

THE VALUE OF AND ATTITUDE TOWARD SPONSORED LINKS FOR INTERNET INFORMATION SEARCHERS

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ABSTRACT

A sponsored link is an innovative advertisement format that simplifies the advertising message with text forms. This study seeks to investigate the perceptions and attitudes of Internet users toward the sponsored link. The research is made up of two parts. The first part empirically tests the cause-and-effect model of the advertising values and the advertising attitudes. Four advertising characteristics are used as antecedent constructs: informativeness, entertainment, irritation and credibility. The second part of the study performs a cluster analysis according to the information search degrees of Internet users toward and how those four characteristics affect their values and attitudes vice a sponsored link.

Using 711 valid replies from the survey, the Partial Least Square analysis shows that the credibility plays the most important role. The cluster analysis segregates the Internet searchers into four groups: light searchers, middle searchers, heavy searchers yet using only a few websites, and heavy searchers. Entertainment is significant for two groups and informativeness shows no importance. The research results imply that Internet users concern more on credible or trustworthy of sponsored links. Irritation generated negative attitudes so that the advertisers should avoid the possible irritating effects of sponsored links such as negative or threatening words.

Keywords: search engine marketing, sponsored link, sponsored placement, advertising values, advertising attitudes

1. Introduction

The sponsored search category has grown rapidly coupled with significant profits. The Interactive Advertising Bureau (IAB) reported that the Internet advertising revenues in the United States totaled 21.2 billion dollars for the year 2007 (IAB Report 2007). It reached a 26% growth rate from 2006 with revenues of about 16.9 billion dollars. Accordingly, the sponsored search has been the largest proportion of the Internet advertising pie in the United States for the last two years. It has also become a global phenomenon. For example, it has gained more popularity in Taiwan and the People's Republic of China (PROC), displaying two-digit growth from 2005 to 2008, both in total revenues and as a proportion of the whole Internet advertising pie (see Tables 1 and 2). The phenomenon also indicates that more businesses are expanding their advertising budgets on search engine marketing.

Various names are used to refer to such types of text advertisements [Fain and Pedersen 2006; Turban et al. 2008: 182], such as sponsored search, sponsored link, sponsored list, sponsored placement or search engine advertisements. Google calls the service as AdWords and AdSense. The Chinese term is a direct translation of "keyword advertisement." These sponsored links are often shown with the search results (or organic links) on the top or right-hand side of the search engine result pages (SERPs). This research investigates the consumers' perceptions toward sponsored links, based on the conceptual model developed by Ducoffe [1996, 1996] and Brackett and Carr [2001] (that will be abbreviated as BC model). Using the exchange theory as a theoretical background, they studied advertising value (adValue) and attitude (adAttitude) toward Web ads and presumed four antecedent advertising characters (adChars) – informativeness, entertainment, irritation, and credibility. We utilize the model to investigate the value perception and attitude toward sponsored links. The major finding is that except

for informativeness, the other three antecedents – entertainment, irritation, and credibility - significantly affect the adValue and adAttitude toward sponsored links.

Table 1: Internet advertising revenues in the United States, 2006 and 2007

Internet Advertising	2007		2006	
	Revenues (in Billion \$)	Percentage	Revenues (in Billion \$)	Percentage
Sponsored Search	8.8	41%	6.8	40%
Display-related*	7.1	34%	5.4	32%
Classifieds	3.3	16%	3.1	18%
Lead Generation	1.6	7%	1.3	8%
Others	0.4	2%	0.3	2%
Total	21.2	100%	16.9	100%

*Display-related advertising includes Display ads, Rich Media, Digital Video and Sponsorship.

Data resource: http://www.iab.net/media/file/IAB_PwC_2007_full_year.pdf

Table 2: Internet advertising revenues for Taiwan and PROC from 2005 to 2008 in Million \$

Revenues in Million \$ (Percentage of Yearly revenues)	Taiwan				PROC			
	2005	2006	2007	2008e*	2005	2006	2007	2008e
Sponsored search	16.4 (16.40%)	32.9 (27.04%)	52.4 (32.30%)	68.5 (34.85%)	137.7 (23.1%)	203.8 (23.0%)	424.3 (27.3%)	746.6 (29.6%)
Display-related And other Ads	83.7 (83.60%)	88.7 (72.96%)	110.3 (67.80%)	128.2 (65.15%)	458.4 (76.9%)	682.3 (77.0%)	1129.8 (72.7%)	1775.6 (70.4%)
Total	100.1	121.6	162.7	196.7	596.17	886.1	1554.0	2522.2
Growth Rate		21.3%	33.9%	20.9%		48.8%	65.6%	57.2%

*2008e shows the revenues forecast for 2008.

Data resource: http://www.iama.org.tw/03events_01news_content.asp?nno=16

Moreover, we would like to explore whether the BC model will interpret differently for those Internet users with different degrees of web information search needs. A cluster analysis is performed. The second part of this research seeks to configure groups with different degrees of Internet search behaviors with two purposes. One is to classify the groups of Internet information searchers. The other is to compare the model performances for each group. The analysis is based on the assumption that the Internet search degree plays a moderator role for the BC model.

The following section briefly reviews the literature related to sponsored links and Internet information search levels. The second section of the paper introduces the adopted research model associated with the research design because we designed a two-part analysis: one is the model verification under the context of a sponsored link, and the other is a cluster analysis to categorize groups with different search degrees for their perceptions and attitudes toward the sponsored link. The third section is the research method description. The fourth section is the statistical results. The fifth section is the discussion and managerial implications. The final section is the research conclusion and also includes the limitations and suggested further studies.

1.1. Sponsored Links

Bill Gross argued that search engines bring good traffic and undifferentiated traffic to e-commerce websites [Battelle 2005]. The good traffic is those customers who would perform purchases on the e-commerce website. On the contrary, the undifferentiated traffic is those Internet surfers who come to a site from spam or poor search-engine results [Battelle 2005: 104]. Gross then exploited the concept of good traffic to a business opportunity that search engines can sell sponsored links to earn profits. Over the years, it has been proven to be a successful business model for search engines.

The sponsored links are transactions that allow searchers to locate information about products or services, and sponsors to draw customers who will purchase now or in the future [Sperber 2004]. However, empirical studies showed that many Internet users have little understanding how the search engines rank search results on the search engine results pages (SERPs). If search engines are less transparent about the paid search results, they would lose credibility to searchers [Marable 2003]. Jansen & Resnick [2006] researched the perceptions of Internet searchers to non-sponsored and sponsored links during e-commerce web searching. They argued that searchers have a bias against sponsored links or preference for organic links. An experiment was performed with six e-commerce queries and 56 participants. The participants who had clicked sponsored links during the experiment thought they are relevant for purchasing and relevant to the query; however, other participants who did not click sponsored links

presented an attitude of a lack of trust. Jansen [2007] used 108 e-commerce queries to study the relevance of sponsored links and organic links of three major Web search engines, Yahoo!, Google, and MSN. The research shows that the relevance ratings of sponsored links are statistically higher than organic links. None of mentioned researches investigated the advertising attitudes and values toward sponsored links of Internet searchers.

1.2. Internet Information Search Levels

One purpose of this paper is to investigate how the BC model interprets the sponsored link perceptions for Internet searchers with different search levels. This section briefly summarizes literatures of Internet search behaviors with various search levels. The phenomenon of information search in the context of Internet has gradually gained the attention of researchers especially during the past decade [Blackwell et al 2005; Gerjets and Hellenthal-Schorr 2008; Taylor 2007]. Using the Internet enables the users to acquire useful information in a quick, easy and inexpensive manner [Korgaonkar and Wolin 1999]. Muylle, Moenaert and Despontin [1999] summarized five search scenarios after a grounded theory research: exploratory surfing, window surfing, evolved surfing, bounded navigation and targeted navigation. Holscher and Strube [2000] studied the web search behavior of Internet experts and freshmen and found that a successful search performance required integrating two specialties: previous web experiences and domain knowledge.

Korgaonkar and Wolin [2002] distinguished among the heavy, medium and light Internet users as to their beliefs and attitudes toward web ads associated with purchasing patterns and demographics. Heavy users purchase more often on the Internet, and display more positive attitudes toward the web ads than the two other groups. Similar results are accessed by Campbell et al. [2007] that heavy Internet users presented more optimistic responses than the light users did.

Johnson et al. [2004] characterized the search behavior in three aspects: (1) depth of the search, (2) dynamics of the search and (3) activity of the search. The research results suggested that more-active online shoppers tend to search across more sites. Kavanaugh et al. [2005] studied how the consumer's community involvement and collective efficacy are affected by the strength of social ties and Internet use. Heavy Internet users with weak ties often use the Internet for social purposes. They have higher social engagements and attend more local meetings and events.

2. Conceptual Model

Ducoffe [1996] proposed three web adChars as antecedent variables of adValue and adAttitude for Internet ads. They are informativeness, entertainment and irritation. Based on the exchange theory, the value is articulated as an objective evaluation by consumers. Considering the three web adChars, consumers can compute their gains or losses on whether the web ad satisfies their needs and provides them with the desired benefits. The resulting adValues would then affect adAttitudes toward the web ad that triggers consumer motivation and behavior of purchase. Brackett and Carr [2001] further added another variable, credibility, one that is a strong factor for the formation of values and attitudes toward web ads. The attitudes toward online ads have been studied according to various antecedent assumptions on different contexts, such as website, banners, or pop-ups. For example, Mu and Galletta [2007] studied how the design of picture and words on web pages affects advertising effectiveness. Because the familiarity results in positive advertising attitudes, Campbell and Wright [2008] proposed two antecedents, personal relevance and interactivity, and then investigated their effects on the attitudes toward repetitive online ads. In addition, Chatterjee [2008] studied the brand memory of and attitudes toward online ads. They argued that the unclicked ads are not in vain; instead, the memory of the advertised brand endures. However, those preceding researches are none for sponsored links.

We adopted the theory models that were utilized by Ducoffe [1996] and Brackett and Carr [2001] in studying the Internet ads. Sponsored links are not like general web ads displayed in forms of rich media such as banners. Although with simple textual forms, sponsored links have the nature of advertisements to inspire the interest of Internet searchers. The following are the rationale for four adChars of sponsored links and how they influence adValues and adAttitudes.

A sponsored link contains two forms of advertising display. One is the appearance of the sponsored link with a few lines of descriptions. Table 3 lists two examples. The other form is the advertising website that can be connected by clicking the URL (the advertising website address) shown on the bottom of the sponsored link. The website comprises abundant information of the products or promotion. Referring to Table 3, Example 1 is a sponsored link of an online bookstore that was on the top of a list of sponsored links appeared on the right side of SERP after searching for "book" on Google. The display of a sponsored link contains three parts: title, product descriptions and URL. The title is the website name that is relevant to the searchers' searching query. It is followed by a few words of information about product or promotion. By clicking the URL on the bottom, interested searchers can connect to the website. Referring to Example 1 in Table 3, clicking the URL "www.BooksLiquidation.com" will lead the

Internet searchers to the online bookstore with a full display of products for sale, such as books, CDs, DVDs and video games associated with transaction related information.

2.1. Informativeness

Ducoffe [1995, 1996] elaborated that informativeness will generate value for consumers because advertising seeks to provide them with information about products and purchases. The informativeness indicates the completeness of the product information implying its timeliness, relevance and being a reliable resource. Consumers approve the advertising when its product information matches their needs and wants so that the purchase may generate a great satisfaction.

Table 3: The format of sponsored links and an example of sponsored links

Ad format of sponsored links	Example 1*	Example 2**
Title	Wholesale Book Liquidator	Japanese Products
Limited number of words of descriptions	Low Warehouse Prices-Bulk Overstock. 20 Million Books in Stock-Wholesale	Unique design for everyday living to make you smile
URL	www.BooksLiquidation.com	www.concierge.sg

*This sponsored link showed on the right side of SERP as the first rank after searching for “book.” It is accessed at 24 April, 2009 on http://www.google.com.tw/search?q=book&hl=zh-TW&rlz=1T4SKPB_zh-TWTW322TW322&sig=AMEaWZxP7jvZ7I7OWyGiZzWZzwJqmKZaiA&output=search&pws=0

** This sponsored link showed on the right side of SERP as the first rank after searching for “stationary.” It is accessed at 9 June, 2009 on http://www.google.com.tw/search?hl=en&rlz=1T4SKPB_enTW310TW310&q=stationary&aq=f&oq=

Although a sponsored link presents very limited product information, the URL would lead the Internet users to the advertising website that offers abundant product and purchase information. As previously mentioned [Holscher and Strube 2000], to perform satisfactory Internet searches require previous Web experiences. It has been a result of learning process for Internet searchers. Clicking on the URLs shown on SERPs would gradually lead them to reach relevant information of their needs. Thus, Internet searchers can obtain the product information not just from the few words of sponsored links but also from the advertising websites. While the sponsored links are perceived to be informative, adValue is formed by consumers who evaluate the ad by expectation fulfillment, the ad experience and the residual after the experience that the advertising value has generated [Ducoffe 1995; Houston and Gassenheimer 1987].

H1a: There is a positive relationship between informativeness and adValues.

2.2. Entertainment

Ducoffe [1996] summarized the adChar of entertainment as having the following properties:

1. The entertainment fulfills audience needs for escapism, diversion, aesthetic enjoyment, or emotional release [Ducoffe 1996; McQuail 1983].
2. The media advertising entertains consumers so that the experience enhances the advertising exchanges for consumers [Alwitt and Prabhaker 1992].

The entertaining effect of sponsored links may be generated from two aspects, the superficial text or and advertising website. If the text of sponsored links can hit the core idea of products or services in limited words, there is a greater opportunity to draw the Internet searchers' attention. An interested searcher who clicks the URL will then be directed to the advertised websites where the advertisers would contain information or rich media effects in order to impress the potential customers and trigger their purchase intention.

H2a: There is a positive relationship between entertainment and adValues.

2.3. Irritation

Sponsored links are like any ads that may cause irritation. It may cause depression of its adValue for the following reasons:

1. The appearance of ads being an irritation: There are critics who say that advertising diverts consumers' attention [Ducoffe 1995, 1996]. Because the Internet searchers aim at finding information, sponsored links listed besides the organic links might cause Internet searchers to feel annoyed.
2. Advertising appeal: Sometimes, the tactics that advertisers adopt may generate only negative advertising effects [Sandage and Leckenby 1980]. Consumers may perceive the ads as irritating when advertisers employ techniques that annoy, offend, insult, or are overly manipulative [Aaker and Bruzzone 1985]. Although sponsored links simply make us of displays with limited words, in order to attract searchers' attention, advertisers could write affective sentences or terms that can cause negative emotions. For example, Marshall and Todd [Marshall and Todd 2007:

Chapter 20] suggest that advertisers exploit their creativity and employ various tactics to draw attention, such as controversial arguments, irony or even scary words.

3. The bias toward sponsored links: there exists users' bias toward sponsored links. Some users only click on organic links and do not try the sponsored links. In an experiment, Jansen & Resnick [2006] found that the main reason for users not clicking on sponsored links is a problem of trust. Researchers found that users do not understand the ranking discipline of sponsored search or feel distrust over the search results [Marable 2003].

H3a: There is a negative relationship between irritation and adValues.

2.4. Credibility

Credibility has been an important research issue for researches of Internet media [Eastin 2001; Flanagin and Metzger 2000; Metzger et al. 2003; Greer 2003] and Electronic commerce [Delgado-Ballester and Hernández-Espallardo 2008; Jones and Leonard 2008; Wogalter and Mayhorn 2008]. Considering the absence of source knowledge, Hong [2006] studied the perceived credibility of health-related Web sites that are mainly from two fields: message and structure. This is undertaken from the research stream of credibility from sources including media, organizations and the individual spokespersons, and online medium such as the individual Web site. The message credibility contains categories of message organization, message delivery and message content [Metzger et al. 2003]. The structural credibility is the perception of the components of Web sites, such as domain names, site maps, online privacy policies, third-party seals of endorsement or advertisements in the form of banners or hyperlinks [Hong 2006].

MacKenzie and Lutz [1989] defined ad credibility as "the extent to which the consumer perceives claims made about the brand in the ad to be truthful and believable." This can be transferred to the credibility of sponsored links to replace the "brand" with "URL" or the website attached at the end of the sponsored link. Underlying credibility are advertiser credibility and advertising credibility that consumers are concerned about with regards to truthfulness and believability of the advertising [MacKenzie and Lutz 1989]. The credibility will generate values for consumers because they can trust the descriptions shown on the sponsored links and click on the URL to connect with the advertising Website.

H4a: There is a positive relationship between credibility and adValues.

2.5. AdValue and adAttitude

The adAttitude is a useful predictor of customer purchase [Shimp 1981]. Referring to the exchange theory, an advertisement that lacks value would cause consumers to have negative responses that can inhibit the exchange relationships that advertisers expect to establish. In contrast, an advertisement with high value perceived by consumers will contribute towards the formation of positive attitudes. There is a distinction between adAttitudes and adValues [Ducoffe 1996]. While adAttitude is formed through cognitive processing and affective processing, adValue is a thoughtful evaluation and therefore a cognitive assessment. In addition to the four hypotheses H1a through H4a, other hypotheses marked in Figure 1 are stated as follows:

H1b: There is a positive relationship between informativeness and adAttitudes;

H2b: There is a positive relationship between entertainment and adAttitudes;

H3b: There is a negative relationship between irritation and adAttitudes;

H4b: There is a positive relationship between credibility and adAttitudes.

H5: There is a positive relationship between adValues and adAttitudes.

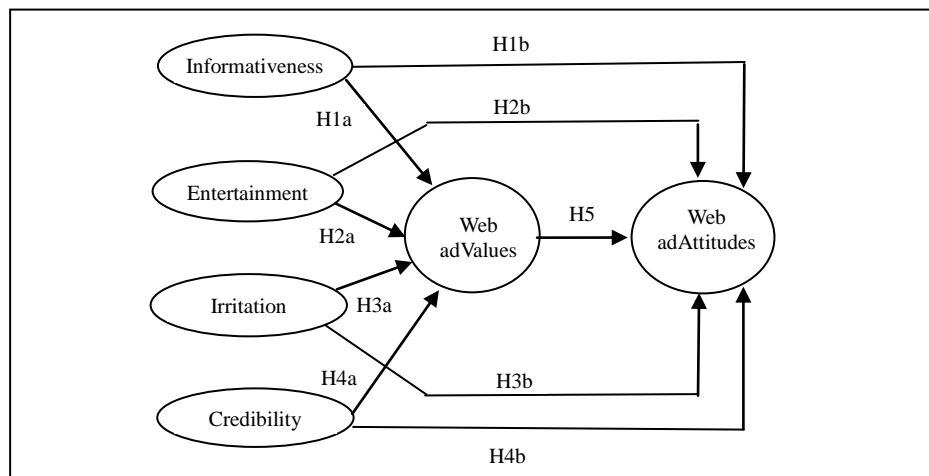


Figure 1: The conceptual model and hypotheses

3. Research Method

3.1. Measures and Questionnaire Development

The measures in this study are adapted from previous researches [Brackett and Carr 2001; Ducoffe 1995, 1996; Schlosser 1999; Yang 2003]. The questionnaire has three sections: (1) demographics: gender, age, education, profession and average monthly income, years of Internet experience and daily Internet usage; (2) the perception of a sponsored link: to measure the perceptions on adChars, adValues and adAttitudes; and (3) the degree of internet search: to measure four aspects of search efforts containing source, quantity, time and websites.

The pool of items associated with each latent constructs has been adopted from prior researches of Internet ads. Although the measurements and questions have been proven with construct validity and reliability in those researches under various ad contexts, we tested the reliability and validity for the collected samples because the context this time around is for a sponsored link and that the samples are Asian Internet users. Furthermore, the measurement questions which were originally written in English were translated into Chinese and then translated back into English to increase the instrumentation equivalence [Brislin 1986; Sperber 2004]. The questions were then pre-tested by five graduate students and one company manager. Based on their suggestions, the wordings of some questions were refined and adjusted.

3.2. Data Collection

The survey targets are the general Internet users who search for information and are familiar with a sponsored link. In order to ensure higher rates of return, we adopted convenient sampling and purposeful sampling methods by collecting data through both virtual and real places. For the virtual way of collecting data, the questionnaire was listed on a primary survey website named “my3q.com¹” that is a well-known website particularly for Internet surveys. Originating from Hong Kong, the website traffic is mainly from Asia². My3q.com not just provides an easily-operated questionnaire design platform, it also hosts activities that encourage Internet users to answer questionnaires, such as lottery or free gift offerings. Moreover, the authors have exerted much effort to increase the number of survey respondents, such as posting survey notices on various portals or websites and sending emails to acquaintances. Respondents could then link up with the website to fill out the questionnaires. For the data collection in the real world, the authors sent out hardcopies of the questionnaire to as many MBA graduate students or professional workers through the snowball sampling method around southern Taiwan.

The data collection was carried out for two weeks from May 02, 2008 to May 18, 2008. Through the Internet and hardcopy handouts, 784 replies were collected. Seventy-three questionnaires were considered invalid and were deleted when the following things happened: (1) missing values or incomplete answers, (2) repeated IPs, (3) all answers gave the same values, and (4) the respondents did not know what a sponsored link meant; those who answered negatively to a qualification-checking question “I know what a sponsored link means.” The question is meant to make sure that respondents understood the sponsored search.

In all, 711 valid questionnaires were collected, with 560 replies from the Internet and 151 from the hardcopy handouts. The valid receiving rate is 90%. To test whether the data collected from the Internet and from the handouts were the same, we performed a t-test to compare for demographic variables and all focal constructs. All the t-tests were insignificant indicating that there are no differences between the replies from the Internet and those from the handouts. Of the total 711 valid answers, male and female respondents, there were 379 (53% of the sample) males and 332 (47%) females. Those aged younger than 25 years old compose 62.4% of the sample. Most of respondents hold a college or higher degree (94.7%). As to their profession, students constitute 66% of the sample. Table 4 shows the descriptive statistics of sample demographic. Comparing the demographic distribution of sample and the survey results of Taiwan Internet usage in 2008³ with Chi-square test, there is no statistical significance.

¹ <http://www.my3q.com/misc/register/register.phtml?strForceLang=en>. It provides a platform that users can design for their questionnaire formats. The website is responsible for surveys promotion by web ads, or by offering free gifts and drawing lots.

² According to the website demographic record of Alexa, <http://www.alexa.com/siteinfo/my3q.com> (accessed at April 28, 2009), the users from different areas: Hong Kong (32.4), Taiwan (30.8), China (12.7%), India (6.2%), United States (4.3%), other (13.6%). Traffic ranks in various countries and other related information of my3q.com can be seen on Alexa.com.

³ “Internet and Medium Usage Survey of Taiwan (January to June, 2008)” Retrieved 16 September, 2008 from http://www.insightxplorer.com/specialtopic/crossmedia_200809.html

Table 4: The descriptive statistics of sample demographics

Attributes	Sex	Male	379 (53.3%)	Female	332 (46.7%)
	Ages	Less than 25 years old	444 (62.4%)	Higher than 25 years old	267 (37.6%)
	Education	High school or under	38 (5.3%)	College or above	673 (94.7%)
	Profession	Students	469 (66.0%)	Others	242 (34.0%)
	Income	Less than \$600/month	498 (70.0%)	Higher than \$600/month	213 (30.0%)

4. Empirical Analyses

Study 1: Testing for BC Model

4.1. Measurement Model Assessment

Using the collected data, the research model is tested by the partial least square (PLS) method of structural equation modeling (PLS-Graph version 3) with bootstrapping re-sampling procedure [Chin 2004; Gefen and Straub 2005]. Table 5 shows the composite reliability, average variance extracted (AVE) and square root of the AVE, as well as the correlations between the constructs. The composite reliability values of all the constructs are above the recommended level of 0.70, indicating adequate internal consistency [Hair et al. 1998]. All the AVE values are higher than the suggested threshold value of 0.50 so that the convergent validity is assessed [Fornell and Larcker 1981]. Next, discriminant validity is examined by comparing the square root of the AVE (bold figures on the diagonal) with the absolute values of correlation between all pairs of the constructs [Chin 2004; Gefen and Straub 2005]. The results shown in Table 6 indicate that each construct is more closely related to its own measures than to those of the other constructs. Therefore, discriminant validity is supported. Table 6 lists the question statements, loadings and t-values. All the loadings are well above the 0.70 and are statistically significant at the 0.001 level. The individual item reliability is therefore satisfactory.

Table 5: Inter-Construct Correlations: Consistency and Reliability Tests

Construct	Composite Reliability	AVE*	Infor	Enter	Irrit	Credi	Value	Attit
Infor	.859	.671	.819**					
Enter	.919	.790	.492	.889				
Irrit	.909	.771	-.334	-.275	.878			
Credi	.882	.714	.553	.456	-.424	.844		
Value	.892	.742	.521	.442	-.420	.632	.861	
Attit	.926	.862	.514	.544	-.534	.653	.750	.928
WSD	.800	.508	.183	.051	-.054	.067	.139	.070

* Average Variance Extracted

**The shaded numbers on the leading diagonal are the square root of the variance shared between the constructs and their measures. Off diagonal elements are the correlations among constructs. For discriminant validity, diagonal elements should be larger than off-diagonal elements.

Table 6: Research constructs, measurement questions, loadings and t-statistics

Label	Construct / Items	Loading	t-statistics
Informativeness			
Inf01	provides timely information	.7558	22.8702
Inf02	Sponsored link is a good source of information	.8821	85.4045
Inf03	Sponsored link supplies relevant information	.8153	44.9418
Entertainment			
Ent01	Sponsored link is entertaining	.8658	57.0778
Ent02	Sponsored link is enjoyable	.9264	118.4398
Ent03	Sponsored link is pleasing	.8730	70.1516
Irritation			
Irr01	Sponsored link insults people's intelligence	.7501	30.0879

Irr02	Sponsored link is annoying	.9449	154.8099
Irr03	Sponsored link is irritating	.9259	115.6603
Credibility			
Cre01	Sponsored link is credible	.7762	43.1903
Cre02	Sponsored link is trustworthy	.9016	117.6267
Cre03	Sponsored link is believable	.8527	48.1824
AdValue			
Val01	Sponsored link is useful	.8605	75.7781
Val02	Sponsored link is valuable	.8803	75.7941
Val03	Sponsored link is important	.8434	77.4650
AdAttitude			
Att01	Overall, I like Sponsored link	.9300	151.4624
Att02	I consider Sponsored link a good thing.	.9264	144.4798

4.2. Structural Model Assessment and Hypothesis Testing

Figure 2 presents a graphical depiction of the PLS results, showing the standardized path coefficients among the constructs and the R^2 value for the model using the bootstrap re-sampling method. T-values are listed in parentheses under each path coefficient. The path coefficient marked with an asterisk indicates the statistical significance for p -value < 0.05 . As hypothesized, each of the four adChars is positively correlated with adValue and adAttitude, except for H1b where the informativeness factor is not correlated with adAttitude (path coefficient 0.009 and t -value 0.3333). In addition, the adValue is positively correlated with adAttitude. In summary, except for H1b, all hypotheses H1a ~ H4a, H2b ~ H4b and H5, are supported with statistical significance. The R^2 values of the adValue and adAttitude of a sponsored link are 0.472 and 0.684, respectively.

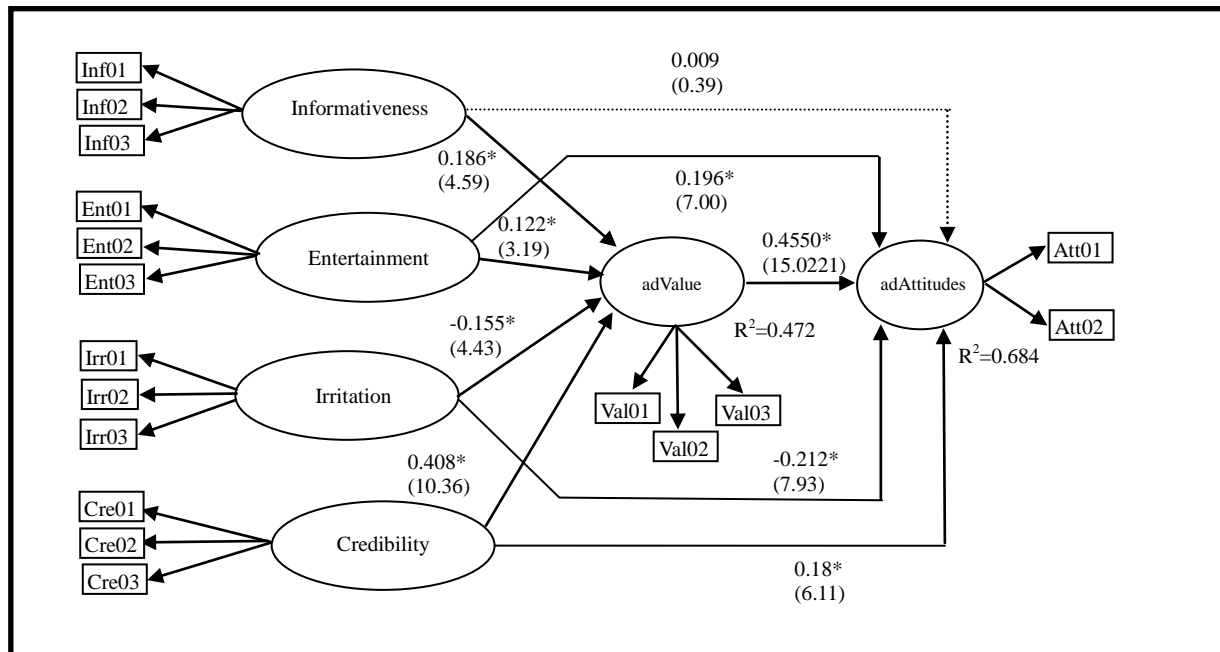


Figure 2: Empirical results of the conceptual model

The significance of the four hypotheses, H1a ~ H4a, indicates that the four adChars are important in forming users' adValues. Especially, the path coefficient of credibility to adValues is the highest; that is different from the results obtained by Brackett and Carr [2001] where credibility is a significant variable yet informativeness plays a more important influencing factor. On the other hand, irritation has a negative influence effect so that it would decrease the perceived adValue of users.

The influence on adAttitudes, H1b is not significant which is also different from the research results of Ducoffe [1996] and Brackett and Carr [2001]. In their study, informativeness played the most important role that affected adAttitudes. The other three adChars have similar strengths as to the effects toward adAttitudes with similar absolute

values of path coefficients (0.196, -0.212, and 0.18). Considering the indirect influence of the four adChars toward adAttitudes (through adValues), credibility would play the most important role. The direct, indirect and total path coefficients are shown under column “Model 4” in Table 7 (where Model 4 represents the research model shown in Figures 1 and 2).

The effects of adValues toward adAttitudes hypothesized as H5 are significant with a path coefficient of 0.454 and t-value of 15.26. The whole model has $R^2 = 0.682$. These results show that the proposed model can be used as a good instrument to measure the adAttitudes.

4.3. Model Comparison

After doing the empirical tests of the model and hypotheses, we further performed model comparisons. Model 1 and Model 2 assume three antecedents for adValues while Model 1 does not assume that the three adChars have a direct effect on adAttitudes. However, Model 2 includes the direct effects toward adAttitudes. Credibility was added as the fourth antecedent factor in Model 3 and Model 4 while Model 3 does not assume any direct effects of adChars toward adAttitudes and Model 4 includes the direct effects toward adAttitudes.

The PLS results of the four models are shown in Table 7. Among the four adChars, all four models consistently show that credibility is the most important factor that affects adValues. This would imply that credibility has the greatest indirect effect on adAttitudes. The irritation factor generated the greatest direct effect on adAttitudes, with a negative sign. Considering the total effect of adChars toward adAttitudes, credibility still plays the most important role in Models 3 and 4. In terms of the power of model interpretation, Model 4 has the highest R^2 value (0.684) when compared with the other three models. Therefore, Model 4, that is also the research model as shown in Figure 1, is adopted in the following cluster analysis to further test for different clusters.

Table 7: The path coefficients, t-statistics and R^2 of four models

Models	Model 1	Model 2		Model 3	Model 4		
Hypotheses	H1a, H2a, H3a and H5	H1a, H2a, H3a, H1b, H2b, H3b, and H5		H1a, H2a, H3a, H4a, and H5	H1a, H2a, H3a, H4a, H1b, H2b, H3b, H4b and H5		
Dep. Var. Ind. Var.	AdValues	AdValues	AdAttitudes	AdValues	AdValues	AdAttitudes	Total Effects Towards AdAttitudes
Informativenss	0.337 (8.63)	0.339 (8.90)	0.053 (1.78)	0.186 (5.22)	0.186 (4.59)	0.009 (0.39)	0.084
Entertainment	0.199 (4.80)	0.204 (5.11)	0.223 (8.47)	0.117 (3.06)	0.122 (3.19)	0.196 (7.00)	0.251
Irritation	-0.26 (7.00)	-0.256 (7.53)	-0.232 (9.15)	-0.153 (5.03)	-0.155 (4.43)	-0.212 (7.93)	-0.282
Credibility				0.413 (10.22)	0.408 (10.36)	0.18 (6.11)	0.365
R^2 (adValues)	0.373	0.373		0.473	0.472		
AdValues -> AdAttitudes	0.753 (40.71)		0.526 (17.76)	0.750 (41.06)		0.454 (15.26)	
R^2 (total)	0.563		0.667	0.562		0.684	

Study 2: Cluster Analyses

4.4. Measurement of Web Search Degree

Engel et al. [1995:185] defined the three dimensions of a consumer search: degree, direction and sequence. Degree is the total search amount. Direction represents the specific content of each search and sequence represents the order of search activities. Because the search direction and search sequence are related to specific brands or product attributes, they are not suitable indicators of the general search behavior on the Internet. Only search degree is considered in this study when classifying Internet searchers.

Five indices reflect the construct of information search degree [Engel et al. 1995]: information sources, product brands, product attributes, spending time and stores. Because the second and third indices refer to a specific product, the consumer may feel interested and they may indicate the information quantity that the consumer spends on each search. We have adjusted these two indices into only one measure as information “quantity” (with variable code as WSD02). For the index of “store,” customers visit different stores to collect product information such as the appearances, functions, materials and productions, prices, brand comparison, etc. When they search for the online product information, they may go through various websites such as online sellers or e-shops, virtual discussion

groups or forums, or blogs. Thus, the other three indices are used to measure “source” (WSD01), “time”, (WSD03) and “website” (WSD04). is translated to “website” in this study because the

All question statements are listed in Table 8. The answers are measured on a five-point Likert scale from 1 = strongly agree to 5 strongly disagree.

Table 8: Measurements and questions of web search degree

Variable (Concept)	WSD: Web Search Degree	Loading (t-Statistics)
WSD01 (Source)	Comparing with other media, Internet is my major source to search for information	.8877 (4.480)
WSD02 (Quantity)	I use Internet to collect most of needed information	.7197 (3.915)
WSD03 (time)	I would spend a lot of time to search for information on Internet	.5452 (2.238)
WSD04 (websites)	I would search through a few websites for collecting information	.6560 (2.273)

For the construct validity and reliability, Table 8 lists the factor analysis results, including the loadings associated with t-values for each measure toward the latent variable WSD. All the loadings are greater than 0.5 with statistical significance [Hair et al. 1998]. Table 9 shows the composite reliability, AVE and square root of AVE. The reliability is higher than 0.7. The square root of AVE is higher than the correlations between WSD and other constructs. The reliability and construct validity are acceptable.

Table 9: Reliability, AVE and correlations of WSD

Construct	Composite Reliability	AVE*	AVE Square Root	Infor	Enter	Irrit	Credi	AdValues	AdAttitudes
WSD	.800	.508	0.713	.183	.051	-.054	.067	.139	.070

* Average Variance Extracted

4.5. Statistical Results of Cluster Analysis

Cluster analysis is a statistical technique for grouping the entities to show the high similarities within groups relative to the high variability across groups. We used the K-mean algorithm to generate two-, three-, four-, five-, and six-cluster solutions. The four-cluster generates the best results because all the construct means differ significantly across all the four clusters. For the other solutions, the construct discriminatory power was relatively weaker. Tables 10 to 12 are cluster profiles and empirical results of the conceptual model based on the four-cluster solution.

Table 10 shows the search degrees for the four Clusters A, B, C and D. The one factor ANOVA is performed for each variable. All have obtained statistically significant results with p-values smaller than .001. This indicates that the four clusters are different for each index of the search degree. Moreover, the rightmost column of Table 10 shows the results of the post hoc test, with significantly different results except for one pair test on WSD02 that is insignificant.

For the three variables, WSD01 (source), WSD02 (quantity) and WSD03 (time), the means follow the order of A<B<C<D (see Table 10). However, the order of means of WSD04 (websites) is different where Cluster C, although showing high values on source, quantity and time has low value of websites indicating that users rely only on few websites for their Internet search. With all these results and findings, the four clusters are named: light searchers (Cluster A), middle searchers (Cluster B), heavy searchers relying on few websites (Cluster C) and heavy searchers (Cluster D).

Table 11 shows the profiles and descriptive statistics for each of the focal constructs for the four clusters. The male percentage is higher than the female percentage for the four clusters. However, for Cluster A, which is the light searchers, the male percentage is much higher than the female while the other clusters have more or less similar male and female percentages. Cluster A also has a higher mean age than the other clusters. Experienced web users (more than five years of web experience) are in the majority among the four clusters. Table 12 and Figure 3 show the PLS results of the conceptual model for each cluster. Overall, the adValue plays a significant determinant role for the adAttitude.

Table 10: Variable means of web search degrees for the four clusters

	Cluster A (2) n=40	Cluster B (1) n=266	Cluster C (4) n=110	Cluster D (3) n=295	Order of Means	Post Hoc Test (Tukey-Kraemer)
WSD01*** Source	2.775	4.000	4.346	4.773	A<B<C<D	all six pairs are significant
WSD02*** Quantity	2.925	3.985	4.109	4.878	A<B<C<D	A-B*, A-C*, A-D* B-D*, C-D* (B and C are not distinguishable)
WSD03 *** Time	3.225	4.049	4.218	4.909	A<B<C<D	all six pairs are significant
WSD04*** Websites	3.275	4.102	2.900	4.773	C<A<B<D	all six pairs are significant
	Light searchers	Middle searchers	Heavy searchers relying on few websites	Heavy searchers		

*** One factor ANOVA test results is significant and p-value < .001

For Cluster A (see Figure 3), light searchers, only the credibility factor affected the adValue, with a path coefficient of 0.624. Considering the adChars, the adValue is only affected by credibility ($\beta=0.624$) and the adAttitude is only directly affected by irritation ($\beta=-0.259$). Furthermore, considering the total effects (Table 12), irritation plays a more important role on the adAttitude than credibility. Accordingly, the adAttitude of light searchers are affected mostly by the irritation and then by the credibility of the sponsored link.

For Cluster B, middle searchers, only the informativeness factor did not have any effect on either adValues or adAttitudes. The other three adChars seem fairly important toward adAttitudes (total effect) whereas credibility is still the most important factor that affected the adValue ($\beta = 0.370$) (see Table 12 under the column Cluster B).

Table 11. Profiles and construct values of the four clusters

	Cluster A n=40	Cluster B n=266	Cluster C n=110	Cluster D n=295	Post Hoc Test (Tukey-Kraemer)
Sex: Male / Female Percentage	25 / 15 62.5% / 37.5%	140 / 126 52.6% / 47.4%	58/52 52.7% / 47.3%	156/139 52.9% / 47.1%	
Age (mean)	27.3	23.55	24.85	23.76	
Education ^a	0 / 4 / 29 / 7	0 / 9 / 175/82	0/6/71/33	0/19/190/86	
Profession: Students /others	22 / 18	186 / 80	69 / 41	196 / 99	
Web_years: <5 years / >5 years	12 / 29	26 / 240	16 / 94	21 / 274	
Daily usage hrs ^b	1/15/17/4/3	4/81/100/50/31	6/42/41/18/3	2/84/99/52/58	
Informativeness*	3.408	3.569	3.642	3.870	Three pairs are statistically significant: A-D*, B-D*, C-D*
Entertainment	3.208	3.103	2.988	3.177	All six pairs are insignificant
Irritation	3.167	3.152	3.118	3.063	All six pairs are insignificant
Credibility	2.967	3.029	2.952	3.090	All six pairs are insignificant
AdValue*	3.133	3.521	3.303	3.469	Only one pair is significant: A-D*
AdAttitude	2.963	3.081	3.009	3.139	All six pairs are insignificant

^a Education: Under high school / High school degree / College degree / Graduate school degree

^b Daily usage hours: less than 1 hrs / 1~3 hrs / 4~6 hrs / 7~9 hrs / more than 10 hrs.

* One factor ANOVA test results are significant with p-value < .05; only the six research constructs are performed ANOVA tests.

For Cluster C, heavy searchers relying on only few websites, credibility is the most important and the only factor to affect the adValue. Entertainment and irritation are the two other factors that directly affect the adAttitude. Moreover, considering the overall effect, entertainment becomes the most important factor (Table 12 under column Cluster C/Attitude/Total). This group of Internet searchers is attracted by the entertainment carried by the sponsored

links. Because attitude is a major determinant of consumer motivation and behavior, the web advertisers or search engine marketers can place more emphasis on the entertainment effects of a sponsored link to draw and hold consumer attention.

Table 12. Path coefficients of theory model for the four clusters

	Cluster A n=40			Cluster B n=266			Cluster C n=110			Cluster D n=295		
	Value	Attitude Direct	Total	Value	Attitude Direct	Total	Value	Attitude Direct	Total	Value	Attitude Direct	Total
Informativeness	-0.003 (0.48)	0.198 (1.21)	--	0.148 (1.79)	0.084 (1.56)	--	0.163 (1.36)	0.057 (0.70)	--	0.236* (3.93)	-0.082 (1.87)	0.121
Entertainment	0.105 (0.38)	0.152 (1.39)	--	0.196* (3.05)	0.144* (3.04)	0.229	0.103 (0.98)	0.307* (3.56)	0.307	-0.103 (1.85)	0.195* (5.44)	0.195
Irritation	0.006 (0.08)	-0.259* (2.17)	-0.259	-0.178* (3.57)	-0.211* (4.68)	-0.288	-0.140 (1.83)	-0.130* (2.13)	-0.130	-0.163* (2.93)	-0.214* (6.01)	-0.300
Credibility	0.624* (3.35)	0.214 (1.36)	0.172	0.370* (6.94)	0.162* (2.69)	0.323	0.465* (4.77)	0.091 (0.67)	0.189	0.377* (5.99)	0.234* (5.16)	0.427
R ²	0.474			0.442			0.517			0.486		
AdValues		0.275* (1.96)	0.275		0.434* (9.77)	0.434		0.407* (4.28)	0.407		0.513* (13.40)	0.513
R ²		0.670			0.683			0.652			0.744	

* The path coefficient is significant for the significant level 0.05.

For Cluster D, heavy searchers, the R² of adAttitudes is up to 0.744. The model has superior interpretation for this group of Internet searchers. As the antecedent factors of adValues, credibility is the most important factor, with the entertainment factor showing no influence at all. For the effect toward adAttitudes, credibility is still the most important factor, either in direct or total effects (see Table 12 under column Cluster D/Attitude). However, the negative perception generated by irritation should also not be ignored for the total path coefficient is up to -0.300 as the second place among the four adChars.

5. Discussion and Managerial Implications

5.1. Theoretical Implications

Informativeness has an effect on adValues as shown in Figure 2 and Figure 3 of Cluster D. There is no direct effect on adAttitudes. For Clusters A, B, and C, informativeness shows no contribution for adValues. We have argued that there are two reasons for Internet users to perceived value of sponsored links of the informativeness: the core information displayed on the sponsored links, or the connected webpages that may provide more sufficient information. For the three Clusters A, B, and C, the insignificance indicates the informativeness do not contribute to form the adValue for light and medium Internet searchers. In contrast, for heavy Internet searchers as Cluster D, sponsored links can fulfill their expectation of information needs. It might be that they have been more familiar with the context of search engine and more experienced on knowing what they will obtain after click the URL of sponsored links.

For the BC model results as shown in Figure 2, entertainment has significant effects on both adValues and adAttitudes. However, the cluster analysis display that entertainment has different influences for the four clusters shown in Figure 3. Entertainment has no importance for light searchers. However, as shown in Figure 3, it generates significant effects on adAttitudes yet has no effect on adValues for heavy searchers of Clusters C and D. This can be interpreted as being that for those heavy searchers, they do not access the exchange value because the entertaining content of sponsored links is not sufficient; however, they might appreciate those short phrases designed by advertisers in order to catch their attention.

As it is shown in Figure 3, irritation has a direct negative effect toward adAttitudes for all four clusters; however it significantly affects adValues for Clusters B and D only. For cluster A, the light searchers, the irritation is the only factor that contributes a direct, significant, and negative effect toward adAttitudes. In summary, the Internet searchers may not perceive the importance of irritation when they value the sponsored links; however, irritation does cause a negative feeling among those various Internet searchers.

As our research results show, ad credibility plays the most influential role toward the formation of adValues and adAttitudes. Because sponsored links contain limited information that is not comparable with regular Web ads, we infer that the significant role of credibility would have been inherited from the experience of users and the reputation of search engines.

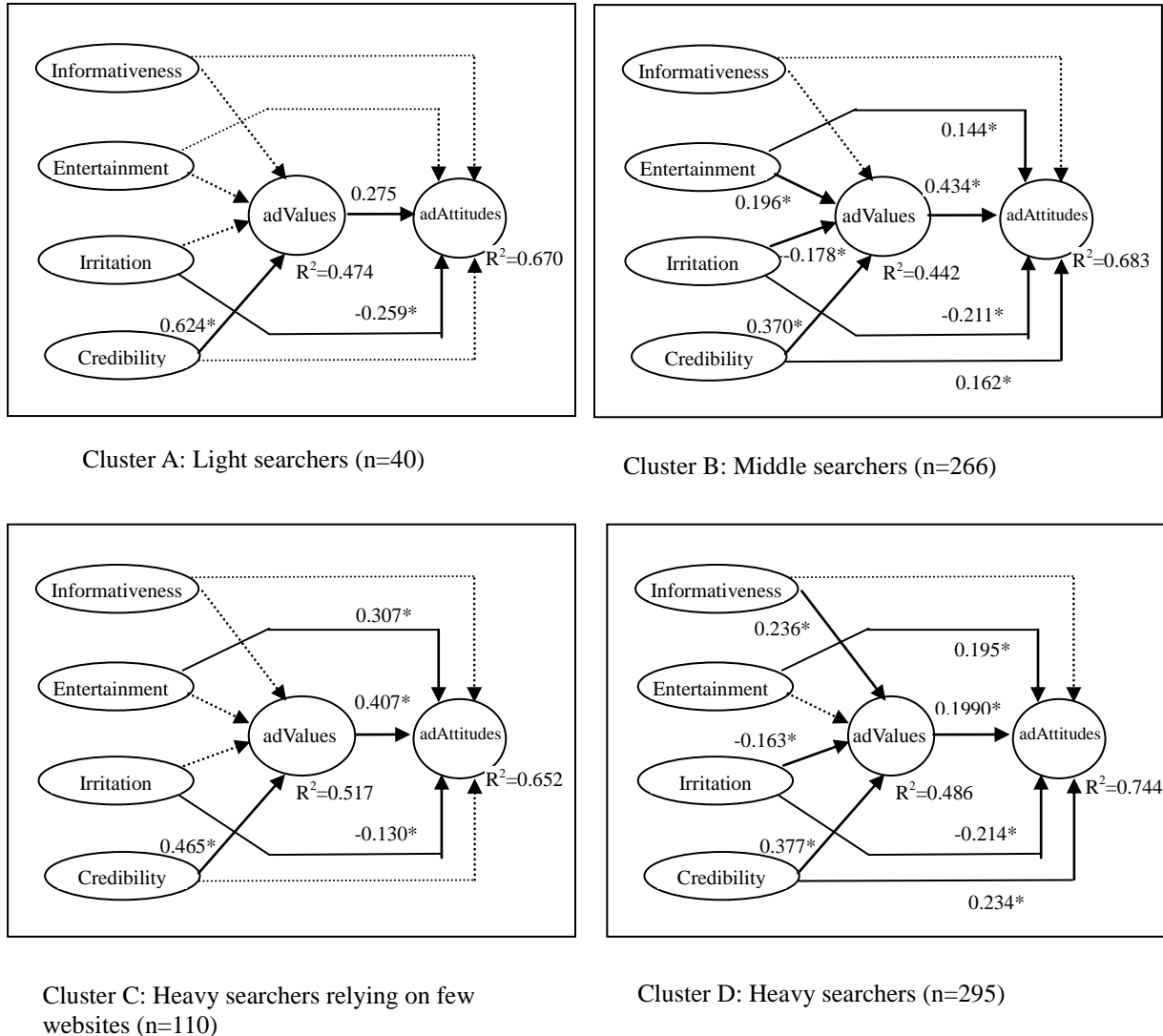


Figure 3: PLS results for each cluster of Internet searchers

1. Users' Experience: Most Internet users do not understand how the search algorithm is designed or developed, but they know how good the information is provided by the search engine. The more relevant information makes the higher satisfaction of information searchers. Moreover, the good search experiences will draw them back to utilize the search engine.

2. The Google legend [Battelle 2005]: The Google search engine has totally changed the global search market. For years, Google has a well-known policy of "don't be evil" and keeps emphasizing the fact that they do not intrude into people's emails or websites. They always aim for better search performance in terms of speed and relevance. The company insists a policy of neutrality and safety. Moreover, there are abundant introductions on the Google search algorithm, by commercial resources or academic papers. All these factors help in building up the credibility of the search engines.

5.2. Managerial Implications

The researches of Ducoffe [1996] and B&C model [2001] are for web ads that are usually displayed with multi media effects such as graphic banners, motion pictures, slogans or music. In this study, the sponsored links that carry the simplicity nature and can be only displayed with texts, the roles of informativeness, entertainment and irritation are not as significant as the credibility plays according to the research results. Nowadays, while people more rely on the Internet for information, trust and credibility have become one of the most emphasized e-commerce issues [McKnight et al. 2002; Soh et al. 2007; Benbasat et al. 2008]. Greer [2003] summarizes several categories relevant to the credibility of ad content: the brand or company reputation, the placement and the medium, contextual

consistency, and product involvement. Because most advertisers of sponsored links are small businesses or SMEs without well-known brands or corporation names, in addition, the sponsored links are offered by the largest worldwide search engines such as Google and Yahoo!, what the advertisers can do to strengthen the credibility is to manage the website of which the contents are consistent with the sponsored link. While the Internet surfers are not familiar with company or brand name, they would look for “peripheral cues” [Shamdasani et al. 2001]. The website is the further reference for the Internet surfers if they are interested in the sponsored link. Thus a well-designed website provides sufficient information of products and the advertiser may enhance the trustworthy image.

Considering the entertainment effect, except for the light searchers (cluster A), it plays a significant role toward the adAttitudes. It indicates that many searchers favor sponsored link if it carries entertaining effect. The advertisers can either add interesting slogan in the text of sponsored links or design the website with entertaining effects. However, credibility is more important as the research results show. The advertisers with limited resources should set “credibility” as the higher priority in the design of sponsored links.

On the contrary, irritation contributes negatively toward adValues and adAttitudes. It implies that irritation may or may not decrease the perceived values of Internet users yet it generates negative feelings or responses toward sponsored links. Thus, search engine marketers should not neglect the fact that users do not like being irritated by advertisements.

6. Conclusions

This study sought to investigate the perceptions and attitudes of Internet searchers toward the sponsored link based on the theoretical models of Ducoffe [1996] and Brackett and Carr [2001]. The research results show that informativeness was of no importance to the context of a sponsored link. Entertainment plays a significant role; however, as it is especially important for people who are heavy web searchers yet rely only on few websites. Irritation plays an important negative role so that advertisers and search engine providers should carefully handle this issue to avoid arousing users’ negative attitudes and feelings. Moreover, credibility that has become the most important factor. The search engine provider and advertisers should be aware of the need to maintain and improve their credibility to earn the trust of Internet users.

As the result summary of the cluster analysis, four clusters were classified from the sample. We then tested the research model for the four clusters, and obtained the following findings.

- Light searchers (Cluster A): Compared with the other three clusters, this cluster has the least search degree, the highest mean age and the highest male proportion. Credibility is the only relevant factor in forming their adValue, and irritation is the only factor among the four adChars to directly affect their adAttitude.
- Middle searchers (Cluster B): Their search degree is in between the light and the heavy searchers. Credibility is the most important antecedent variable to adValues and adAttitudes.
- Heavy searchers relying on a few websites (Cluster C): Cluster C and Cluster D have similar search degrees, yet Cluster C relies on the fewest websites than the other clusters. This is the only group of Internet searchers who is affected the most by entertainment instead of credibility toward the adAttitudes.
- Heavy searchers (Cluster D): Credibility also plays the most influential factor for adValues and adAttitudes.

6.1. Research Limitations

The current study has limitations. First, the sample is collected primarily through the Internet. The research results carry the problems of sampling method, such as self-selected bias or sample representativeness. Moreover, the survey platform we placed our questionnaire, my3q.com, is an Asian-oriented websites; thus, it may not completely be suitable to generate the research results in areas beyond Asia. Second, this research design does not segregate perceptions of sponsored links and the advertising website. This may diminish the face validity of the constructs of adChars. It is suggested in the future research to distinguish these two aspects. Third, the cluster analysis divides the Internet searchers to four groups. Although we have testify the BC models for all four clusters and concluded various model results, it does not provide a thorough profile for Internet searchers in different search utilization levels⁴.

6.2. Future Study

It is mentioned as a limitation that the research design does not distinguish the perception of text ad from its advertising website for the sponsored link. A suggestion for future research is to separate the effects: (1) Internet searchers’ perceptions of sponsored links referring to the superficial texts and reasons to click the URL; (2) their

⁴ The authors express their gratitude to an anonymous reviewer who suggested a research limitation for lacking a qualitative study that portrays the perceptions and behaviors of Internet searchers and provides a verification for the statistical results in this study.

perceptions of the advertising website. The results can help advertisers in the design of sponsored links associated with website in order to effectively draw their target customers.

Another possible future research is to study the issue of credibility for sponsored links. Although it is the most important antecedent factor toward adValues and adAttitudes, there is no rating system to indicate the credibility of advertisers like e-auction website (such as e-Bay or Yahoo!) to present the credibility of online sellers or buyers. Besides, the advertisers of sponsored links are most small businesses or SMEs. The unknown company names and brands can not contribute to the source credibility. To construct the credibility and further strengthen it, there are two possible streams: one is for search engine to provide a support system that will ascertain the credibility of sponsored links and advertisers; the other is the efforts of advertisers to work on the design of sponsored links.

For the second stream, the advertisers need to know what makes sponsored links credible to Internet users. Thus a future work can focus on the fundamental problem⁵: what drives the credibility of sponsored links? This issue might contain two research themes. The first one is the perceptions of credibility on the display of sponsored links, such as the brand or company name, product descriptions, URL, or ad position or rank listed on SERP. The second research theme may investigate the credibility perceptions toward the sponsored link for the text contents and linked website, and moreover, how the credibility perception can be affected by the consistency of these two elements (contents and website). The research result can provide an explicit guideline for advertisers on the design of sponsored links.

Acknowledgement

This study was funded in part by the National Science Council (NSC 97-2410-H-110-030 and NSC 98-2410-H-110-003).

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⁵ The authors thank an anonymous reviewer who addressed the issue for a future research.

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