

EFFECT OF SPONSORED SEARCH ON CONSUMER TRUST AND CHOICE

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ABSTRACT

This study examines consumers' trust of and purchase choice from vendors listed in organic and sponsored search results. We conducted an experimental study with 132 subjects and controlled for several factors related to consumers' online experiences (website quality, duration of search, product familiarity, and online shopping frequency). Our study shows that trust is lower for sponsored links compared with organic links, and consumers are less likely to buy from vendors in sponsored search results. However, the disclosure of information about vendors' reliability reduces this negative effect. Specifically, the disclosure of vendors' reliability ratings increases consumers' perceptions of trust in the sponsored results and significantly influences consumers' selections of vendors in terms of reliability.

Keywords: Sponsored Search, Organic Search, Consumer Trust, Vendor Reliability

1. INTRODUCTION

Search engines, such as Google and Yahoo!, typically generate two sets of results, identified as organic and sponsored, and display them on the same search engine results page (SERP). Organic search results are selected and ranked by the search engine's proprietary algorithms, which take into account content relevance, number and rank of links, and link structures, along with many other features (e.g., [2, 14]). Thus organic results are also referred to as algorithmic or natural results because websites in organic results are selected by search engine's proprietary algorithms and they do not need to pay the search engine company in order to be listed there. Sponsored results appear on a SERP in response to a search query because the focal companies, organizations, or individuals (i.e., advertiser or provider) bid on keyword(s) in the search query and pay the search engine company in order to be listed in the sponsored search results. In the sponsored links, an advertiser is ranked by its bid price and search engine-assigned quality score which is based on several factors including click through history and landing page relationship to the link. Thus, the sponsored results are a reflection of the paid behavior. Search engines usually display paid results alongside (e.g., to the right, top, or sometimes the bottom of)

organic ones and distinguish them with a label, such as "Sponsored Links" or "Sponsored Results". Refer to Figure 1 for an illustration of organic and sponsored search results.

As electronic commerce continues to grow, content providers have accepted sponsored search as an effective means to advertise their products or services online by associating a set of keywords with their Web pages. Web users often search for desired products and information from sponsored results. About 15% of search engine clicks are on sponsored links [20]. More than 13% of traffic to commercial sites therefore is generated by search engines, and more than 40% of product searches begin with search engines [7]. Total industry revenues reached \$4.6 billion in just the first half of 2004 [7], and the sponsored search advertising market in 2010 was estimated at greater than \$33 billion [11]. Paying a search engine company for sponsored links becomes the fastest way to increase a website's visibility for advertising on the Internet [15]. Paid search also represents the dominant revenue source for search engine companies. For instance, according to Google's annual income statements (<http://investor.google.com/financial/tables.html>), in both 2010 and 2011, the advertising revenues accounted for more than 96% of its total revenues. Because content providers can buy positions in paid search results, sponsored search grants them greater exposure to Web users, which in turn would generate more sales for those advertisers.

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This fast growing market is a key focus of current studies in computer science and information systems. Previous research suggests that subjects are biased against paid search results when they become aware of how paid search works [18, 19], how such bias might affect consumers' online shopping behavior is not well documented in the literature. To fill the gap, this study evaluates the effectiveness of paid search results from two important consumer perspectives: online trust and purchase likelihood. Does the level of consumer trust vary with the type of search result (organic versus sponsored)? Does the type of search result influence consumers' decisions to purchase from a particular vendor? To address these research questions, the next section outlines some work that compares online search results and develops hypotheses regarding consumers' different reactions to vendors that are listed in organic and paid search results. The test of the hypotheses is based on an experimental study. The conclusion section then discusses the findings and implications for online marketing theory and practice.

2. LITERATURE REVIEW

2.1 Sponsored Link Effect

Prior work suggests negative general responses to sponsored search results. According to several studies, users are suspicious of the content relevancy of the sponsored results and thus are biased against sponsored results. For example, Jansen, Brown, and Resnick [18] show that consumers evaluate organic links as more relevant than sponsored ones before they view the page contents for links in SERPs. However, such differences diminish after they read the contents of both types of links. Therefore, bias against sponsored links could be overcome if consumers view the site contents. Similarly, Jansen and Resnick [19] report that 65% of their respondents perceived sponsored results as less relevant and unworthy of consideration; however, after viewing the contents of those sponsored links, they provided ratings similar to those of unsponsored sites. Consumers' negative emotional responses to sponsored links appear to be reflected as a result of the advertising nature of sponsored results [25]. The requirements for showing in sponsored links are lower than the criteria for advertising in traditional media, which implies that poorly known or less established firms with fewer loyal customers can target potential customers through sponsored links just by bidding on their desired keywords to a search engine company.

Although prior literature recognizes biases against sponsored links, no study explicitly examines their possible negative influences on consumers' perceived trust. Sponsored advertising continues to grow and becomes more important for online

shopping, and so it is necessary to determine how they might affect Web consumers' behavior. This study explores the effectiveness of sponsored links by examining whether sponsored results affect consumers' trust and whether a vendor appearing in a sponsored link suffers decreased purchase likelihood.

2.2 Sponsored Links and Online Trust

A well-accepted definition of trust is "a psychological state comprising the intention to accept vulnerability based on positive expectations of the intentions or behaviors of another" [34]. The concept of online trust, discussed in this study, refers specifically to consumers' trust of a company, based on its website. This trust reflects a consumer's perception of a site's ability to perform required functions and the firm's positive intentions in support of the online storefront [1]. Online trust further indicates consumers' perception that the website can meet their expectations, provides reliable information, and supports confidence. Online trust thus is an overall measure of consumers' online shopping experience.

Compared with offline, consumers shopping online must rely more on trust, because the environment does not allow them to touch or try the product, and it is more difficult to judge the retailer's reliability. In addition, consumers make payments for the products they see on the screen. Therefore, as Walczuch and Lundgren [39] note, "In the online relationship, however, no sale would be made without at least some trust," and several antecedents appear to lead to online trust.

Following Morgan and Hunt [27], Mukherjee and Nath [28] identify shared values, communications, opportunistic behavior, privacy, and security as potential antecedents of online trust. Among them, opportunistic behavior reflects the integrity of the seller. Transaction cost theory [22] states that "the essence of opportunistic behavior is deceit-oriented violation of implicit or explicit promises about one's appropriate or required role behavior". Morgan and Hunt [27] propose that opportunistic behaviors lead to decreased trust in a buyer-seller relationship. Mukherjee and Nath [28] adapt this concept of opportunistic behavior to an online shopping environment. Following their study, opportunistic behavior in this study is related to the integrity of online sellers and refers to the likelihood of presenting misleading information to prospective buyers. Search engines have drawn criticism by hiding the nature of the sponsored links. Federal Trade Commission reports that search engines do not adequately label links [13]. The Pew Internet and American Life Project [5] finds that 35% of searchers reported that they were unaware of the distinction between sponsored links and non-sponsored links. Yet, as the general public becomes more aware that

companies listed in sponsored links are placed as advertisements rather than the natural search engine results, companies exhibiting such behavior could be considered opportunistic and harm the integrity of the online retailer. According to Morgan and Hunt [27], such opportunistic behavior not only has direct effect in reducing the trust, the perception that the other party's engaging in such behavior would further destroy the trust in the buyer-seller relationship. Thus, we propose:

H₁: Consumers exhibit a lower level of trust toward vendors that appear in sponsored links than to vendors in organic search results.

An immediate consequence of reduced trust is lower purchase likelihoods [27, 28]. Several studies (e.g., [3, 10]) related to online buyer-seller relationship point out that trust is a necessary precursor to online purchase, and lack of trust is the primary reason that prevents consumers from online shopping. Along this line, our study proposes that a lower degree of trust to the retailers appearing in sponsored links causes consumers to lower their likelihood of purchase:

H₂: Consumers are less likely to purchase from vendors that appear in sponsored links than from those that appear in the organic search results.

2.3 Information Disclosure and Online Trust

Because of the importance of online trust, prior studies explore different ways of increasing the level of trust between consumers and online retailers. According to Wakefield and Whitten [38], reducing the level of uncertainty becomes important since consumers are often reluctant to make purchases from unknown merchants due to uncertainty about vendor behavior. Shankar, Urban, and Sultan [35] report that companies' perception of online trust includes issues from website security and privacy to a multidimensional and complex construct including reliability/credibility, emotional comfort, and quality for multiple stakeholders. To reduce such uncertainties, online vendors start to use a third-party assurance to disclose information regarding critical issues in the shopping environments. These issues vary from vendors' overall reputation to protection of consumers' privacy information and security of online transaction. Some examples of information disclosure include Web assurance seals and vendors' reliability ratings. By disclosing this information, vendors attempt to drive trust by mitigating uncertainty and giving Web users a sense of external support [26]. Wang, Beatty, and Foxx [40] examine how observable cues (e.g., security disclosures, awards from neutral sources, and seals of approval) on the websites of small online retailers affect consumer trust. Applying

regulatory focus theory, Noort, Kerkhof, and Fennis [29] study the persuasiveness of online safety cues, such as money-back guarantees and safety warranties. However, online consumers do not tend to consult the privacy and security statements of assurance providers [30]. Third-party assurance programs, such as the Better Business Bureau (BBB) Online, help build trust in online retailers [4]. Considering the general sense of trust to BBB Online, vendors' reliability ratings from BBB Online may enhance customers' perceptions of trust in the sponsored links, and thus this study hypothesizes.

H₃: Consumers' trust to websites in sponsored links is higher when vendors' reliability ratings are disclosed.

Trust also positively influences consumer intentions to purchase [9]. Kovar, Burke, and Kovar [23] find that noticing and clicking the seal of a third-party assurance (WebTrust) on a retailer's Website positively influence consumers' expectations and intent to purchase online as the seal indicates a connection between the merchant and the assuring third party. Thus third-party assurance can reassure potential customers and increase the probability of purchase [21]. In addition, compared with organic results, sponsored results are more relevant for e-commerce searches. For example, after examining a broad range of e-commerce queries, Jansen [17] finds that sponsored links are more relevant than organic links for e-commerce queries. Also according to Ma, Pant, and Sheng [24], sponsored results for e-commerce searches not only contain more relevant vendors than organic links, but they also tend to offer the lowest prices. Thus, when vendors' reliability ratings are known, more subjects could choose vendors from sponsored links which have satisfactory ratings and offer lower prices.

H₄: Consumers' online purchase likelihood from websites in sponsored links is higher when vendors' reliability ratings are disclosed.

3. METHODS

The study investigates two issues: the first is the impacts of labeling (i.e. showing the label of "Sponsored Links" in the SERP) and reliability disclosure (i.e., revealing vendors' reliability ratings identified from BBB Online) on consumers' trust toward online vendors, and the second is whether such impact on trust would reduce the chance of buying from a vendor in the paid search results.

3.1 Design

A 2 (with versus without the label of "Sponsored Links") × 2 (with versus without disclosure of vendors' reliability ratings) between-subjects design was used. The labeling factor

indicates whether the label “Sponsored Links” appeared on the SERP to indicate the paid results. Under the condition of labeling, some subjects used the system as shown in Figure 1 and were all clearly aware of the two types of search results. Under the condition of without labeling, some other subjects used the system as shown in Figure 2 in which organic and paid results were evenly mingled and

displayed in the same column. Internally, the system knew which results were original organic results and which were original sponsored results, but subjects were not aware the difference. Except for the differences in the labeling, the retailers and the information content shown in the two systems were the same.

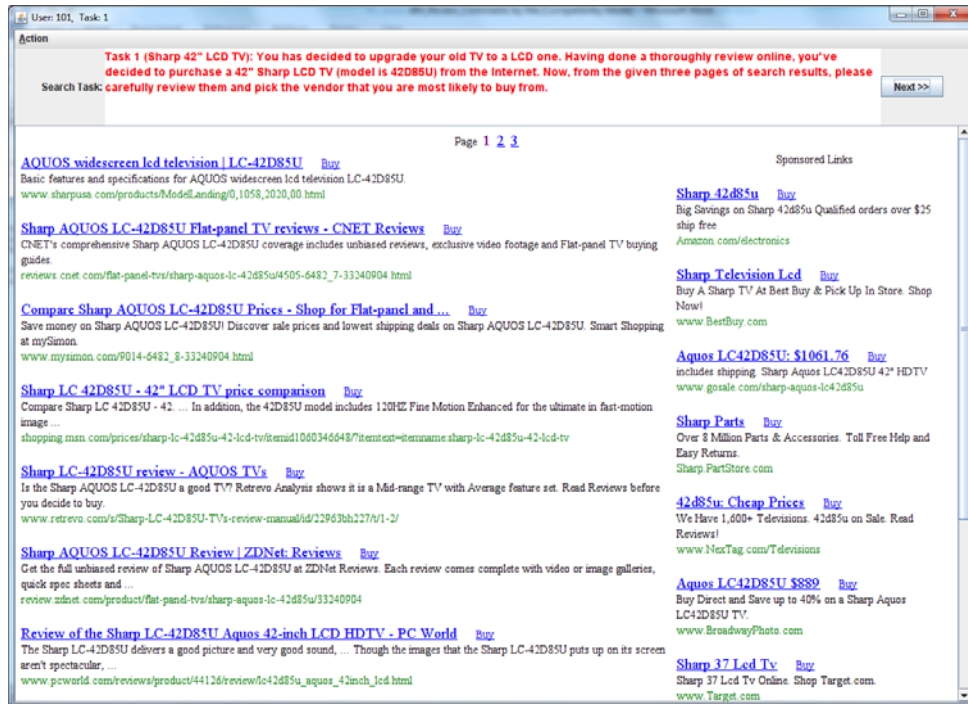


Figure 1: A system displays organic and paid results in two columns and shows the label of “Sponsored Links”

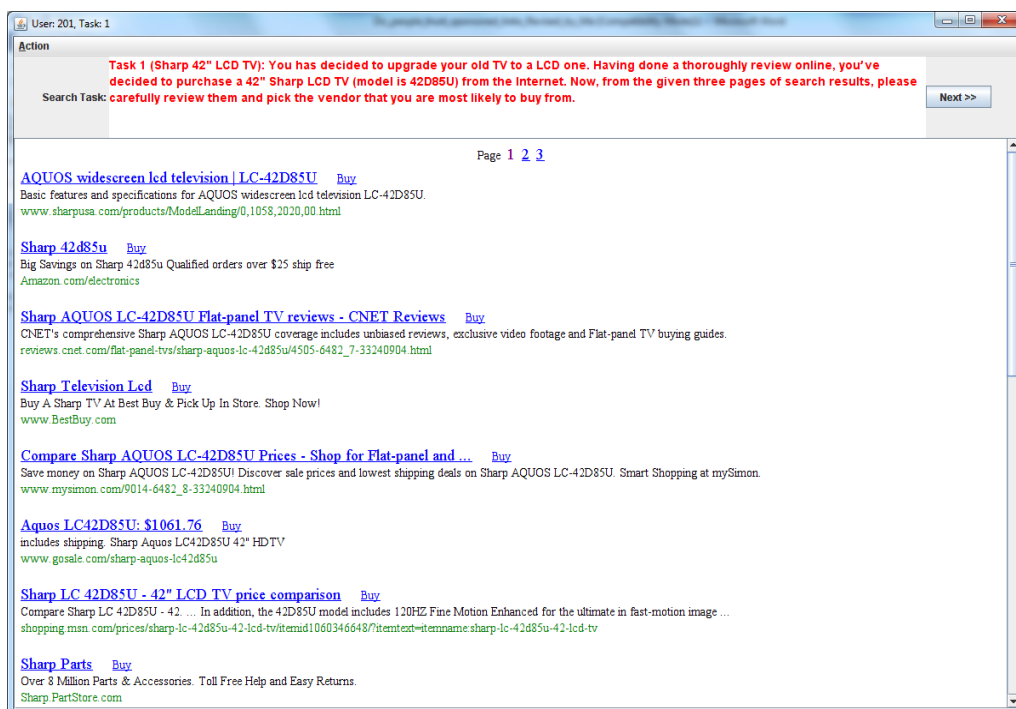


Figure 2: A system displays evenly mixed organic and paid results in one column, and does not have the label of “Sponsored Links”

Disclosure is another experimental variable that shows whether the vendors' reliability information, as determined by BBB Online, is disclosed to subjects. In the beginning of the experiments, subjects, who were assigned to the "disclosure group", received a separate sheet of paper showing the BBB reliability records for those vendors that were present in the search results. These vendors were sorted alphabetically. Each subject was asked to purchase two products, a LCD TV and a USB drive. The choice of two products serves as a replication factor, lending to potential external validity of the experiment. We chose the categories of electronics (TV) and computer hardware (USB) because of subjects' familiarity as well as their popularity in online shopping. It is reported that 74.1% of electronics and 48.1% for computer software and hardware [33] are bought from online. Our results later show that there is no significant difference between the two products regarding the two design factors (i.e., labeling and disclosure). To summarize, each subject was randomly assigned to one of the four treatments, and during experiments the subject explicitly indicated from which website he or she would purchase the product (by clicking the "Buy" link next to the search result). Table 1 illustrates the condition of four treatments. To control for subjects' prior knowledge of retailers, the four treatments contained the same retailers which were identified by the same search queries from the Google search engine (see the next section for details). Subjects participating different treatment groups received the same search results, evaluated the same retailers, and so the difference across groups can be attributed to the different design factors (i.e., with vs. without label of "Sponsored Links" or with vs. without information disclosure).

Table 1: Condition of the four treatments

	Labeling	Reliability Disclosure
Treatment 1	labeling	disclosure
Treatment 2	without labeling	disclosure
Treatment 3	labeling	non-disclosure
Treatment 4	without labeling	non-disclosure

3.2 Systems

We developed two systems with different interfaces. One system, as shown in Figure 1, mimics a commercial search engine by displaying the organic and paid results in two columns of the same SERP. A label of "Sponsored Links" is clearly shown on top of the paid results to indicate the treatment of with labeling. Similar to the webpage displayed by a commercial search engine, the width of the organic result column occupies 70% of the entire Web page. The other system, as shown in Figure 2, displays both organic and paid results in the same column by evenly mixing them, such that the first organic result is right

above the first sponsored result, and the second organic result is shown right below the first sponsored result, and so on. Therefore, the two systems contain the exact same search results but they are displayed differently for different groups of subjects under different treatments. So our design is balanced across different subject groups in terms of retailers shown in the search results.

During the experiments, subjects could click any hyperlink in the organic or sponsored search results in our systems to view the page content at real time in an Internet Explorer (IE) window. Subjects could also click and view any link in the newly opened webpage. All the organic and paid search results (and also their indices/sequences) were real search engine results pre-fetched from Google but displayed through our developed systems. After viewing product details from separate webpages, if a subject decided to purchase the item from a vendor, he or she needed to click the "Buy" link next to the search result in our system so that to end the current search task and proceed to the next. Subjects did not need to provide payment information to make an actual purchase in the experiments. The system created a log file to record all interactions from each individual subject, such as a click on the Buy link, on a link to an organic or paid result, or on a page number in SERP.

3.3 Procedures

One hundred thirty-two undergraduate students participated in the study in exchange for an extra credit. In groups of 20–30 people per treatment/session, they were randomly assigned to one of the four treatments, and then completed a post-experiment questionnaire in a computer lab. At the beginning of a session, each subject received a questionnaire and unique user ID and password. A moderator briefly explained the basics of Internet search and conducted a demonstrative search task to show participants how to use the system. The instructions described that they should pretend they were shopping for the products in question as if in real life. Each respondent then logged in to the system with his or her unique user ID and password; thus, each participant's activities were recorded in a separate log file. Subjects needed to first complete the demonstration task in order to be familiar with using the system, then performed two search tasks for the two products (i.e., TV and USB drive) and answered questions after each task. At the end, they responded to questions related to their online shopping experiences.

According to Hong and Cho [16] consumer trust in an intermediary marketplace influences purchase intention to individual vendors hosted in the marketplace, showing there is a trust transfer from an intermediary to a community of vendors. Therefore,

in our study, we restrict subjects to select only vendors directly showing in search results, and exclude links for e-marketplaces, such as price comparison websites, which host multiple vendors.

3.4 Dependent Variables

The first dependent variable is consumer trust. According to Pan and Zinkhan [31], who adopted a simplified version of an established scale, the measurement, detailed in Appendix A, consisted of four seven-point scales (1 = “strongly disagree” and 7 = “strongly agree”). The scale reliability reaches .92 (Cronbach’s $\alpha = .92$, $n = 132$).

The second dependent variable is the type of search result (organic or sponsored) from which the subject chose to purchase the product in a search task (by clicking on the “Buy” link displayed next to the search result.)

3.5 Manipulation Check

Consistent with our expectation, subjects who received the paper disclosing vendors’ BBB reliability ratings were less likely to choose those vendors with unsatisfactory BBB ratings than those who did not had such information. For the group that did not receive disclosure information, 55.6% subjects chose to buy from vendors with unsatisfactory BBB ratings. For the group that received vendor’ reliability information, this number was dropped to 23.4%. Meanwhile, under the “no labeling” condition in which organic and sponsored search results were evenly mixed, 65% of subjects chose vendors which originally were sponsored links. For the group with labeling in which paid results are shown under the label of “Sponsored Links”, this number was reduced to 49%. These results support the validity of manipulating the two experimental factors in the design of experimental stimuli.

3.6 Independent Variables

Website interface quality indicates how well the website design helps consumers search for product information [36, 37]. Website interface quality is related to website layout, navigation sequence, and convenience to search for a product. All these aspects are important to consumers’ online shopping experience [36, 37]. Following Park and Kim [32], the website interface quality is measured by a four-item scale listed in Appendix B ($\alpha = .91$, $n=132$).

In addition, we also measure three important factors related to consumers’ knowledge and involvement in the search tasks. The product familiarity asked how familiar the respondent was with the product, with 7 as “most familiar” and 1 as “not familiar at all.” Duration equaled the time in minutes spent on a search task, which was converted from milliseconds captured by the system and recorded in the log file. Online shopping frequency

referred to how often a subject shops online, with the most frequent equivalent to “twice a month” and the least frequent to “never”.

4. RESULTS

An analysis of covariance (ANCOVA) tests H1 and H3, with consumer trust as the dependent variable. Regarding consumers’ likelihood to purchase from vendors in sponsored links, logistic analysis is used to verify H2 and H4, with the type of search result (i.e., organic or sponsored) as the dependent variable.

4.1 ANCOVA Results for H1 and H3

An ANCOVA with four covariates (website interface quality, duration, product familiarity, and online shopping frequency) tests the hypotheses. In support of H1 and H3, the results in Table 2 show that Web trust depends on two factors: labeling ($F = 5.23$, $p < .05$) and information disclosure ($F = 9.44$, $p < .01$). The interaction effect between labeling and information disclosure is not significant ($F = 0.06$, $p = 0.80$), such that the effect of information disclosure on trust doesn’t vary with two labeling settings. Among the four covariates, two exerted positive impacts on Web trust: website interface quality (Meanwebsite interface quality = 6.12, $F_{\text{website interface quality}} = 21.31$, $p < .01$) and duration (Meanduration = 5.11, $F_{\text{duration}} = 5.64$, $p < .05$). Product familiarity showed a marginal positive effect (Meanfamiliarity = 4.71, $F_{\text{familiarity}} = 2.92$, $p = .09$).

Pairwise comparisons further explain the effects of labeling and information disclosure. After controlling for the four covariates, respondents exposed to the “Sponsored Links” label expressed less trust toward the vendor website (Meanwith labeling = 5.72, Meanwithout labeling = 6.0, $F = 5.23$, $p < .05$). However, disclosing a vendor’s reliability rating helped increase trust (Meanwithout disclosure = 5.68, Meanwith disclosure = 6.04, $F = 9.44$, $p < .01$). This further supports H3 as disclosing vendors’ information helps increase consumers’ trust regardless of the labeling condition.

4.2 Logistic Analysis for H2 and H4

A binary logistic analysis was performed to validate H2 and H4. This statistical analysis predicts the likelihood that one of the options for the dependent variable would occur, on the basis of a series of independent variables [12]. In this case, the dependent variable measured whether a respondent would choose a website/vendor from the organic or paid results to buy the product. The model included the two main predictors and same set of covariates as those in the ANCOVA. The overall model exhibited a $\chi^2(8)$ of 20.29 ($p < .01$).

As shown in Table 3, the two main factors, labeling and disclosure, influence the choice of organic or paid results. First, respondents using the system with the “Sponsored Links” label were less likely to choose the paid result (Wald $\chi^2(1) = 10.29$, p

$< .01$). In other words, people have a bias against the sponsored links in an online shopping environment. This conclusion supports H2 and is consistent with previous finding by Jansen and Resnick [19] that people have a bias against paid results.

Table 2: Effects of labeling and information disclosure on web trust, dependent variable: Web trust

	F statistics	p-value
Main Effects		
Labeling (A)	5.23	0.02
Information disclosure (B)	9.44	0.00
Interactions		
(A)×(B)	0.06	0.80
Covariate		
Web site quality	21.31	0.00
Duration	5.64	0.02
Product familiarity	2.92	0.09
Online shopping frequency	0.44	0.51

Table 3: Results of logistic regression, dependent variable: binary (Clicking on the “Buy” link from an organic or a paid search result)

Variables	β	Wald	df	Sig.	Exp (β)	95.0% C.I. for Exp (β)	
						Lower	Upper
Labeling	-0.86	10.29	1	0.00	0.42	0.25	0.72
Information disclosure	0.01	0.00	1	0.98	1.01	0.60	1.67
Website interface quality	0.14	1.08	1	0.29	1.15	0.88	1.51
Duration	-0.08	4.49	1	0.03	0.92	0.85	0.99
Product familiarity	0.05	0.44	1	0.51	1.05	0.90	1.20
Online shopping frequency	0.17	3.83	1	0.05	1.18	1.00	1.40

Second, the effect of information disclosure was not significant (Wald $\chi^2(1) = .00$, $p = .98$), and H4 therefore was not supported. We noted that many participants in both groups (with and without disclosure) selected known vendors, which were of organic results and had satisfactory BBB ratings. As a result, the disclosure of vendors’ ratings did not significantly increase purchase likelihood for sponsored results. For example, approximately 15% of subjects across both groups (with and without disclosure) chose the well-known retailer, Amazon.com, regardless of the disclosure condition. However, the further post-hoc analysis confirms that when information was disclosed, consumers tended to select companies having satisfactory BBB ratings.

Across both products and considering only companies with either satisfactory or unsatisfactory ratings (i.e., excluding those without BBB Online ratings), prior to the disclosure of the reliability ratings, more than half of the respondents (55.6%) chose companies with unsatisfactory ratings, but this number was dropped sharply to 23.4% when subjects received the vendors’ ratings. A binomial test also showed a significant difference ($p < .01$) between the

two groups in terms of their selections of satisfactory and unsatisfactory companies. The comparison across the two product categories revealed similar patterns (both $p < .01$). More specifically, for the LCD television without disclosure, 58.1% of subjects selected companies with unsatisfactory ratings, and with disclosure, 28.6% did so. For the USB drive, the percentages of choosing unsatisfactory companies were 52.6% and 19.0% before and after disclosure, respectively. In conclusion, online vendors that have satisfactory BBB ratings benefit from the information disclosure, regardless being listed under the “sponsored links” label or mixed with the organic results.

Third, two of the covariates increased the likelihood of choosing the sponsored links: duration (Wald $\chi^2(1) = 4.49$, $p < .05$) and online shopping frequency (Wald $\chi^2(1) = 3.83$, $p = .05$). Duration was the time (in minutes) that subjects spent on a task (e.g., browsing search results, viewing product details’ pages, and identifying a site from which to buy a specified product), which provided an indication of involvement. Ma, Pant, and Sheng [24] examine search results for 244 different camera

models and 245 different LCD TV models through the Google search engine, and they find that organic results contain significantly lesser vendors than those in sponsored results. As participants spent more time, the odds for them to find a vendor from organic links increased. Since the trust level associated with the organic results was higher, so as more time was spent, the chance of choosing a vendor in organic links increased. The result of online shopping frequency suggests that as consumers shopped more often on the Internet, the likelihood that they would choose a sponsored link increased. As consumers gain more online shopping experience, the negative bias against sponsored links appears to diminish.

5. CONCLUSIONS AND DISCUSSIONS

In recognition of the growing popularity of sponsored search, this study has examined consumers' responses to this form of online advertising and reported several key results. First, our findings support both H1 and H2, and this initial empirical evidence indicates a negative effect of sponsored links on consumers' trust in online retailers and in their purchase likelihood as well. Second, in support of H3, disclosing vendors' reliability information helps increase consumers' trust to sponsored results. However, there was no positive impact of disclosure on purchase likelihood for sponsored links, as predicted by H4, though the results did reveal a significant positive influence on the selection of vendors in terms of their reported reliability.

Understanding how consumers perceive online sponsored links is vitally important to firms that rely on search engine marketing. Findings of this research offer practical implications for different stakeholders. All major commercial search engines, such as Google, Microsoft, and Yahoo!, have adopted the sponsored-search business model by presenting sponsored results side by side with organic ones, but do not disclose anything about vendors' reliability information on the SERPs. In this study we find that consumers trust more on vendors in organic results than those in the paid listing. We also find that consumers when provided with vendor reliability ratings from third party sources such as Better Business Bureau, chose far fewer companies with unsatisfactory ratings. Therefore, sponsored search advertising should be monitored closely with regard to the level of trust it invokes in consumers and their purchase likelihood. Potential negative impact in these contexts may offset some benefits of sponsored search, in that sponsored advertising has become the dominant revenue model for search engine companies, and consumers increasingly depend on search engines for their information and shopping

needs. Search engine providers may not instantly get hurt when search engine users (consumers) find vendors in the sponsored search results are less trustworthy. However, if vendors realize that their credibility would not be the best because they are featured in paid search, the sponsored search business model might be undermined to certain extent. Search engine companies could consider alternative ways of showing reliability-related content in addition to the sponsored search results. As for the sponsors, especially those less known and less established ones, they should understand that except choosing a low price policy, when they can demonstrate their reliability to consumers, sponsored search could become more effective. Thus, firms are encouraged disclose their reliability information to offset a possible consumer bias against sponsored links. Besides, on the basis of various findings from prior research regarding increasing the level of trust for consumers, firms are encouraged to use a third-party assurance, such as including Web assurance, disclosing awards and seals of approvals, and highlighting money-back guarantees and safety warranties. Considering that sponsored results tend to contain more vendors and the lowest prices than organic results [24], although consumers trust organic results more than sponsored ones, they can look for vendors' ratings from a trustworthy third-party assurance program and then using the ratings to help them identify vendors not only from organic results but also from sponsored links. In addition to company ratings from a third-party assurance program such as BBB Online, electronic word-of-mouth (eWOM), such as online consumer reviews and blogs, offers an influential source of reliability information. For instance, Zhu and Zhang [41] show that online product reviews are more influential for less popular products about which alternative information is relatively scarce. Fan and Miao [6] find that customers who are more involved with a product are more likely to accept and use positive consumer reviews. Fu and Chen [8] show that high proportions of negative comments in blogs affect customer attitude toward products at any level of customer involvement.

6. LIMITATIONS AND FUTURE DIRECTION

Several limitations in this study can be addressed in future research. First, choosing the two different brands (Sharp and Lexar) could confound the results by consumers' prior attitudes to these brands. As a possible future study, it would be interesting to explore the effectiveness of paid search across different product and brand types. Second, the study examined consumers' trust level towards search

engine providers. Some consumers' personal characteristics including level of risk-taking or risk-avoiding can be incorporated as potential moderators. Lastly, cross-cultural comparisons would be helpful in understanding consumers' differential responses to online search advertisement

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APPENDIX

Appendix A: Online trust measures (Cronbach's $\alpha = .92$, $n = 132$)

1. The website is from a trustworthy online store.
 2. I can count on the website to protect my personal information from unauthorized use.
 3. I can count on the website to protect my payment information from unauthorized use.
 4. I trust the website to deliver the purchase as promised.
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Appendix B: Website interface quality measures (Cronbach's $\alpha = .91$, $n = 132$)

1. The website is easy to navigate to the desired pages.
 2. The website is convenient to order a product.
 3. The website is user friendly.
 4. The website is convenient to search for a product.
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