women juggle several roles and do not have the time to learn about the new technologies such as the Internet (Debare, 1996). It is also becoming clear that males and females make use of this new medium differently (Sheehan, 1999). As Bauer (1967) remarked, involvement is nothing but a fashionable new name for the well-known concept of perceived risk. However, how they response and process information differences to the ads on Web holding across varying involvement conditions is an essential issue for understanding advertising effectiveness?

**The Effect of Online User Involvement**

Previous research (Papacharissi & Rubin, 2000) has examined online consumer search behavior using Internet advertising; however, their studies did not investigate the interactions between advertising appeals and personal involvement. Despite the tremendous growth in online transactions, many challenges remain in the practice of e-commerce; such as, how viable in Internet is for female shopper? This pattern of Web use leaves questions as to understand the different concepts of gender, even though reasons for the trend have gone unusually explored in the literature.

Despite the increases research investigate the online advertising and information-processing environment (Wang, Bristol, Mowen, & Chakaborty, 2000; Vakratsas & Ambler, 1999; Papacharissi & Rubin, 2000), many questions remained to
be addressed. Undoubtedly, as advertisers contemplate the value of investing in web ad, it would be helpful to understand how web ad appeal affects online browsers’ attention to the ad, as well as attitude and belief toward the web advertising.

There has been a permanent dispute as to the definition of involvement. In marketing, one has often equated involvement with perceived product importance. But does product importance capture the full richness of the involvement relationship? Isn’t there much more meaning? Kapferer and Laurent (1986) suggested that it is time to stop thinking in terms of consumers’ degree of involvement in product categories. Instead, it is both more theoretically and managerially fruitful to inquire about consumer involvement profiles. Actually, a review of experimental manipulations of involvement, marketing studies and managers’ opinions revealed that involvement could stem from one or from a combination of the five following antecedents: interest, perceived risk (with two subcomponents, importance and probability), the rewarding nature of the product (its pleasure value), and the perceived ability of brand choice to express one’s status, one’s identity (symbol value). Hence it seems more useful to think of involvement as an arousal or motivational state.

On practical grounds, by using the well-known, clean variables to describe these antecedents, our research is different from other studies, which see involvement theory as simple predictions on the effects of consumer behavior. That is to say, when consumers are involved, they should engage in a number of behaviors (active search, extensive choice process, active information processing, etc.); consumers are not involved, they should not engage in these behaviors.

On theoretical grounds, involvement does not systematically lead to the expected differences in behavior. They depend on certain facets (risk, symbol, pleasure, importance), as measured here by the involvement profile. In this article, the involvement profile is a basis for segmenting markets and guiding the advertising strategy. Differences have been seen in male and female Web users’ perceptions of Web advertising (Schlosser, Shavitt, & Kanfer, 1999), use patterns (Weiser, 2000), and online privacy concerns and behaviors (Sheehan, 1999). Additional knowledge concerning the Web’s gender-specific advertising behavior is needed. Therefore, we
have unexplored questions, such as:

How do the gender response to the personal and product involvement and affinity for appeal types of Web advertising?

The goal of this research is to examine the antecedents influencing male/female advertising belief on the Internet and to test their proposed inter-relationships.

**LITERATURE REVIEW**

**Elaboration Likelihood Model (ELM)**

The ELM (the elaboration likelihood model of persuasion is a theory about the processes responsible for yielding to a persuasive communication and the strength of the attitudes that result from those processes) assumes that the very first stage of the persuasion process is awareness through advertising exposure. According to the ELM, there are two different persuasion routes that consumers follow when they come across persuasive communication: (1) the central route and (2) the peripheral routes. When consumers have high involvement (personal or situational) to process communication, they are willing or able to exert a lot of cognitive processing effort, called high elaboration likelihood. In this situation, central cues such as existing beliefs, argument quality, and initial attitude are important in determining persuasion effects (i.e., enduring positive attitude change or boomerang effects). In contrast to high involvement situations, consumers are either not willing or unable to exert a lot of processing effort. In this low elaboration situation, peripheral persuasion cues such as attractive sources, music, humor and visuals are determining factors of persuasion effects (a temporary attitude shift or retaining the initial attitude).

A third way in which a variable influences persuasion is by affecting (a) the extent of argument elaboration (i.e., the extent to which a person is motivated and/or able to evaluate the central merits of the issue-relevant information presented) and (b) the direction of elaboration (i.e., whether the thoughts elicited are relatively favorable or unfavorable) (Sewak, Wilkin, Bentley, & Smith, 2005). The ELM offers a
well-grounded framework for examining the effects of message and medium attributes on cognitive processes like attitudes and knowledge acquisition.

Whether an individual will follow the central or peripheral route to persuasion is determined by the likelihood of elaboration, which, in turn, is influenced by the individual’s motivation and ability to process. Petty and Cacioppo (1986) define motivation and ability in terms of their antecedents. Some antecedents are situational factors, whereas others are individual factors. Some variables influence the extent of information processing, whereas others tend to influence the direction of thinking (i.e., objective or biased processing). Factors that enhance processing motivation include perceived personal relevance, need for cognition, increased number of message sources, and personal responsibility for evaluating the message.

Based on the above mentioned of information processing in the Internet from that in the traditional media, factors that enhance the effects of web ads, such as product and personal involvement and advertising appeals have been explored in next sessions.

**Personal and Product Involvement with Advertising Appeals**

Pavlou and Steward (2000) suggested that user involvement is an important measure to consider in examining the effectiveness of interactive advertising. As long as consumers have an opportunity to be exposed to a Web ad, what are the variables determining the clicking of ads? The clicking of the ad is totally voluntary. The most important determining factor of clicking an ad is the level of involvement (i.e., personal relevance and product category involvement). The ELM (Petty et al., 1983) suggests that the relationship between involvement and attitude might be influenced creative strategy. In short, motivation to process ad content (i.e., level of involvement) is the most important determining factor for banner click ability. Consumers have high motivation to process advertising messages due to high personal relevance, high product category involvement, and high need for cognition. In these situations, consumers 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 banners in order to see detailed ad content than consumers in low-involvement situations. This can be called the central route to voluntary exposure.

In contrast, consumers in low involvement situations (low personal and product involvement) have low motivation to process advertising messages, they are less likely to request more information, i.e., less likely to click ad to see more detailed information. However, they follow another route to clicking ad—the peripheral route to voluntary exposure. When consumers are not highly motivated to process further ad content, they do not want to engage in message-related thinking; rather they are more likely to focus on available peripheral cues. In other words, favorability of peripheral cues will influence click ability of ads in low-involvement situations. In the case of banner ads, attention-getting or curiosity-generating peripheral cues would be novelty or contrast-related components of web ads, such as bright colors, and attention-getting animation (Pavlon & Steward, 2000).

Gaining consumers’ attention and generate favorable attitudes are two key advertising objectives. An important issue is the design and appeal of advertising message. One of the fundamental elements related to advertising strategies is the selection of an appeal (Turley & Kelly, 1997). Turley and Kelly (1997) point out advertising appeals were commonly categorized into two broad types: (1) emotional appeal and (2) rational appeal. Past research has indicated that effectiveness of advertising appeals depended on types of advertised products (Turley & Kelly, 1997; Aaker, Batra, & Myers, 1992). Stafford (1995) proposed that rational approaches are deemed more appropriate for thinking products, while feeling advertisements are more suitable for products related to emotions.

Rational and Emotional Advertising Appeals

A rational advertising appeal highlights the functional features of the product attribute or performance information (Johar & Sirgy, 1991, p.23). According to the simple model of rationality, preferences between alternatives should not depend on the advertisement context (Huber, Payne, & Puto, 1982). Research has confirmed that people tend to differ in their baseline level of arousal (Eysenck, 1967). That is to say,
people who is under aroused (lowly emotionally reactive) is expected not to be motivated and show less preferences for emotional stimulation.

Cacioppo and Petty (1982) report that people showed unfavourable attitudes toward a high exposed, emotional advertising appeal for high-involvement product. On the other hand, to provide a theoretical foundation for the hypotheses, this paper examines some of the literature on approach response to emotional ads appeal.

An emotional advertising appeal differs from a rational one in components, such as attention-getting animation/image, positive/negative emotional stimulation and attractive visual text or graphic. It does not highlight the functional features or information cue of the product (or brand), whereas focuses on symbolic, attractive attributes and peripheral cues (e.g., celebrity, ads bright colour or advertising exposure intensity) (Johar & Sirgy, 1991).

As a result, Internet advertisements employing both emotional and rational advertising appeals are common practices by Internet advertisers nowadays. Consumer interactions with Internet advertising will be influenced by their Internet use motives. For example, a consumer who uses the Internet for writing a research paper (goal-oriented 0 will be less likely to click on a pop-up, emotional appeal banner advertising that disrupts his/her work. On the other hand, a consumer who surfing on the Internet will be more likely to click on a web ad with bright colors, attractive words, or attention-getting animation.

Advertising studies featuring high-involvement product which need for cognition have provided strong support for a linkage between rational personality traits and attitude formation (Cacioppo & Petty, 1982). Their studies found that people showed more favourable attitudes toward the rational ads appeal and reported unfavourable attitudes toward a high exposed, emotional advertising appeal for high-involvement product. On the other hand, to provide a theoretical foundation for the hypotheses, this paper examines some of the literature on approach response to emotional ads appeal.

An emotional advertising appeal differs from a functional one in components, such as attention-getting animation/image, positive/negative emotional stimulation and attractive visual text or graphic. It does focus on symbolic, attractive attributes and
peripheral cues (e.g., celebrity, ads bright colour or advertising exposure intensity) (Johar & Sirgy, 1991).

Additionally, under low-involved situations that do not call for specific processing of ad content of the messages (Brunel & Nelson, 2003, p.333). Rational advertising appeal can help market high-involvement products, whereas emotional appeal ad was good for low-involvement products in traditional media (Wills, Samli, & Jacobs, 1991). Hence, we propose that,

\[ H1a: \text{For high-involvement product, people will report stronger belief toward a rational Internet advertising appeal relative to an emotional advertising appeal.} \]

\[ H1b: \text{For low-involvement product, people will report stronger belief toward an emotional Internet advertising appeal relative to a rational advertising appeal.} \]

**Gendered Web Advertising Beliefs**

The literature suggests that males exhibit more positive beliefs about and attitudes toward advertising in general compared to females (O’Donohoe, 1995). Furthermore, males are theorized to prefer Web ads than female follow a belief pattern similar to their belief patterns for traditional media advertising on the basis of common media measurements of enjoyment, offensiveness, informativeness, deceptiveness, annoyingness, and usefulness (Mittal, 1994).

**Gender Different Behavior on the Web**

It is believed that males are more likely than women to search for product or service information (Rodgers & Harris, 2003) and exhibit more positive attitudes toward advertising on the Web in general versus female due to the interactivity (O’Donohue, 1995). Rodgers and Sheldon (1999) found that male students also reported better overall attitudes toward e-shopping than did female students. Other researchers have found similar results, suggesting that males use the Internet for shopping purposes more than females (Rodgers & Cannon, 2000; Wells & Chen, 1999).

Since there exists differentiation in information processing between the gender
(Rodgers & Harris, 2003), as the previous researches mentioned that male processing entails effortful elaboration of the message content (Meyer-Levy & Maheswaran, 1991), while females tend to process the message content focusing on peripheral cues (Brunel & Nelson, 2003; Darely & Smith, 1995). In other words, female is likely to engage in a easily comprehensive elaboration and more emotionally attached to the possessions than male (Barone, Palan, & Miniard, 2004).

From Meyers-Levy’s (1994) finding purports that males rely heavily on right-hemisphere processing, denoted by reliance on global rules and other categorical concepts in processing information, whereas females primarily rely on left-hemisphere processing which concern the specificities and are implied by stimulus information. If this is true, then we might expect differences in the manner in which male/female perceives persuasion from online Web ads. In the concept of gender difference, female is likely to engage in a easily comprehensive elaboration and more emotionally attached to the possessions than male (Barone, Palan, & Miniard, 2004). Debare (1996) addressed that women juggle several roles and do not have the time to learn about the new technologies such as the Internet. Females’ affinity for pictorial presentations will tend to demonstrate integrative processing (Brunel & Nelson, 2003, p.331).

Given that females process information more deeply than males, they are also likely to be sensitive to use more information cues than female. Hence, we propose that,

\[ H2a: \text{Males than females will evaluate a rational Internet advertising appeal with stronger belief.} \]

\[ H2b: \text{Females than males will evaluate an emotional Internet advertising appeal with stronger belief.} \]

**METHODOLOGY**

**Overview**

By using a behavioral online environment database at a Web site along with individual advertising exposure, we measure the impact of different appeal,
involvement on gender’s beliefs toward the web ad. To surmount old methods and make a breakthrough in online consumer behavior research, a $2\times2\times2$ ANOVA between-subjects experimental design---is used to guide the research design and the systematic analysis procedure; the manipulated constructs is (1) advertising appeals (rational/emotional) and moderator are (1) level of personal involvement (high/low), (2) the gender (male/female). A fictitious digital camera is used as a high-involvement experimental product and a fictitious toy as a low-involvement one (which were selected from the pilot test). These subjects are Internet users all with online shopping experience. We designed 4 kinds of combinations of web ads which had identical layout to measure subjects’ ad belief with a battery of 7 point Likert scale.

Also, these experiments conducted an online feedback by cooperating with one well-known Website in Taiwan (www.payeasy.com.tw), which was rating as in the top ten shopping Webs in Taiwan (source from: www.pchome.com.tw/2008-03-01.phtml). Samples randomly chosen from their database and e-mails were sent to Website’s newsletter subscribers’ e-mail addresses according to Web databases. Different Internet advertisements were developed to remove extraneous factors when existing Internet advertisements were used. Interface designs, layers of information, and layouts for Internet advertisements were made identical to control for potential confounding variables. Only pictures of the products, fictional brand name, and product description were manipulated to correspond to product characteristics and advertising appeals.

**Measurement Variables**

**Dependent Variable:**

*Web Advertising Interest or Belief:*

This construct is specified here on six dimensions: (1) enjoyable, (2) offensive, (3) informative, (4) deceptive, (5) annoying, and (6) useful (Mittal, 1994). Six items of questions were provided (Appendix B).
**Manipulated Variable:**

**Advertising Appeals**

In this study, a rational appeal was manipulated such as the arguments (with hyperlink text to link for greater information to satisfy online customers’ intrinsic need for information and cognition) contained strong messages in support of the product function and characteristics. Whereas an emotional appeal showed attractive animation or pictures with less message-related thinking; rather it induced the customers to focus more likely on available peripheral cues.

**Moderators:**

**Personal Involvement Levels**

This manipulation is specified here as virtual products in an online environment. Two treatments of personal and product involvement levels (high/low-involvement) provided. The high-involvement product: a fictitious digital camera branded “U-400” chosen from the pretest result; on the other hand, the low-involvement one is a fictitious toy.

**Gender**

“Gender” contained two treatments “the male” and “the female.”

**Controlled Variables:**

Consumers’ beliefs to the ad is found to be comprised and affected by factors such as, the congruence of the web, and other salient factors (e.g., online experience, brand loyalty, cognition of featuring; etc.) that might affect consumers overall perception (Sherman & Deighton, 2001). However, our major purpose is to investigate the main and interactive effects of advertising appeals, personal and product involvement levels and the gender difference (female/male); therefore, we choose subjects that have online shopping experience and considered other variables (e.g., product information searching and limited control over web ad layout) as controlled variables.
Pilot Test

Conducting a pretest, we evaluated the content validity of the items by subjecting them to 160 college students in department of business administration at the Transworld University in middle Taiwan and 160 working adults all with online shopping experiences (The proportion of male/female for participants in the pilot test is equal). The survey site was hyperlinked to a web within our school server. The experiments employed separate between-group subject designs individually, where each subject was randomly exposed to experimental treatments. Each website with different web advertising presentation format was embedded. Subjects were told that the purpose of the study was to evaluate a new website with an ad. The last part of each website was linked to a web page containing a questionnaire.

Before each subject was exposed to experimental material, each subject's level of involvement was first measured. Rather than looking only at one aspect of involvement, a multiple-indicator measure, consisting of “personal and product involvement” was constructed. The question items consisted of seven semantic differential scales: interesting/boring, important/not important, involving/not involving, relevant/not relevant, arousing/not arousing, whether planning to purchase in the next six months and whether making subjects continue thinking about the product. The questions are similar to what have been used to measure personal involvement in earlier studies (Cacioppo & Petty, 1982). Twenty product categories were used to measure the level of involvement. Those are all virtual products categories used in the experiment (e.g., clothing, camera, sunglass, shoe, bicycle, book, toy, et. al.). After pretest, we chose the digital camera as the highest involvement product ($X_{mean} = 6.35; p < 0.1$) and the toy ($X_{mean} = 1.15; p < 0.1$) as the lowest involvement one.

Also, it was thought necessary to examine whether male and female participants identified with the advertising appeals to the same degree. Divided the subjects into a different male/female part, for emotional appeal, the scores on the six items, all $F$ values are not significant. That is, the gender did not have different view on advertising appeal. Thus, the advertising, we can say that probably did not contain any gender bias preventing either group from identifying with the advertising content.
After that, we design 2×2 appeals (rational and emotional) of the ads for the highest and the lowest personal involved products from the pretest; each subject was randomly selected to the cells, and in each experimental group was given a questionnaire to answer that was divided into two parts. For Part I, each subject was asked to answer questions by viewing the ad placed on each Web site. First, each subject saw the very first Web site, including an ad, and was asked to respond to the items of manipulated constructs and measured his/her interest or belief toward the ad. The measurement scales are included in Appendix B.

After completing Part I, each subject was asked to continue with Part II of the questionnaire, which asked him/her several questions about his/her demographic information. The participation for each subject took approximately 10 minutes.

To stimulate response, we promised to offer a bookstore gift certificate worth US$3 for participants completed all questionnaires. Pretest showed that this was an attractive stimulus for tasks such as this.

Prior to testing the hypotheses, a reliability analysis for these constructs is reported in Table 1. Also the varimax solution was applied to get the final communality (variance extracted) and estimates. The varimax figures show satisfactory level (> 0.5) of average variance extracted (Fornell & Larcker, 1981). Reliability factor indicated high internal consistency for those constructs, which together with statistical properties indicates that the three theoretical constructs assess convergent validity by variance extracted (.5) (Fornell & Larcker, 1981). As a type of validity check, aggregated scores on the items were correlated with scores on the single item. Therefore, we employed this simpler, one-item measure of constructs as our bases for classifying a subject’s status.

We tested the dependent construct—consumers’ belief toward the web advertising to form an overall beliefs toward the Internet ads index (α = 0.86). Thus, we deemed our scale adequate for consistency of this study.

We also tested for any significant differences between constructs by independent sample t-tests, and from t-tests results, it was found that participants have significant difference on the pretest contents provided by researchers, which means that the operation of the research’s variables is success (Hair et al., 1998). The t-test results and reliability of the three constructs were showed as Table 1.
TABLE 1 Results of pretest

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Treatments</th>
<th>Mean</th>
<th>Standard Error</th>
<th>t-value</th>
<th>Reliability (α)</th>
<th>Variance Extracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising appeals</td>
<td>Rational</td>
<td>5.8</td>
<td>0.53</td>
<td>-3.23**</td>
<td>0.89</td>
<td>0.76</td>
</tr>
<tr>
<td></td>
<td>Emotional</td>
<td>5.4</td>
<td>0.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>5.1</td>
<td>0.48</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal and product involvement</td>
<td>Low</td>
<td>2.5</td>
<td>0.42</td>
<td>-3.62**</td>
<td>0.90</td>
<td>0.73</td>
</tr>
<tr>
<td>Belief toward the Web ad</td>
<td>Six items</td>
<td>5.8</td>
<td>0.46</td>
<td>5.00**</td>
<td>0.86</td>
<td>0.72</td>
</tr>
</tbody>
</table>

** p<0.01, * p<0.05

Main Experiment Procedures

Data Collection

We chose respondents from database (offered by: www.payeasy.com.tw) to send e-mail. The subjects were randomly selected from the members and divided into two kinds of e-mail groups (male/female) to review the web advertising and then complete the online survey. To prevent redundant replies, the members must key in his/her account number, the password and his/her identification number, then they can enter to participate the online investigative. If he/she is redundant replied, the program will tell him/her “You have replied this questionnaire, Sorry! It’s unable to reply once more.”

Participants rated themselves on the following self-referencing items (Appendix B) after viewing the advertisement. And the Cronbach’ α of the constructs are more than 0.84, therefore, we can say that the manipulated constructs are successful. Also, Prizes (i-pod nano) were offered for randomly selected winners from all completed questionnaires and sent to his/her address in the database. Data collection in this study was still considered a randomly selected sample from the customer database. The samples characteristics were showed in details in the following sections.

One thousand e-mails were sent to the customers with online experience, and 625 customers have finished the online questionnaire (the respondent rate is nearly 62.5%). Out of 625 surveys, 591 were usable for the analysis in this research (the others are uncompleted or outliers).

Chen and He (2003) stated that online population is highly educated with over 50 percent having a college education or higher. NTIA and ESA (2003) noted that online shopping is particularly common (53 percent) among Internet users 20-34 years old. That is identical to the result of this study (showed as Table 2). Male composed 51.5% (or 304) of the sample, 48.5% (or 287) of the sample were females. The majority 72.6%
of the subjects were 20-40 years of age, with a mean age of 26.0 years. Demographically, the male and female respondents were similar in age (about 75% of both men and women were under 25 years; $\chi^2(5) = 1.41, p>0.1$) with similar education levels (around 68% of both men and women had college degree; $\chi^2(3) = 5.66, p>0.1$). Also males and females had similar online purchase habits ($\chi^2(3) = 1.92, p>0.1$). The information showed the sample was representative of the online population. The samples’ characteristics were showed as Table 2.

### TABLE 2 Sample characteristics of experiment

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>51.5</td>
</tr>
<tr>
<td>Female</td>
<td>48.5</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>Under 10 years</td>
<td>0</td>
</tr>
<tr>
<td>10-20 years</td>
<td>6.8</td>
</tr>
<tr>
<td>21-30 years</td>
<td>49.5</td>
</tr>
<tr>
<td>31-40 years</td>
<td>23.1</td>
</tr>
<tr>
<td>41-50 years</td>
<td>14.1</td>
</tr>
<tr>
<td>Over 50 years</td>
<td>7.1</td>
</tr>
<tr>
<td><strong>Education level</strong></td>
<td></td>
</tr>
<tr>
<td>Under high/trade school</td>
<td>3.3</td>
</tr>
<tr>
<td>High/trade school</td>
<td>8.3</td>
</tr>
<tr>
<td>College</td>
<td>69.7</td>
</tr>
<tr>
<td>Post college graduate</td>
<td>18.7</td>
</tr>
<tr>
<td><strong>Online purchase frequency</strong></td>
<td></td>
</tr>
<tr>
<td>Below one time/per month</td>
<td>23.5</td>
</tr>
<tr>
<td>1-2 times/per month</td>
<td>44.1</td>
</tr>
<tr>
<td>3-4 times/per month</td>
<td>16.5</td>
</tr>
<tr>
<td>Over 4 times/per month</td>
<td>15.9</td>
</tr>
</tbody>
</table>

### ANALYSIS AND RESULTS

The purpose of this experiment is to examine the interactive effects of those constructs mentioned above. The tests results are showed as Table 3 and ANOVA test Results are showed as Table 4.

#### Main Effects of the Experiment

Results in Table 4 significantly show that sample subjects’ beliefs for ad are separately affected by advertising appeals, the personal involvement and the difference of gender (the simple main effect of p-values are significant). Also from Table 3, the mean values also indicate that females’ beliefs for emotional ad will be more positive.
than male’ no matter in high or low-involvement product, which is an additional finding.

TABLE 3 Operational results of constructs

<table>
<thead>
<tr>
<th>Group</th>
<th>Rational appeal ad</th>
<th>Emotional appeal ad</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>High personal and product involvement Male</td>
<td>4.2</td>
<td>0.25</td>
</tr>
<tr>
<td>Low personal and product involvement Male</td>
<td>2.4</td>
<td>0.27</td>
</tr>
<tr>
<td>Gender Female High personal and product involvement</td>
<td>3.8</td>
<td>0.19</td>
</tr>
<tr>
<td>Low personal and product involvement Female</td>
<td>2.5</td>
<td>0.20</td>
</tr>
</tbody>
</table>

** p<0.01, * p<0.05

TABLE 4 ANOVA test results

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>df</th>
<th>Mean of Square</th>
<th>F-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ad appeals (1)</td>
<td>1</td>
<td>170.81</td>
<td>465.47</td>
<td>0.00**</td>
</tr>
<tr>
<td>Gender (2)</td>
<td>1</td>
<td>10.38</td>
<td>28.28</td>
<td>0.00**</td>
</tr>
<tr>
<td>Personal and product involvement (3)</td>
<td>1</td>
<td>8.19</td>
<td>22.32</td>
<td>0.00**</td>
</tr>
<tr>
<td>1×2</td>
<td>1</td>
<td>5.55</td>
<td>15.13</td>
<td>0.00**</td>
</tr>
<tr>
<td>1×3</td>
<td>1</td>
<td>72.67</td>
<td>198.03</td>
<td>0.00**</td>
</tr>
<tr>
<td>2×3</td>
<td>1</td>
<td>3.85</td>
<td>10.51</td>
<td>0.01*</td>
</tr>
<tr>
<td>1×2×3</td>
<td>1</td>
<td>4.68</td>
<td>12.75</td>
<td>0.00**</td>
</tr>
<tr>
<td>Error</td>
<td>584</td>
<td>0.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>591</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** p<0.01, * p<0.05
Interactive Effects of the Experiment

As results show in Table 4, through a three-way ANOVA analysis, this finding results in two conditions:

1. As can be seen (Figure 1), a high involvement people will increase their Web ad belief when the ad has been presented by a rational appeal; a rational appeal ad increases their web ad belief despite the difference of involvement (Mean$_{\text{rational}} = 4.00$ vs. Mean$_{\text{emotional}} = 2.49$, the difference is statistically significant); in a low involved situation, people prefer the emotional appeal design (Mean$_{\text{emotional}} = 3.50$ vs. Mean$_{\text{rational}} = 2.80$, the difference is statistically significant). The interaction test does stand the hypotheses $H1a$ and $H1b$.

2. Figure 2 shows that male will have more positive beliefs for web ad when the ad has been presented by a rational appeal way; (Mean$_{\text{male}} = 3.40$ vs. Mean$_{\text{female}} = 2.85$, the difference is statistically significant); for emotional appeal situation, female prefer the emotional appeal design (Mean$_{\text{female}} = 3.49$ vs. Mean$_{\text{male}} = 3.15$, the difference is statistically significant). The interaction test confirms the hypotheses $H2a$ and $H2b$. Therefore, one may conclude that male may have more favorable interest or belief toward an advertisement presented in a rational way than an advertisement presented in an emotional way.

![FIGURE 1 Interactive effects of involvement and appeal](image1.png)

![FIGURE 2 Interactive effects of gender and appeal](image2.png)

Note: 1(High involvement, Male, Rational appeal); 2(Low involvement, Female, Emotional appeal)
In our experiment, it can be explained by the interactive effects that male prefer the rational advertising on the Internet because of the messages delivered. The result is consistent with promotional emails studies (e.g., Phillip & Suri, 2004). Our findings reveal that men in our sample are less satisfied with emotional ads than female, presumably because they are skeptical of its informational content and unfavorable with the clutter ads. From previous research (Weiser, 2000; Brunel & Nelsen, 2003), it is argued that many consumers choose not to click the ad because of an aversion to the amount and clutter of ads on the Internet. Information theory suggests that anything that impairs efficient interactivities between consumers and advertiser, such as placement, timing, and size of ads, can affect perception and be viewed as clutter. Therefore, Internet advertisers and publishers should understand that too much ad clutter could possibly reduce the collective effectiveness of Internet advertising.

CONCLUSIONS AND LIMITATIONS

Theoretical Discussion

The objective of this study was to provide insight into antecedents influencing male/female advertising belief on the Internet and to test their proposed inter-relationships. In pursing that goal, a $2\times2\times2$ between-subject online experiment was designed. An on-line survey of Internet users was employed to support the hypotheses, and to suggest additional implications. Possible contributions of the present study are threefold.

Firstly, this study explores the different behavior of gender’s exposure to ads on advertising responses such as advertising awareness, clicking of ads, and ad attitude. As predicted, the rational advertising appeal can attract the high involvement people to click the ad (H1a & H1b).

Secondly, this study offers the first attempt to build a comprehensive thought explaining the behavior of males’/females’ clicking ad on the Internet. Finally, it employs gender antecedent, whereas previous studies have not explored. This yielded a significantly higher explained variance than previous ad studies on Internet.

In light of the limitations stated above, future research in this area should be
suggested to include research on different gender’s information processing of Internet advertising. In this sense, this paper provides some groundwork in this field. Most studies on Internet advertising have been conducted by web publishers on audience measurement data (e.g., how many people visit their sites, or how many people are exposed to ads, etc.). But this kind of result-oriented data does not provide the understanding of consumers' step-by-step information processing (e.g., why people click ads and why they click one ad more than another). In conclusion, information processing of Internet advertising is too important to leave unstudied, therefore, more future studies on this area are strongly recommended.

Managerial Implications

Marketers pay too much attention to build brand awareness and forget to focus more changes in their consumers’ information processing behavior: more difficult but more important things to target. Says Peter Hull, IPA Consultant Head of Marketing and Reputation Marketing, “just because it’s easy, doesn’t mean it is right to the market profession.” Also, Les Binet says, “So much of what is written about marketing is based on ideas about how is SHOULD work. We should look at what actually DOES work.”

This paper provides managerial implication for online market strategy maker to manipulate the gender orientation advertising (male, female or neutral). Practically, this paper shows marketers that they can manipulate Web advertising appeal type using different personal and product involvement. From managerial implication point of view, the findings of this study suggests that anything that impairs efficient interactivities between consumers and advertiser, such as placement, timing, and size of ads, can affect perception and be viewed as clutter. Therefore, Internet advertisers and publishers should understand that too much ad clutter could possibly reduce the collective effectiveness of Internet advertising.

Limitations

Our experiment was conducted with particular manipulations of the advertising
appeal, personal and product involvement and the gender difference. We note three limitations of our experimental results.

Firstly, the study focused on the role of involvement and exposure way in consumers’ clicking ad intention without offering a micro-level explanation of the mechanism by which this happens. That is, there are different psychological factors affecting consumers’ clicking the ad, such avoidance behaviors as, prior negative experience, the context of ad; etc. To develop consumer continuance intention for clicking Internet ads, it is essential to create consumer satisfaction toward ad services and increase perceived incentive and utility for clicking on ads.

Secondly, the presence and importance of avoidance reasons may vary with specific user situations, not only for involvement reason. For example, people who search for specific information in a limited amount of time may have different reasons for avoiding ads on the Internet (e.g., time pressure, irrelevant or non-targeted ads, no cognitive resources to devote to ads, etc.) than those who use the Internet to pass time or for pure entertainment purposes, and whose possible avoidance reasons may include “Internet ads are not fun, trustful, practical,” and so forth. Therefore, the future study for consumers’ behavior on the Internet should be discussed more in details.

In addition, in our research the processing conditions involved forced exposure to a single ad on the web, which is likely to heighten the extent of processing for this ad. Accordingly, additional research is needed to determine whether the results presented here generalize to different processing for kinds of ads and observed in actual consumer contexts.

**FUTURE RESEARCH**

This study attempts to fill the gap in the Internet advertising literature by researching the effects on different genders’ motivations toward advertising appeals. The investigation of human cognition and behavior in the virtual world seems to be a task that is as interesting as it is complex. As evidenced by the research project, the investigation of the interest or belief toward the product and persuasion in the virtual world appears to be a field in need of systematic-programmatic research; specially, the
further research should consider the different cognitions of diverse gender samples. Giving the complexity of Internet consumer behavior as suggested by scholars, more researches are clearly needed.

1. Although the measured data in this study is randomly selected from the customer database (which all the samples have online shopping experience) on “www.payeasy.com.tw”, these are convenient samples. Many scholars have pointed out the study of online consumer behavior is often deterred by the difficulty in complete set of data to represent their characters. Unfortunately, due to the technical constraints, this study did not collect other Website customer data on this aspect. Future study should aim to investigate other homogeneous Website customers and comparison from these online customers. Also, it needs to investigate the online customers in the pretest in the future research.

2. This paper has shed lights on certain aspects of gender behavior and reactions toward Internet advertising; however, the results suggest that online gender motivations have effects on their searching, purchase behavior by viewing different appeals of Internet ads. The further work should aim to measure the different online searching motivations among gender.

3. As Suchman (1987) stated that it may be unrealistic to understand human behavior without capturing linear, sequential, or dynamic aspects of consumer interactions with an Internet advertising. Therefore, future research might employ the dynamic analysis to develop research framework and hypotheses.

4. Another issue that may warrant further investigation is the audience’s ability to process information. Given that the text in an argument-specific Web site in technical, it may be useful to investigate whether the effect of Web site elements is found only in audience lacking the ability to process such technical information. Ability to process is another motivational attribute and it would be useful to examine the effect of Web site design elements on another motivational attribute in additional to involvement.
REFERENCES


DeBare, I. 1996. Women lining up to explore online.


Weiser, E. B. 2000. Gender differences in Internet use patterns and Internet


APPENDIX A
Two Examples of the Experiment Advertisings

A low involvement and emotional appeal advertisement

Note:
1: Low-involvement product: a toy
2: Emotional advertising appeal: showing attractive animation/pictures with less message-related thinking; rather it induced the customers to focus more likely on available peripheral cues.
A high involvement and rational appeal advertisement

Note:

1: How-involvement product: a virtual digital camera

2: Rational advertising appeal: showing the arguments (with hyperlinked text to link for greater information to satisfy online customers’ intrinsic need for information and cognition) contained strong messages in support of the product function and characteristics

3. By clicking “2”: it hyperlinks to “3” web page which showing more products information in details.
APPENDIX B
Manipulate Constructs

(7 point Likert Scales: 1 = Strongly Disagree; 7 = Strongly Agree)

Advertising Appeals Scales (Modified from: Beatty and Smith, 1987; Srinivasan and Ratchford, 1991)

After viewing the ad, how likely is that ____________

<table>
<thead>
<tr>
<th>Item</th>
<th>Item-Total Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I can distinguish the ad appeal.</td>
</tr>
<tr>
<td>2.</td>
<td>I would look at the product function in details.</td>
</tr>
<tr>
<td>3.</td>
<td>The ad can concentrate me on the product’s characteristics and function.</td>
</tr>
<tr>
<td>4.</td>
<td>I was attracted for the pictures or animation on the ad.</td>
</tr>
<tr>
<td>5.</td>
<td>The ad attracts me on the enjoyment that the ad brought to me.</td>
</tr>
<tr>
<td>6.</td>
<td>The color, animator or picture on the ad attracts me.</td>
</tr>
</tbody>
</table>

(6 items, \( \alpha = 0.87 \))

Personal Involvement (Semantic Differential Scales: modified from Cacioppo and Petty, 1982)

How likely is it that you think the product in this ad?

<table>
<thead>
<tr>
<th>Item</th>
<th>Item-Total Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Interesting-------- ----------------------Boring</td>
</tr>
<tr>
<td>2.</td>
<td>Important-------- ----------------------not important</td>
</tr>
<tr>
<td>3.</td>
<td>Involving-------- ----------------------not involving</td>
</tr>
<tr>
<td>4.</td>
<td>Relevant-------- ----------------------not relevant</td>
</tr>
<tr>
<td>5.</td>
<td>Arousing-------- ----------------------not arousing</td>
</tr>
<tr>
<td>6.</td>
<td>Whether planning to purchase in the next six months --------not at all</td>
</tr>
<tr>
<td>7.</td>
<td>Make you continue thinking about this product --------not thinking at all</td>
</tr>
</tbody>
</table>

(7 items, \( \alpha = 0.84 \))

Gender (subject chooses his/her gender)

Dependent Variables

Consumers’ Interest or Belief toward the web ads (Modified from: Bemmaor, 1995; Mittal, 1994; Pollay and Mottal, 1993)

After viewing the ad, ____________?

<table>
<thead>
<tr>
<th>Item</th>
<th>Item-Total Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I feel the ad is enjoyable.</td>
</tr>
<tr>
<td>2.</td>
<td>I feel the ad is offensive.</td>
</tr>
<tr>
<td>3.</td>
<td>I feel the ad is informative.</td>
</tr>
<tr>
<td>4.</td>
<td>I feel the ad is deceptive.</td>
</tr>
<tr>
<td>5.</td>
<td>I feel the ad is annoying.</td>
</tr>
<tr>
<td>6.</td>
<td>I feel the ad is useful.</td>
</tr>
</tbody>
</table>

(6 items, \( \alpha = 0.85 \))
Biographical Sketch

Huei-Chen Hsu is an associate professor of Department of Marketing Management, Transworld Institute of Technology in Taiwan. Her research interest is in the area of consumer’s behavior in marketing. She has published her papers in *Journal of Advertising, Journal of Food Products Marketing, Journal of Technology Management in China* and *Journal of Knowledge Organization*, etc.
網路廣告如何影響男女的廣告信念？

許慧珍
環球技術學院行銷管理系副教授

中文摘要
一直以來，網路業者對於網路廣告投入相當多的資源，但是，卻很少注意到網路
男女消費者對於網路廣告態度是否看法不同。本研究以「推敲可能模式」(ELM)，
試圖探討男女對於網路廣告的信息內容及呈現方式的感受信念是否有差異。與網
路業者 (www.payeasy.com.tw) 合作，藉由其購物者資料庫做網路廣告態度的網路
問卷調查。實驗中所操弄的變項有：(1) 廣告訴求 (理性/感性)；干擾變項有：(1)
產品涉入程度 (高/低)；(2) 男女；而依變項則是「網路廣告信念」。實驗採單變
量組間實驗設計。男女對於網路廣告的態度研究結果發現：(1) 男女皆喜歡高涉入
程度產品以理性廣告呈現的方式；而低涉入程度產品則以感性廣告呈現；(2) 男性
比較喜歡理性廣告；而女性比較喜歡感性廣告。針對研究的發現，也提出對於網
路業者在網路廣告的管理建議。

關鍵詞：推敲可能模式、廣告訴求、產品涉入程度、廣告信念

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