Do Web Site Visitors Vary in Their Search and Surf Behavior?

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INTRODUCTION

In numerous ways, the Internet has become part of everyday life. One of its virtues has been the availability of data on the behavior of Web site visitors. This so-called clickstream data has greatly contributed to marketing research, especially to the study of surfing behavior, advertising activities, and shopping behavior (Bucklin & Sismeiro, 2009). Existing studies are further distinguished by their datasets. Site-centric datasets are based on a single Web site (Montgomery et al., 2004; Sismeiro & Bucklin, 2004; Danaher et al., 2006; Olbrich & Holsing, 2011). User-centric datasets are based on a surfer panel (Johnson et al. 2004; Huang et al., 2009). The present study uses site-centric data from a promotional Web site of a service company that provides detailed information on the services offered. Even though we employ site-centric data and concentrate on the usage of a single Web site, the research objective addresses a cross-site question: Do Web site visitors vary in their search and surf behavior according to the origin of the visit? In this paper, search and surf behavior explicitly refers to two aspects of the browsing behavior of potential customers. The search aspect embraces the intention of prospects to seek out specific information and the surf aspect refers to the willingness to actively look for this information.

Specifically, the present study distinguishes visits from search engines, search engine advertising, and non-search-engine-related visits. Thus, the study primarily extends the research area of surf behavior, but also addresses advertising activities by considering search engine advertising. The results reflect surf and search behavior prior to signing a service contract and thus contribute to knowledge on the information phase of customer shopping processes.

In this way, the paper adds to the theory of information search and on individual search processes (for an overview, see Wilson, 1999). The empirical results confirm that the search and surf behavior of Web site visitors differs, depending on whether these visitors used either search engines, search engine advertising, or non-search-engine-related activities to reach the Web site. These differences in search and surf behavior, and thus in information needs, not only have theoretical, but also managerial implications.

The next section reviews the existing literature on search and surf behavior. The research question is then presented and the associated hypotheses derived. Afterwards, a brief introduction to the service company setting is provided, followed by a description of the dataset and presentation of the empirical results. The results and implications of the study are then discussed. The paper concludes with the limitations of the study and areas for future research.

RELATED LITERATURE

Research on search behavior has focused on the use of search engines and surf activities on a specific Web site. The present study addresses a cross-site question and provides insights into the information

search and the search process. As the focus of the present study is on the behavior of Web site visitors, a brief overview of search engine usage is presented below.

Search engines usually display two sets of search results: so-called organic results and search engine advertisements. Organic results are the outcome of the index retrieval and relevance ranking applied by a search engine. For search engine advertisements, advertisers bid a value that they are willing to pay for each click on their advertisement. These advertisements are then positioned according to an automated generalized second-price auction (Edelman et al., 2007; Varian, 2007). Besides the bid amount, the auctioning mechanism may also incorporate additional quality criteria (Aggarwal et al., 2008; Gonen & Vassilvitskii, 2008).

With respect to search engine usage, the results of eye-tracking and click-pattern studies indicate a preference for organic search results rather than sponsored results (Joachims et al., 2007; Danescu-Niculescu-Mizil et al., 2010; Jerath et al., 2014). However, searchers do not value the linked sites of organic and sponsored results differently (Jansen et al., 2007). In general, search queries consist of only a few search terms and do not incorporate any search operators. Furthermore, searchers generally only consider the first page of the search results and search queries are mostly reformulated, rather than amended or shortened in order to find more relevant results (Jansen & Spink, 2006; Lewandowski 2006; Jansen et al., 2007). Classifications of search queries suggest that the search intent is about 65% informational, 15% navigational, and 20% transactional (Broder 2002; Nettleton et al., 2006; Jansen et al., 2008). As part of online search strategy, search engines have also been analyzed as tools that help customers search for lower prices (Sen et al., 2006). Search-term volume has been used to forecast new product sales (Kulkarni et al., 2012). Related to such studies is the finding that search engine advertising leads to indirect effects, such as more visits in the future (Rutz et al., 2011). This study however, addresses the question of whether information search behavior varies fundamentally for different groups of first-time visitors.

Log file or clickstream data is generally used to study individual surf activities. Such data sources have been analyzed to predict conversion probability (Moe & Fader, 2004a, 2004b; Montgomery et al., 2004; Sismeiro & Bucklin, 2004), to identify types of surfing behavior (Moe 2003), and to investigate the influence of decision-making processes (Senecal et al., 2005) and of shopping features (Olbrich & Holsing, 2011; Holsing & Schultz, 2013) on purchase decisions. Research confirms the existence of wearout effects of banner ads measured by click through during a single visit and for repeated visits by an individual (Chatterjee et al., 2003). The heterogeneity of visit duration and visit depth can generally be ascribed to situational context, rather than to personal or Web site specifics (Danaher et al., 2006). However, the study did not consider potential differences due to the origin of visits. Empirical results also show that browsing behavior changes dynamically, as a function of visit depth and the number of repeated visits (Bucklin & Sismeiro, 2003; Moe & Fader 2004b). Visit depth is a central metric in the present study. This study also controls for repeat visits by drawing on data of a Web site that primarily seeks to convert visitors into customers. Thus, all visitors are comparatively new to this Web site.

Differences in search behavior for search and experience goods are examined by Huang et al., (2009). Search goods are products with features and characteristics easily evaluated before purchase. Experience goods have product characteristics which are difficult to identify in advance, but can be ascertained after purchase or upon consumption. Experience goods, as referred to in this study, are found to entail longer visit times per page and lower visit depth (number of pages) than search goods. An informational Web site for experience goods was chosen to identify behavioral differences more accurately. Ortiz-Cordova and Jansen (2012) identified six clusters of search engine visitors, based on referral keywords and on-site behavior. 83.3% of Web site visitors are characterized as pure information seekers. This study extends

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