The more, the better? Why abundant information leads to unanticipated outcomes

Chia-Ying Li *

Department of Business Administration, National Taichung University of Science and Technology, Taichung, Taiwan

ARTICLE INFO

ABSTRACT

The effect of information load on a person's decision making remains ambiguous, especially in an online environment. By expanding the communication theory, this study developed four subdimensions of information load, namely information source, information characteristics, system interface, and information recipient loads, and explored their influences on consumer behavioral intention, including intention to explore the website and intention to buy. The findings indicate that the number of product attributes and the degree of information novelty exhibit an inverted U-shaped relationship with intention to explore, whereas the number of brand alternatives and degree of information novelty exhibit an inverted U-shaped relationship with intention to buy. The number of brand alternatives and information recipient load exhibit a positive relationship with intention to explore, whereas the number of product attributes and information recipient load are positively associated with intention to buy. The system interface load, information complexity, and information ambiguity exert a negative influence on intention to explore and intention to buy. The findings explain the inconsistent results of previous studies regarding the reason why too much information sometimes has adverse effects on consumers online shopping behavior.

1. Introduction

Most firms regard websites as a means to sell products to consumers. Unlike face-to-face transactions, websites enable conveying extensive and individually customized product information, such as similar products and pricing comparisons between various online retailers, which facilitates an enhanced decision-making process. Consumers benefit from acquiring global and highly unstructured information with relative ease or at low cost (Aljukhadar et al., 2012/2013). However, understanding excessive communications from multiple sources imposes new challenges on people (Misra and Stokols, 2012; Sasaki et al., 2015). When the amount of information overwhelm consumers' capacity for decision making, they may leave an online store (Parra and Ruiz, 2009; Zhuang et al., 2011). Therefore, greater access to information in online environments challenges online retailers who must decide how and what amount of messages should be delivered to consumers.

Previous studies have advocated traditional and structural approaches for measuring information load and overload. The traditional approach involves using the number of alternatives and attributes in a product assortment to represent the amount of information, whereas according to the structural approach, both the number and probability of outcomes are considered when a person assesses information (Jacoby, 1984; Jacoby et al., 1974; Malhotra, 1982, 1984; Schneider, 1987).

* Address: No. 129, Sec. 3, Sanmin Rd., North Dist., Taichung City 404, Taiwan.
    E-mail address: cyli@nutc.edu.tw

Although several studies have adopted various methods and constructs to measure consumer information load, such as Lurie (2004) and Lee and Lee (2004), most have focused on whether the number of brands and their attributes influence consumer product choice. In particular, Chen et al. (2009) and Misra and Stokols (2012) argued that numerous methods have been employed to operationalize information load; however, a unified measurement scale is yet to be developed. The inclusion of specific contexts provides a comprehensive view for the exploration of information load (Jackson and Farzaneh, 2012).

Because of the high potential of information overload in online environments, determining the multiple dimensions of information is critical (Aljukhadar et al., 2012/2013). The abundance of information in online shopping environments should be studied more extensively (Parra and Ruiz, 2009). Berlo (1960) proposed the Source, Message, Channel, and Receiver (SMCR) model. Websites are vehicles for displaying information about vendors and their products or services (Huang, 2000). Vendors selling products to consumers can be considered a communication process, because information provided by vendors to attract consumers is a form of information transfer from a source to a recipient (Sicilia and Ruiz, 2010). Following this logic, the current study assumes that information load refers to the amount of product information and is associated with the communication interface, personal factors, and online retailers. Therefore, this study involved four subdimensions of information load in online shopping environments including information characteristics (message), the information source, system interface (channel), and the consumers' motivation (receiver).

Several scholars have suggested that excessive information constitutes a negative phenomenon, such as stress and inefficiency (Brennan, 2011; Eppler and Mengis, 2004), whereas other scholars have described information load as a force behind the building of specialized knowledge and skills (Kock, 2000). Researchers from various fields, such as psychology, information system management, computer science, and marketing have identified the critical role of information load and interpreted its positive and negative consequences (Jackson and Farzaneh, 2012). However, the effect of information load on individual decision making remains ambiguous, especially in an online environment, because of the derivation in various fields (Chen et al., 2009). Addressing increased information load is crucial for online shopping websites (Krishen et al., 2011). Therefore, investigating the effect of information load on consumers behavior in online contexts warrants further research.

By applying Berlo's (1960) SMCR model, this study involved developing four subdimensions of information load, namely information source, information characteristics, system interface, and information recipient loads. This study explored influences of the four subdimensions of information load on consumer behavioral intention including intention to explore, and intention to buy. The results provide valuable information for academics and practitioners in determining suitable information for online shopping customers.

2. Qualitative research on information load in an online shopping context

According to the communication model, this study explored four subdimensions of information load, namely information source, information characteristics, information recipient, and system interface loads. To determine the factors or components for each subdimension, a comprehensive understanding of how online shoppers deal with an abundance of information is needed. In the pilot study, this study conducted a focus group discussion to obtain this knowledge. A snowball sampling procedure was used to ensure that participants were from a wide range of backgrounds (Babbie, 2004). 15 participants with various ages, occupations, education levels, and with more than 3 years of online shopping experiences, were invited. Among the respondents, 40% were male and 60% were female. Their ages ranged from 20 to 55 years. Regarding education, 82% of the respondents had graduated from university, and 36% reported having completed postgraduate studies. The respondents represented online consumers from various industry sectors, such as finance, computers, consulting, education, insurance, manufacturing, and health care.

The participants were guided by a structured set of open-ended questions on the attributes of information load, and asked to report on situations in which they were processing information on online shopping websites. The participants were intentionally not prompted regarding specific factors that enhance information load, but rather asked to provide their opinions on questions such as "Why does a consumer who intends to shop using an online website suddenly decide to quit?" "Do you have any concerns regarding the amount of information posted on a website?" and "What types of interruption do you encounter when shopping online?" The discussions were transcribed, resulting in a 24,102-word document that served as the basis for content analysis. Following the methodological guidelines of Ryan and Bernard (2000), this study derived a preliminary set of themes, relating to the subdimensions of information load, on the basis of SMCR model described above. Additional themes and sub-themes were induced from the focus group transcripts. Two experienced and skilled coders were recruited, and a total of 237 keywords were assigned to the same categories by both coders.

Through a focus group discussion with online shoppers, this study conceptualized the factors for each subdimension. Information source load includes the number of brand alternatives and product attributes provided by online vendors. Information characteristic load refers to complex, novel, and ambiguous information posted on online shopping websites. System interface load includes complex procedures, soft upgrading requests, noise (such as excessive advertisement), security concerns, and speed of access. Information recipient load is defined as an internal force that directs consumers' behavior toward buying a particular product. After conceptualizing four subdimensions of information load in online shopping environments, the study proceeded with the task of formulating the research hypotheses.