How People Perceive Sponsored Search Ads: Toward A Unified Research Model

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Abstract

Sponsored search ads appear next to search results when people look for products and services on search engines. In recent years, they have become one of the most lucrative channels for marketing. However, solid research is lacking to study why and how this channel works. In this paper, we investigate the mechanism web searchers use when deciding to click on a sponsored search ad. More specifically, we explore aspects of ad features and user characteristics that will influence the web searchers’ perceptions on sponsored search ads and their click behaviors. Based on previous literature, we propose a unified research model using Prominence-Interpretation Theory and the Heuristic Systematic Model. Preliminary analysis shows significant relationships between ad features and user characteristics with user perceptions that provide insight on sponsored search ads for researchers and practitioners.

Keywords

Sponsored search ads, click behaviors, Prominence-Interpretation Theory, Heuristic Systematic Model.

Introduction

Over the past ten years, sponsored search ads, or pay-per-click ads (PPC ads), have been one of the most popular channels for marketers to invest in. The bidding system for search advertising currently operates through merchants who bid for their ads to show up in preferable positions among search engine results pages. Marketers pay search engines for each click-through that customers make via their ads. According to Google 2018 annual report, Google makes more than 80% of its revenue from PPC ads (Flynn, 2018).

Despite their popularity, the effectiveness of PPC ads has frequently been cast into doubt. While advertisers pour a fortune into PPC ads for preferable positions, the click-through rates (CTRs) are usually not satisfying. The average cost per click for a keyword can exceed $58 (Gabbert, 2017), but advertisers should expect an average CTR of no more than 1%-2% (Hochman, 2017). Among these clicks, a terrifying 34% of them are made by mistake (Winsauer, 2016). This suggests that if PPC campaigns are not properly set up and maintained, it can be a black hole for advertisers’ money. Moreover, there is a growing sentiment that many people hate search ads and tend to avoid them. One report estimates that ad blockers have 198 million active users in 2016. People may feel overwhelmed, interrupted, or even stalked by bad digital ads. While they tend to avoid them, they don’t really mind the good ones (Winsauer, 2016). It is thus critical to figure out the mechanism that searchers use to distinguish between good and bad ads.

While tutorials on how to set up PPC campaigns are rich, resources on how to design them to persuade searchers to click them are lacking. Part of the reason is there is no single solution that can be made to the diversity of industries and the variety of searchers. With more and more customization features available to advertisers, the complexity of building the campaign to yield ideal results increases as well. In the same time, different types of sponsored search ads emerge to cater to searchers’ needs in various situations. A holistic examination of ads features and a unified framework to understand why searchers click on PPC ads in different contexts is clearly needed in this billion dollar industry.
In this paper, we will explore the mechanism web searchers use when deciding to click on a PPC ad. Based on previous literature, it is believed that PPC ads features and user characteristics are two main factors that can influence the effectiveness of the ads. More specifically, this research answers the following question:

*Which aspects of ad features and user characteristics influence web searchers’ perceptions and click behaviors on PPC ads?*

To answer this question: section two of this paper reviews past literature; section three elaborates on the theoretical foundations of the study; section four outlines the research model and derives the hypotheses to be tested; section five describes methods and preliminary results; section six makes conclusions.

**Literature Review**

Very few academic studies have been devoted to this topic (Nicholson et al. 2006), even though PPC ads attract the majority of online marketing investments, as well as acknowledgement by business professionals of the importance of PPC ads. Jafarzadeh et al. (2015) did a systematic review on search engine advertising. Of the 101 papers published in 72 journals since 1998, 51 papers use a behavioral approach and only 18 papers focus on the web searchers’ behavior and practice. Further, only 5 have employed known theories as the foundation for their research. Even fewer papers have used experiment, interview and survey questionnaire approaches. A strong theoretical framework and solid research methods are clearly lacking in studies of web searchers’ attitudes and behaviors on paid search ads.

Perceptions and attitudes of web users toward the PPC ads was investigated before (Lin and Hung 2009). Four advertising characteristics were identified as antecedent variables, which will influence users’ perceptions of ads’ value and eventually their attitudes toward PPC ads. These characteristics are informativeness, entertainment, irritation and credibility. User characteristics were not included in their research model but rather used as a base for cluster analysis. Four models were reported based on each cluster (type of users). Lu et al. (2017) made a further step to improve this model. They incorporated both ad factors and user factors into the model. Moreover, they identify trust as a mediating mechanism while attitude and click behaviors are outcomes.

As a more complete picture was revealed, details of ad features were missing in this model. The features of PPC ads should be the center of the model to achieve best practicality for marketers. Built upon previous endeavors to reveal the mechanism of searchers’ reactions to PPC ads, we propose a unified model in this paper. In our model, both ad features and user characteristics are included as antecedents. Detailed aspects of each factor will be investigated as well. Parsimony and practicality can thus be achieved at the same time in this model. Furthermore, Prominence-Interpretation Theory (Fogg 2003) is used as the framework for building this model. Heuristic-systematic model (Chaiken 1987) is also introduced to understand the dual process mediating mechanism of web searchers.

**Theoretical Foundations**

*Prominence-Interpretation Theory*

The central premise of Prominence-Interpretation Theory (PIT) is straightforward: the impact of a cue meant to enhance (or potentially detract from) credibility is driven by the cue’s prominence and interpretation. Prominence is the likelihood that the cue will be noticed by a user. Prominence does not concern any evaluation of the cue, but rather focuses on how conspicuous the cue is and its potential to be considered during attribution of credibility. Past research has shown that cue position on a webpage, user involvement, topic of the website, and individual user differences all influence the prominence of cues (McKnight et al. 2004). Interpretation is the valenced evaluation of the cue by the user. In other words, it is the meaning that individuals assign to a cue that, in turn, impacts their credibility attributions. For example, consumers may interpret cues such as incompleteness or obvious errors in a website’s content as indications that the authors are ill-informed or careless and would likely attribute lower credibility as a result (Everard and Galletta 2006).
Heuristic-systematic model

The heuristic-systematic model (HSM) explains how people receive and process persuasive messages. HSM states that individuals can process messages in one of two ways: heuristically or systematically. Systematic processing entails a relatively analytic and comprehensive treatment of judgment-relevant information. Judgments formed on the basis of systematic processing are thus responsive to the actual content of the information. Given its nature, systematic processing requires both cognitive ability and capacity. Hence, it's less likely to be taken when people have little knowledge or time constraints.

Heuristic processing, on the other hand, entails the activation and application of judgmental rules or "heuristics" that are presumed to be learned and stored in memory (e.g., ads listed in higher positions are better results). Judgments formed based on heuristic processing reflect easily processed judgment-relevant cues (e.g., position of ads; star rating of ads). Relative to systematic processing, heuristic processing requires minimal cognitive demands.

Research Model and Hypotheses Development

Combining the PIT and HSM, we propose conveniency as one mediating construct when searchers react to PPC ads. This process is heuristic where searchers focus on the prominence of ads. In other words, prominence of ads can influence one’s perception of conveniency of PPC ads. This conveniency perception will eventually moderate the relationship between one’s attitude on PPC ads and their click behaviors.

On the other hand, we propose attitude as the mediating construct of another route: the systematic way of processing ads. Searchers interpret ads based on features and their own personal characteristics to form their own attitudes. Their attitude can lead directly to click behaviors.

Ad features refer to factors related to the characteristics of PPC ads that can be manipulated by advertisers or search engine companies. We include five aspects of ad features: position, informativeness, entertainment, irritation and transparency. A PPC ad can be easily seen when it’s placed on the top of a search result page, therefore the position of ads should be the greatest contributor of conveniency. The remaining four features (informativeness, entertainment, irritation and transparency) are related to interpretation of ads so they should influence users’ attitudes.

User characteristics are a second factor we include in our model. This refers to a user’s personal features or propensities. We propose four aspects of user characteristics: self-efficacy, ad knowledge level, past satisfaction and ad avoidance. When a searcher is not confident in his or her search skills, he or she will rely more on the result ranking provided by search engines. In other words, he or she will be more likely make convenient clicks on search result pages. Therefore, self-efficacy influences one’s perception of conveniency. The remaining three aspects (ad knowledge level, past satisfaction and ad avoidance) are related with one’s previously formed attitude towards PPC ads.

Users’ attitudes toward PPC ads will be directly related with their final click behaviors. However, if they perceive PPC ads as convenient options, their attitudes may not be strong predictors of click behaviors. In other words, users may make convenient clicks in situations such as limited decision time or complicated task despite that their attitudes toward PPC ads may be negative.

Accordingly, we raise the following hypotheses:

\( H_{1a}: \) Ad position will be positively related with a user’s perception of conveniency to click on a PPC ad.
\( H_{1b}: \) Ad informativeness will be positively related with user attitude toward PPC ads.
\( H_{1c}: \) Ad entertainment will be positively related with user attitude toward PPC ads.
\( H_{1d}: \) Ad irritation will be negatively related with user attitude toward PPC ads.
\( H_{1e}: \) Ad transparency will be positively related with user attitude toward PPC ads.

\( H_{2a}: \) Self-efficacy will be positively related with a user’s perception of conveniency to click on a PPC ad.
\( H_{2b}: \) Ad knowledge level will be positively related with user attitude toward PPC ads.
\( H_{2c}: \) Past satisfaction will be positively related with user attitude toward PPC ads.
H2d: Ad avoidance will be negatively related with user attitude toward PPC ads.
H3: User attitude will have a positive relationship with click behavior on PPC ads.
H4: Conveniency will weaken the relationship between user attitude and click behaviors.

![Figure 1. Research Model](image)

**Methodology and Preliminary Data Analysis**

To validate the aforementioned hypothesized relationships (hypothesis 1-2), we employ a survey approach to gather data from online searchers. The measures in this study are adapted from previous research (Lin and Hung 2009, Lu et al. 2017, Gauzente 2009). Questions on ad features, user characteristics, conveniency perception and user attitude are based on a five-point Likert-type scale. We also include control variables such as online search experience and online shopping experience as well as two attention questions to make sure their answers are valid. The preliminary analysis included 21 data points in total.

For preliminary analysis, we use seemingly unrelated regression (SUR) for model testing. SUR employs feasible generalized least squares techniques and can estimate the coefficients of multiple linear equations simultaneously and efficiently while accounting for correlated errors (Wooldridge 2001). We put four models into regression analysis. In model 1, we regress Y1(conveniency) with ad features X1(informativeness, entertainment, irritation, transparency, position). In model 2, we regress Y1(conveniency) with user characteristics X2(ad knowledge, self-efficacy, past satisfaction, ad avoidance). In model 3, we regress Y2( attitude) with ad features X1. In model 4, we regress Y2(attitude) with user characteristics X2.

We can already see some significant relationships in regression with the limited data size. In terms of ad features, position is a strong predictor of people's perception of conveniency (t=2.5, p<0.05). This validates our hypothesis 1. Interestingly, we found ad avoidance also a significant predictor of conveniency perception (t=-2.2, p<0.05). The more avoidant one is toward sponsored ads, the less conveniency one perceives on those ads. Ad knowledge is close to significant (t=2.0, p=0.065). The more knowledge one has on PPC ads, the more conveniency he thinks those ads bring.
Another surprising finding is that ad position is a significant predictor of one’s attitude on PPC ads \( (t=2.8, \ p<0.05) \). The more one clicks on an ad because of the prominent position they hold, the more positive attitude one has towards the ads. Ad avoidance is also a strong predictor of one’s attitude \( (t=-2.8, \ p<0.05) \), as stated in Hypothesis 9. Overall, position and ad avoidance are the two most important constructs that are related with one’s perception of conveniency and attitude. This tells us that if one notices PPC ads appearing in preferred positions in search results, he or she will be more likely to develop conveniency perceptions as well as positive attitude toward sponsored ads. However, if one is avoidant toward any ads, he or she will not perceive the ads as convenient and will also develop negative attitude towards the ads.

**Conclusion**

This paper investigates the mechanism web searchers use when deciding to click on PPC ads. We propose conveniency and attitude as two mediators of click behaviors. Different aspects of ad features and user characteristics are tested as antecedents of conveniency and attitude. Based on our preliminary analysis of online surveys, we found two strong predictors, position as the most important ad feature and ad avoidance as the most important user characteristic, that influence a user’s conveniency perception and attitude.

**REFERENCES**


