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Which One is More Annoying? Comparing the Cognitive, Affective and Conative Effects of Button Ads and Pop-up Ads

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Abstract: This study tries to find out whether Internet users tend to deliberately ignore Internet ads regardless of the format, and whether users tend to dislike pop-up ads more than button ads and are more likely to take action to avoid the former. The hierarchy of effects model is applied to explore the above questions. In addition, this study also attempt to probe if demographic variables and Internet use are able to significantly predict the cognitive, affective, and conative effects for those two kinds of Internet ads. An online survey was conducted by Taiwan's InsightXplorer Limited, which returned a random sample of 1,078 Internet users[1]. The results showed a significant difference between button ads and pop-up ads in their cognitive, affective and conative effects. Respondents tended to ignore and dislike the pop-up ads more than the button ads. They were also more likely to take action against the pop-up ads. Furthermore, the older the respondents were, the more they tended to ignore and dislike the button ads. Male respondents were more likely to hate the button ads and take action against them. The frequency of Internet use correlated positively to the likelihood of taking action against the ads.

Key words: button ad; pop-up ad; the hierarchy of effects model; cognitive effect; affective effect; conative effect

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1. Introduction

Having one's sight blocked by a lot of Internet advertisements while accessing a web portal for information must be an experience familiar to every Internet user. Based on the IAB Internet Advertising Revenue Report (2013), Internet advertising revenues surged to a landmark $20.1 billion in the first half of the year, an 18% increase over the previous year's first-half revenues of $17 billion. Clearly, advertisers are devoting big money to the new media. However, do Internet advertisements really have as powerful an effect on consumers as is generally expected?

According to Dijkstra, Buijtels and Van Raaig (2005), the effectiveness of Internet advertising can be judged in terms of its cognitive, affective and behavioral effects, where affective effect refers to favorable attitudes or feelings toward the product and behavioral or conative effect refers to the buying intention and actual purchase.

With so much advertising on the web, do Internet users even pay attention to the advertisements, less have a

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1 The sample was drawn from InsightXplorer's Cyber Panel database, the biggest database in Taiwan containing detailed data on more than 120,000 Internet users and covers the whole spectrum of professions and age groups.

positive attitude toward them? As Becker-Olsen (2003) pointed out, it has become challenging for advertisers to catch consumers' attention among so many messages and to reduce ad avoidance behavior such as banner blindness.

Internet ad avoidance undoubtedly occurs quite often. Cho and Cheon (2004) argued that Internet ad avoidance can also be looked at in cognitive, affective, and behavioral terms. In cognitive ad avoidance, users tend to pay no attention to or ignore the ads; in affective ad avoidance, users tend to have negative attitudes toward the ads; and in behavioral ad avoidance, users might scroll down the web pages, close the windows, click away from the windows, or do anything they can to avoid the ads on the screen.

New forms of Internet ads, such as pop-up ads, have been created with the aim of catching users' attention, perhaps in response to stationary ads (e.g., button ads) becoming ineffective. But do pop-up ads really have the ability to "pop" into users' eyes, so to speak? Studies have found that pop-up ads are considered the most annoying type of advertisement by Internet users (e.g., Coursey, 2001). Is it possible that pop-up ads do not function as expected because of their irritativeness? Conversely, do Internet users have a more positive attitude toward button ads because they are less annoying? Or has banner blindness become too set in among today's Internet users? This study will try to find out whether Internet users tend to deliberately ignore Internet ads regardless of the format, and whether users tend to dislike pop-up ads more than button ads and are more likely to take action to avoid the former.

Furthermore, since the effectiveness of Internet ads may be different among users of different gender, age, and frequency of Internet use, this study will also try to determine whether the above variables are able to significantly predict the effectiveness of pop-up ads and button ads.

2. Status of Internet Advertising

2.1 Internet Advertising

With the rapid development of the Internet and its emphasis on multi-way communications, more and more consumers are now engaged in online brand-related activities. Nielsen's latest Global Adview Pulse Lite Report (2013) showed that global ad spending grew 3.5% for the second quarter of 2013 and was up 2.8% year-over-over for the January to June period. The Report estimated an ad spending total of $160.7 billion for the second half of 2013. In Taiwan, research data from the Digital Marketing Association (2013) reveals that in the first half of 2013, revenue for Taiwan's digital advertising market reached NT$6.265 billion (about US$200 million), of which NT$2.934 billion came from website advertising, accounting for 46.8% of the total. This supports the above-mentioned view that advertisers regard the Internet as a useful marketing communication tool.

According to Briggs and Hollis (1997), the first commercial banner ad was shown on HotWired.com in 1994, and since then, banners have become the most prevalent ad format on the Internet. The multimedia nature of the Internet has propelled the development of new ad formats that utilize voice, video and text messages in combination. These include button ads, banner ads, pop-up ads, paid text links, sponsorships, target sites, superstitials, and e-mail ads (Zeff & Aronson, 1999). As Internet advertising advanced, more innovative types of ads have appeared, such as larger interactive ads, HTML e-mails, and streaming pop-up ads (Diao & Sundar, 2004). In particular, the emergence of Java, Macromedia Flash, Macromedia Shockwave, (D)HTML, VRML, and other technologies have made possible online ads with live-motion graphics similar to television commercials, which have been utilized to attract consumers' attention (Edwards, Li, & Lee, 2002).

2.2 Button ads & Pop-up Ads

Internet advertising is usually delivered in the form of banner or pop-up ads. They are different in format technically. The IAB Ad Unit Guidelines (2003) define banner ads as the usually horizontal, rectangular-shaped graphical elements found on a web page that are displayed as a peripheral (i.e., on the top, bottom, right or left side). Button ads can be considered a small type of banner ads, and can be placed anywhere on the page as links to the advertiser or branding websites. Ideally, ads should encourage consumers to click on them and thus be taken to the advertiser's target communication and any additional information.

A pop-up ad consists of a small window containing text, graphics, and any other information designed to enhance advertising effectiveness (Diao & Sundar, 2004). This small window is able to jump into sight when people enter a site, and sometimes when they leave it (Beard, 2001). Also called interstitials, pop-up ads structurally force Internet users to be exposed to the advertising, as they are designed to be "automatically launched" in a new browser window (Edwards, Li, & Lee, 2002). When a pop-up ad is showing, it will remain for a certain amount of time until users close or minimize the window.

3. The Effects of Internet Ads

3.1 Advertising Effectiveness

Advertising effectiveness is defined as the measurement of the results of an advertising campaign or of a particular commercial, in terms of the achievement of the advertising objectives initially set out by the advertiser (Beerli & Santana, 1999). From this, we infer that the effectiveness of advertising can be gauged by exploring the achievement of the advertising objectives.

Lavidge and Steiner (1961) put forth a hierarchy of effects model in which advertising effectiveness is distinguished into three dimensions, namely, advertising's cognitive, affective, and conative effects. These three dimensions stem in concept from a classical psychological model, but Lavidge and Steiner further related them to advertising objectives, in that consumers should be moved by the cognitive effect to awareness and knowledge of the product, by the affective effect to favorable attitudes to and preference for the product, and by the conative effect to the action of purchasing the product. To expound: in the step of awareness and knowledge, consumers are aware of the existence of the product and know what the product offers; in the step of developing favorable attitudes, consumers tend to have a preference for the product; and in the step of purchase, they translate their attitude into actual buying behavior. When these objectives are achieved, we can conclude that the advertising has been effective.

3.2 The Effects of Internet Advertising

Banner ads are designed first to grab a user's attention and second to induce the user to click on them (Dreze & Hussherr, 2003), and click through rate (CTR) is one of the most commonly used indicators to measure the effectiveness of online advertising (Chandon, Chtourou & Fortin, 2003). Moreover, although banner ads are utilized primarily as a means to increase web traffic, viewing banner ads has been linked to enhanced brand awareness, brand preference, and purchase intention among consumers (Briggs & Hollis, 1997).

In their model using cognitive, affective, and conative responses from consumers to measure the effectiveness of Internet advertising, Dijkstra, Buijtels and Raaig (2005) refer to affective effect as favorable attitudes or feelings toward the product and conative effect as buying intention and actual purchase. Coursaris, Sung and Swierenga (2010) defined the intention of clicking through an ad as a conative effect. Similarly,

Voorveld (2011) applied the above three responses from consumers to measure advertising effectiveness in relation to media multitasking.

In developing his Internet Advertising Consumer Model, Flores (2000) also separated advertising objectives into cognitive effect (being exposed to an ad, noticing and getting the message of the ad) which he named recall and communication effect, affective effect (changing attitude) which he named persuasion of attitude change, and conative effect (changing behavior) which he named persuasion of behavior change. However, he further pointed out that, because the Internet is an interactive medium that gives the consumer control over his/her reception of communications, it is more important for ads to "involve the consumer rather than to disturb his/her surfing experience". On this basis, Flores included the measure of alienation in his model, where minimization of this effect should contribute positively to advertising effectiveness.

Is it possible that consumers not only can feel alienated by Internet ads, but can even have a hostile attitude toward them? Apart from a dislike of banner ads (Bass, 1999), some Internet users develop strategies to avoid giving attention to Internet advertising (Dreze & Hussherr, 2003), and the low CTR of banner advertising can be attributed to Internet users refusing to look at banner ads during their online activities. According to Filloux (2009), the average time Internet users spend viewing a web page is less than 40 seconds, so we could hardly expect them to spend any longer on online ads. It can be confirmed that ad avoidance has become a regular behavior among Internet users.

Cho and Chen (2004) applied the three dimensions of cognition, affection and conation to Internet ad avoidance. Cognitive ad avoidance is where surfers pay no attention to or ignore ads like banners and pop-ups; affective ad avoidance is where surfers hate and maintain negative attitudes toward the ads; and behavioral ad avoidance is where surfers may scroll down the web pages, close the windows, click away from the windows, or do anything they can to avoid the ads.

Following from the above findings, this study will try to explore the negative effects of Internet advertising and whether Internet users would ignore Internet ads (cognitive effect), dislike Internet ads (affective effect) and even take action to avoid Internet ads (behavioral effect). In conducting the study, we will focus on button ads and pop-up ads, since they are the two primary forms of Internet ads placed on web portals. Moreover, pop-up ads are considered by Internet users to be the most annoying type of advertisement (Coursey, 2001), and can cause negative attitudes and reactance, leading to ad avoidance and feelings of irritation (e.g., Edwards, Li & Lee, 2002). On the other hand, although button ads are also considered an irritation, because they are stationary, they may not generate as strong an annoyance in users as pop-up ads. Thus, the following research question and hypotheses are put forward:

RQ1: Do Internet ads create negative cognitive, affective and conative effects in Internet users?

H1: People tend to deliberately ignore pop-up ads more than button ads

H2: People dislike pop-up ads more than button ads.

H3: Compared with button-ads, people are more likely to take action to avoid pop-up ads.

4. Demographic Variables & the Effects of Internet Advertising

The effects of Internet advertising are expected to vary as a function of consumers' demographic factors. For instance, in their study of mobile messaging ads from Multimedia Messaging Services that allow for image, audio and video contents, Coursaris et al. (2010) found that females were more likely to perceive informativeness from a

mobile messaging ad than males. In addition, they found that females had more positive attitudes toward a mobile messaging ad, with a stronger intention to click through or to know about the advertising brand.

Phillip and Suri (2004) noted that women tended to perceive certain attributes of promotional e-mails more favorably than men did, because they considered e-mails to be a source of product information (in that coupon information texts or links are monetary incentives). Similarly, women also evaluated the presence of links to additional sources of information more favorably than men did (e.g., Meyers-Levy & Maheswaran, 1991).

Furthermore, in a recent study conducted by Joshi, Bagherjeiran and Ratnaparkhi (2011), preference for certain advertising categories was proven to be correlative to the feature of user gender. For instance, female users were found to have stronger preference for the category of "apparel and jewelry" and male users for the category of "automotive/boats". Separately, it has been noted that male consumers were more likely to surf the web for functional and entertainment reasons, while female consumers tended to surf the web more to shop (Wolin & Korgaonka, 2003).

According to InsightXplorer's Monthly Report (2013, January), a significant percentage of the Internet ads displayed on web portals in Taiwan were those for clothing and accessories. For instance, a new clothing brand, Lativ, could reach an average of 9.62 million people a month with their Internet ads, an average exposure rate of 71.3%. Following from the above findings, this study hypothesizes that female respondents are less likely to hate button ads and take action to avoid them than male respondents.

Age might also be a predictor of the effects of Internet advertising. Older mobile users were found to have less favorable attitudes toward a mobile messaging ad than younger users (Coursaris et al., 2010), and older consumers were more likely to engage in ad avoidance toward media ads (Elliott & Speck, 1998). Thus, we propose the following hypotheses:

H4: Male respondents are more likely to dislike Internet ads and take action to avoid them than female respondents.

H5: The older the respondents are, the more likely they are to dislike Internet ads and take action to avoid them.

Consumers' use of the Internet is highly related to the purchasing of Internet-related products and services (Kwak, Fox, & Zinkhan, 2005). At the same time, a study by Dahlen (2001) indicated that less experienced users were more likely to click on banner ads than experienced users, where the CTR of users with less than six months' experience was four times greater than those with more than six months' experience. Accordingly, we hypothesize that frequency of Internet use might be a predictor of the conative effects of Internet advertising, in that higher frequency of Internet use would correlate to stronger ad avoidance behavior.

H6: Respondents with a higher frequency of Internet use are more likely to take action to avoid Internet ads.

5. Research Method

The InsightXplorer Limited in Taiwan was commissioned to conduct a formal online survey[2]. The sample was drawn from InsightXplorer's Cyber Panel database; the biggest database in Taiwan that contains detailed data on more than 120,000 Internet users and covers the whole spectrum of professions and age groups. A broadcast

2 Before the formal survey, an initial survey was conducted. The objective of the initial survey was to see whether the questionnaire is of proper length and whether the options of the multiple-choice questions are comprehensive. Then, based on the results of the initial survey and the suggestions of the prior literature, the questionnaire for the formal survey was constructed. The subjects of the initial survey were undergraduate and graduate students at FuJen Catholic University (Taiwan), 50 respondents were collected.

e-mail was sent to the respondents, inviting them to participate, with the direct URL link to the survey. Quotas were set on key demographic variables (gender and age) to ensure that the sample was representative of Taiwan Internet users.

An e-mail which describes the objective of the study was sent out as invitation for participation. Before filling out the formal questionnaire, participants were asked to view pop-up ads and button ads created by the researcher. Following from the finding of InsightXplorer's Monthly Report (2013, January) that web portals are where people most often encounter pop-up and button ads, the ads shown to the respondents were designed as they would appear on a web portal.

Those who chose to participate would click on a unique URL embedded in the message to access the survey website. The unique URL would prevent unauthorized access and would prevent any person from completing the survey more than once to ensure the reliability of the data.

6. Measurement

6.1 Dependent Variables: The Effects of Button Ads & Pop-up Ads

6.1.1 Cognitive Effect

Based on Cho & Cheon (2004), this variable was operationalized by the following statements: (1) I intentionally don't put my eyes on button ads/pop-up ads. (2) I intentionally don't pay attention to button ads/pop-up ads. Respondents were asked to rate the statements on a scale of 1 to 7, with 1 being "strongly disagree" and 7 being "strongly agree" (The results showed that the Cronbach's alpha value for the button ads was .85; the Cronbach's alpha value for the pop-up ads was .80).

6.1.2 Affective Effect

Based on the suggestions of Wolin, Korgaonkar and Lund (2002) and Cho and Cheon (2004), the variable of affective effect was assessed by asking the respondents whether they agree with the following statements: (1) I dislike button ads/pop-up ads. (2) It would be wonderful if there were no buttons ads/pup up ads on web portals. The 1-7 Likert scale was also used (The results showed that the Cronbach's alpha value for button ads was .85; the Cronbach's alpha value for the pop-up ads was .88).

6.1.3 Conative Effect

(1) For button ads

The question used to evaluate the conative effect of button ads was: Have you ever taken action to avoid button ads on a web portal (e.g., by scrolling down the web page)? Respondents were asked to rate their answer on a scale of 1 to 5, with 1 being "never", 2 being "seldom", 3 being "sometimes", 4 being "often", and 5 being "always". The measurement was based on the works of Cho and Cheon (2004).

(2) For pop-up ads

The question was: Have you ever taken action to avoid pop-up ads on a web portal (e.g., by closing the window or installing blocking software)? Respondents were again asked to rate their answer on a scale of 1 to 5, with 1 being "never", 2 being "seldom", 3 being "sometimes", 4 being "often", and 5 being "always". The above measurement was also based on the works of Cho and Cheon (2004).

6.2 Independent Variables

6.2.1 Demographic Variables

The respondents were also asked for their gender, age and education, where "age" was an open-ended

question, and five options were provided for "education": (1) Elementary school and below (2) Junior high school (3) Senior high school (4) College or university (5) Graduate school and above.

6.2.2 Internet Use

Based on Kwak, Fox, and Zinkhan (2005), the variable of Internet use was measured by the following question and answers:"On average, how many hours each day do you spend on the Internet?" (1) Less than one hour, (2) One to two hours, (3) Two to three hours, (4) Three to four hours, (5) Four to five hours, (6) Five to six hours, (7) Six to eight hours, (8) More than 8 hours.

7. Results

As set out in Table 1, 48.2% of the respondents reported that they would deliberately ignore button ads, while 62.4% of the respondents gave the same answer with respect to pop-up ads. 40.9% of the respondents said they dislike button ads, and 75.3% gave the same answer for pop-up ads. In addition, when asked whether they have ever taken action to avoid button ads (e.g., by scrolling down the web page), 12.2% of the respondents said they never have done so, but 17.6% of the respondents reported that they often or always have (as shown in Table 2). Concerning pop-up ads, 8.8% of the respondents claimed that they have never taken action to avoid pop-up ads (e.g., by closing the window or installing blocking software), but 38.3% of the respondents said they have often or always done so.

The above findings provide an answer to RQ1, namely, Internet ads do create negative cognitive, affective and conative effects in users. Over 40% of the respondents reported that they dislike button ads and would deliberately ignore them, and more than 60% of them gave the same response with respect to pop-up ads. In addition, nearly 40% of the respondents have always taken action to avoid pop-up ads.

In addition, the results presented in Table 3 show a significant difference between button ads and pop-up ads in their cognitive, affective and conative effects. Respondents tended to ignore pop-up ads (Mean = 4.88) more than they would ignore button ads (Mean = 4.40), and dislike pop-up ads (Mean = 5.52) more than button ads (Mean = 4.28). They were also more likely to take action to avoid pop-up ads (Mean = 3.18) than button ads (Mean = 2.73).

Based on the above results, we confirm that H1, H2 & H3 are supported.

Table 1 Cognitive and Affective Responses to Button Ads and Pop-up Ads

	Cognitive			Affective		
	Agree	Neither agree nor disagree	Disagree	Agree	Neither agree nor disagree	Disagree
Button Ads	48.2%	21.6%	30.2%	40.9%	29.1%	29%
Pop-up Ads	62.4%	15.5%	22.1%	75.3%	14.1%	10.6%

Note: N = 1158. On the Likert 7 scale, 1 is "strongly disagree", 7 is "strongly agree", and 4 is "neither agree nor disagree".

Table 2 Conative Response to Button Ads and Pop-up Ads

	Conative				
	Never	Seldom	Sometimes	Often	Always
Button Ads	12.2%	25.2%	45.2%	13.0%	4.6%
Pop-up Ads	8.8%	18.5%	34.5%	22.5%	15.8%

Note: N = 1158. Respondents were asked whether they have taken action to avoid Internet ads. A 1 to 5 scale was applied, with 1 being "never", 2 being "seldom", 3 being "sometimes", 4 being "often", and 5 being "always".

Table 3 Cognitive, Affective & Conative Effects: Button Ads vs. Pop-up Ads

	Cognitive Effect	Affective Effect	Conative Effect
Button Ads	4.40 (1.52)	4.28 (1.49)	2.73 (.99)
Pop-up Ads	4.88 (1.62)	5.52 (1.49)	3.18 (1.17)
Difference	0.48	1.24	0.45
T-value	11.59***	26.28***	14.65***

Note: 1. Numbers in parentheses are the standard deviation; the ones before are the mean.

2. Pair t-test was applied.

3. ***$p < 0.001$.

4. On the Likert 7 scale, 1 is "strongly disagree", 7 is "strongly agree", and 4 is "neither agree nor disagree".

In order to find out whether Internet use and demographic variables are able to predict the cognitive, affective and conative effects of Internet advertising, hierarchical regression analysis was applied. As shown in Table 4, age could predict the cognitive effect ($B = 0.093$, $p < 0.01$) and affective effect ($B = 0.071$, $p < 0.01$) of button ads, in that the older the respondents were, the more they tended to ignore and dislike button ads. Gender was able to predict the affective effect ($B = -0.089$, $p < 0.01$) and conative effect ($B = -0.063$, $p < 0.05$) of button ads, in that male respondents were more likely to dislike button ads and take action to avoid them. On the other hand, frequency of Internet use was not able to significantly predict the cognitive and affective effects of button ads; however, it correlated positively to the likelihood of ad avoidance action ($B = 0.105$, $p < 0.001$).

Table 5 shows that none of the demographic variables could predict the effects of pop-up ads significantly. Moreover, frequency of Internet was not correlated positively to the cognitive effect of pop-up ads. Nonetheless, people with more frequent Internet use were more likely to dislike pop-up ads ($B = 0.091$, $p < 0.01$) and take action to avoid them ($B = .148$, $p < .001$).

In sum, H6 is supported, and H4 & H5 are partially supported.

Table 4 Hierarchical Regression Analysis of Respondents' Gender, Age, Education & Internet Use on the Cognitive, Affective & Conative Effects of Button Ads

Cognitive Effect		B	SE B	β	R^2	ΔR^2	F
Block 1	Demographics				0.011	0.011	4.108**
	Gender	-0.102	0.090	-0.034			
	Age	0.015	0.005	0.093**			
	Education	0.044	0.067	0.019			
Block 2	Internet use	0.006	0.022	0.008	0.011	0.000	
Affective Effect							
Block 1	Demographics				0.014	0.014	5.488**
	Gender	-0.266	0.088	-0.089**			
	Age	0.011	0.005	0.071*			
	Education	0.014	0.065	0.007			
Block 2	Internet use	-0.002	0.022	-0.003	0.014	0.000	0.009
Conative Effect							
Block 1	Demographics				0.006	0.006	2.42*
	Gender	-0.125	0.059	-0.063*			
	Age	-0.005	0.003	-0.050			
	Education	0.012	0.043	0.008			
Block 2	Internet use	0.050	0.014	0.105***	0.017	0.011	12.326***

Note: N = 1158, *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Table 5 Hierarchical Regression Analysis of Respondents' Gender, Age, Education & Internet Use on the Cognitive, Affective & Conative Effects of Pop-up Ads

Cognitive Effect		B	SE B	β	R^2	ΔR^2	F
Block 1	Demographics				0.003	0.003	1.211
	Gender	-0.039	0.096	-0.012			
	Age	0.009	0.005	0.054			
	Education	-0.002	0.071	0.000			
Block 2	Internet use	0.020	0.024	0.025	0.001	0.000	0.703
Affective Effect							
Block 1	Demographics				0.004	0.004	1.355
	Gender	0.038	0.089	0.013			
	Age	0.007	0.005	0.044			
	Education	0.095	0.066	0.043			
Block 2	Internet use	0.066	0.022	0.091**	0.011	0.008	9.288**
Conative Effect							
Block 1	Demographics				0.002	0.002	0.768
	Gender	-0.045	0.070	-0.019			
	Age	-0.004	0.004	-0.031			
	Education	0.040	0.051	0.023			
Block 2	Internet use	0.084	0.017	0.148***	0.023	0.020	24.912***

Note: N = 1158, *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

8. Discussion & Conclusion

According to a 2013 report on global advertising, spending on Internet ads in the year rose 26.3% from that in 2012, whereas spending on TV ads and newspaper ads was down 2.9% and 4.7%, respectively. In spite of the rapidly increasing popularity of Internet advertising with advertisers, do Internet ads really have as powerful an effect as expected in facilitating the achievement of advertisers' intended goals?

In this study, 48.2% of the respondents reported that they would deliberately ignore button ads, while 62.4% of the respondents gave the same reaction with respect to pop-up ads. 40.9% of the respondents said they dislike button ads, and 75.3% provided the same answer in the case of pop-up ads. The results demonstrated that a high percentage of Internet users feel negatively about ads on the web.

In addition, there was a significant difference between button ads and pop-up ads in their cognitive, affective and conative effects. Respondents tended to ignore and dislike pop-up ads more than they did button ads. They were also more likely to take action to avoid pop-up ads than button ads.

These results might provide some hints for advertisers in their utilization of Internet advertising. It is important to consider the types of Internet ads to be used, since some may not have a positive effect on consumers. In particular, pop-up ads seem to arouse negative emotions in Internet users, so much so that users are likely to take action to avoid pop-up ads, such as by scrolling down the web pages or closing the windows.

Furthermore, the results show that the older the respondents were, the more they tended to ignore and dislike Internet ads; and male respondents were more likely to dislike ads and take ad avoidance action. This is consistent with the findings of Coursaris et al. (2010), where female recipients of mobile messaging ads displayed more positive attitudes toward the ads, with more intention to click through or to know more about the advertising brands.

Frequency of Internet use was found to correlate positively to the likelihood of ad avoidance action. This finding can be explained logically: users who spend more time on the Internet would have had more chances to encounter button and pop-up ads and be interrupted in their Internet experience by the ads; consequently, these users are more likely to take ad avoidance action. As Dahlen (2001) noted, users with more Internet experience were less likely to click on banner ads.

Every study has its drawbacks, and a major limitation of this study is its sample size: though the sample was drawn from the InsightXplorer Limited Cyber Panel database, a credible database in Taiwan that covers a wide spectrum of professions and age groups, it is not a probability sample of all Internet users. This raises the issue of representative sampling and generalization. Although a common problem with web surveys (Schillewaert, Langerak, & Duhamel, 1998), it ought to be eliminated as a weakness in future research.

To conclude, we would like to propose some suggestions for future studies. In this study, respondents were asked only to evaluate the effects of generic pop-up and button ads; however, the effects might vary depending on the product advertised. According to Joshi et al. (2011), the CTR of certain advertising categories was sensitive to the feature of user age. For example, ads of "rental housing" were more frequently clicked by younger users and "medical supply" by older users. In addition, Kim, Lee and Kim (2008) have found that users' annoyance with pop-up ads was reduced when the content of the ads connected with their tasks at hand. Therefore, in exploring the response of Internet users to pop-up and button ads, future studies should take into consideration the types of products involved as well as the content of the ads in relation to users' tasks.

References:

Beard M. (2001, October 16). "The pop-under goes mainstream", available online at: http://www.medialifemagazine.com/news2001/oct01/oct15/2_tues/news5tuesday.html.

Becker-Olsen Karen (2003). "And now, a word from our sponsor: A look at the effects of sponsored content and banner advertising", *Journal of Advertising*, Vol. 3, No. 2, pp. 17-32.

Beerli A. and Santana J. D. M. (1999). "Design and validation of an instrument for measuring advertising effectiveness in the printed media", *Journal of Current Issues & Research in Advertising*, Vol. 21, No. 2, pp. 11-30.

Briggs R. and Hollis N. (1997). "Advertising on the web: Is there response before click-through?", *Journal of Advertising Research*, Vol. 37, No. 2, pp. 33-45.

Chandon J. L., Chtourou M. S. and Fortin D. R. (2003). "Effects of configuration and exposure levels on responses to web advertisements", *Journal of Advertising Research*, Vol. 43, No. 2, pp. 217-229.

Cho C. H. and Cheon H. J. (2004). "Why do people avoid advertising on the internet?", *Journal of Advertising*, Vol. 33, No. 4, pp. 89-97.

Coursaris C. K., Sung J. and Swierenga S. J. (2010, June). "Effects of message characteristics, age, and gender on perceptions of mobile advertising—An empirical investigation among college students", in: *Mobile Business and 2010 Ninth Global Mobility Roundtable (ICMB-GMR), 2010 Ninth International Conference*, IEEE, pp. 198-205.

Coursey D. (2001, May 29). "Pop-up ads are driving me nuts! How about you?", available online at: http://www.zdnet.com/anchordesk/stories/story/0,10738,2765458,00.html.

Dahlen M. (2001). "Banner advertisement through a new lens", *Journal of Advertising Research*, Vol. 41, No. 4, pp. 23-30.

Diao Fangfang and Sundar S. Shyam (2004). "Orienting response and memory for web advertisements: Exploring effects of pop-up window and animation", *Communication Research*, Vol. 31, pp. 537-567.

Digital Marketing Association (2013, November 25). "The first half of 2013 Taiwan's overall digital advertising market reached revenues of NT $6.265 billion", available online at: http://www.dma.org.tw/Bulletin/NewsDel/171.

Dijkstra M., Buijtels H. E. and Van Raaij W. F. (2005). "Separate and joint effects of medium type on consumer responses: A comparison of television, print, and the internet", *Journal of Business Research*, Vol. 58, No. 3, pp. 377-386.

Dreze X. and Hussherr F. X. (2003). "Internet advertising: Is anybody watching?", *Journal of Interactive Marketing*, Vol. 17, No. 4, pp. 8-23.

Edwards S. M., Li H. and Lee J. (2002). "Forced exposure and psychological reactance: Antecedents and consequences of the perceived intrusiveness of pop-up ads", *Journal of Advertising*, Vol. 31, No. 3, pp. 83-95.

Elliott M. T. and Speck P. S. (1998). "Consumer perceptions of advertising clutter and its impact across various media", *Journal of Advertising Research*, Vol. 38, No. 1, pp. 29-42.

Filloux F. (2009, May 24). "Measuring time spent on a web page", accessed on 2 January 2014, available online at: http://www.mondaynote.com/2009/05/24/measuring-time-spent-on-a-web-page.

Flores L. (2000, November). "Internet advertising effectiveness: What did we learn and where are we going", in: *The Annual Conference of the Worldwide Advertising Conference*, Rio de Janeiro, Brazil.

IAB (2013, October 9). "IAB internet advertising revenue report", available online at: http://www.iab.net/about_the_iab/recent_press_releases/press_release_archive/press_release/pr-100913.

InsightXplorer (2013, January 31). "Monthly report", available online at: http://news.ixresearch.com/?p=6744.

Joshi A., Bagherjeiran A. and Ratnaparkhi A. (2011). "User demographic and behavioral targeting for content match advertising", in: *Proceedings of the Fifth International Workshop on Data Mining and Audience Intelligence for Advertising (ADKDD 2011)*, pp. 53-60.

Kim Youjeong, Lee Hee Seok and Kim Namyoung (2008). "Are pop-ups always annoying? The moderating effect of ad relevance on consumers' attitude toward ads and websites", in: The *Annual Conference of the International Communication Association*, Montreal, Quebec, Canada.

Kwak H., Fox R. J. and Zinkhan G. M. (2002). "What products can be successfully promoted and sold via the internet?", *Journal of Advertising Research*, Vol. 42, No. 1, pp. 23-38.

Lavidge R. J. and Steiner G. A. (1961). "A model for predictive measurements of advertising effectiveness", *The Journal of Marketing*, Vol. 25, pp. 59-62.

Nielsen (2013, October 15). "Global adview pulse lite", available online at: http://nielsen.com/us/en/reports/2013/global-adview-pulse-lite-q2-2013.html.

Phillip Marissa V. and Suri Rajneesh (2004, Dec). "Impact of gender differences on the evaluation of promotional emails", *Journal of Advertising Research*, Vol. 44, No. 4, pp. 360-368.

Schillewaert N., Langerak F. and Duhamel T. (1998). "Non probability sampling for WWW surveys: A comparison of methods", *Journal of the Market Research Society*, Vol. 40, No. 4, pp. 307-322.

Voorveld H. A. (2011). "Media multitasking and the effectiveness of combining online and radio advertising", *Computers in Human Behavior*, Vol. 27, No. 6, pp. 2200-2206.

Wolin L. D., Korgaonkar P. and Lund D. (2002). "Beliefs, attitudes and behaviour towards web advertising", *International Journal of Advertising*, Vol. 21, No. 1, pp. 87-113.

Wolin L. D. and Korgaonkar P. (2003). "Web advertising: Gender differences in beliefs, attitudes and behavior", *Internet Research*, Vol. 13, No. 5, pp. 375-385.

Zeff R. and Aronson B. (1999). *Advertising on the Internet* (2nd ed.), New York, NY: John Wiley & Sons, Inc.