Impact of Information Technology on Information Search Channel Selection for Consumers

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ABSTRACT

As information technology has evolved, digital media has become increasingly fragmented and has started to proliferate multiple information channels. In order to optimize on the various digital channels that are available, organizations are increasingly recognizing the importance of gaining solid insights into consumer behavior and preferences that can be translated into marketing strategies. Specifically, they are keen to identify which information channels they can use to effectively reach and communicate with their target market. In this regard, this paper describes how multi-criteria decision making can be used to develop a new method of decision making that will enable an effective and systematic decision process of fuzzy AHP and TOPSIS. Further, these techniques can be used for the developing framework for identifying consumer preferences. This paper provides a demonstration of the underpinning working methodology of the proposed model by examining an real case that is based on the decision process Internet users employ during their online search for information.

KEYWORDS

AHP, Consumer Preferences, Information Management, Information Search Channels, Internet Marketing, TOPSIS

1. INTRODUCTION

Consumer decision-making approaches can be understood as a series of five progressive stages: need recognition, pre-purchase, evaluation of alternatives, purchase and post-purchase (Grewal & Levy, 2013). The Internet provides an important real-time communication channel that serves to connect marketers with potential customers who are searching online for information pertaining to a particular product or service (Jarvis & McElroy, 2004; Kelley & Jugenheimer, 2008; Saunders, 2004; Soberman, 2005; Winchester & Lees, 2016). A pre-purchase information search model can be used to describe the process by which individuals search for information from two broad categories: a) internal information search/long-term memory and b) external information search (Crotts, 1999). When adopting this approach, individuals typically commence their search by attempting to recall information from their long-term memory (internal search) and will subsequently use an external approach if he/she fails to gather the information needed at the initial stage. External information search channels from an e-commerce users’ perspective can be categorized as follows: a) personal (advice from friends or relatives using social media channels) (A1); b) marketer-dominated (brochure on emails, online advertisements, or media) (A2); c) neutral (discussion forums, information blogs

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intended for public viewing) (A3); and d) experiential sources (online demo of products through review websites) (A4) (Crotts, 1999; Luo & Bu, 2016).

These channels are defined in the context of the assumption that an Internet user who is completing an online search for information pertaining to a product or service will progress to make a purchase after the information search phase is complete. The four channels outlined above have been evaluated based on the following criteria (Moon, 2004; Stigler, 1961): (1) Quantity of information (C1), (2) design (C2), (3) speed of access and transmission (C3), (4) the extent to which the search structure is user friendly (C4), (5) pace of update (C5), (6) perceived time (C6), (7) cost of search (C7).

These criteria can have a direct impact on the process by which consumers search for pre-purchase information on the Internet before moving ahead to the next stage of evaluating the alternative products/services that are available. Although existing studies have examined the relative importance of each channel individually (Khatwani et al., 2015), existing research has yet to establish how channels work in different tier of cities to influence the pre-purchase information search stage. This study aims to explore user preferences for the amalgamation of Internet information search channels for a variety of different demographic factors. Since technology is changing very fast and people are transitioning between technologies so it is important to identify the impact of channel preferences for different cities mapped (Russell, 2016).

A large amount of literature pertaining to consumer purchase processes argues that the decision making process that consumers employ can vary across demographics. For example, (Larichev & Moshkovich, 1995; Renatus & Geldermann, 2016) argued that males prefer to simplify the purchase process by consulting a limited number of information sources, whereas females prefer to use more extensive sources. To the best of available literature (Grewal & Levy, 2013; Winchester & Lees, 2016), the role that demographic factors can play in influencing how users interact with different information search channels remains relatively less studied. As such, this study aims to examine the moderating roles of demographic parameters, such as different tier of cities, to determine the extent to which they influence a user’s preferred Internet information search channel. Further, such study will help in narrowing gap of technology on consumer channel preferences for the different category of cities. Moreover, this can help in developing highly target advertisements for the location specific services and content marketing.

The information search channel is multi-criteria problem and the task is to identify the preferences for consumers. Further, the information search channel selection problem have criteria C1 to C7 and alternatives A1 to A4. These characteristic are closely aligned to Multi Criteria Decision Making (MCDM) methods (Ravindran, 2016). Further, MCDM methods alone have disadvantage which have proved by previous research (Kumarakrishnan et al., 2016; Mulliner et al., 2016; Balin et al., 2016). Moreover, comparison analysis shows that based on the seven factors C1 to C7 as discussed above; the proposed hybrid fuzzy AHP-TOPSIS method provides more consistent results than fuzzy AHP and fuzzy TOPSIS methods used alone (Ravindran, 2016). Further, the sensitivity analysis of simple MCDM reveals that results are not stable as compared to hybrid approaches at threshold level of 25%. The MCDM methods have been used to develop a framework for information search channel selection and discuss the impact of technology. The framework is shown in Figure 1 for evaluating information search channel selection for different cities. Firstly, the study selects the criteria important for information search channel through secondary research. Secondly, the data are segregated to Tier I to V cities. Thirdly, the weights and preferences are calculated for each category of cities.

The research can also play big role in Internet of things (IOT) devices and platforms as it can help customer to get real time information through different channels. Further, techniques used in analysis were compared to other combination of techniques and it was observed that used technique had stable results.

The rest of the paper is organized as follows. In section 2 the authors discuss computational flow for selecting consumer preferences. Further, in section 3 the calculations are presented to understand the framework. Finally, analysis and conclusion are presented in section 4.
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