Research Note

The role of online product recommendations on customer decision making and loyalty in social shopping communities

Hong Zhang[a], Ling Zhao[b,*], Sumeet Gupta[c]

[a] School of Management, Wuhan University of Science and Technology, Wuhan, 430081, PR China
[b] School of Management, Huazhong University of Science and Technology, Wuhan 430074, PR China
[c] Indian Institute of Management, Raipur 492051, India

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ABSTRACT

Online product recommendation (OPR) provided by product recommender systems as well as consumers is a crucial service in social shopping communities (SSCs) for improving consumers' shopping experience and fostering long-term relationships. However, little is understood about how these two sources of recommendations influence consumers' decision-making and their implications for customer loyalty. This study develops a model to examine how the positive (enablers) and negative (inhibitors) factors of OPR's quality influence consumer decision process, and how the decision process ultimately influences customer loyalty. The results indicate that consumer product screening cost and decision-making quality significantly influence customer loyalty. Consumer product screening cost is negatively associated with self reference and positively associated with deceptiveness and information overload. Product evaluation cost is positively affected by self reference, deceptiveness and information overload and negatively affected by vividness. And consumer decision-making quality is positively associated with self reference and negatively associated with deceptiveness and information overload. Consumer product screening cost and product evaluation cost are comparatively more negatively influenced by inhibitors than enablers. Moreover, UGC level plays a negative moderating role on the relationships between product screening cost and customer loyalty, and between product evaluation cost and customer loyalty.

1. Introduction

The increased usage of social media has led to the emergence of social shopping community (SSC) − an online shopping website that provides a platform for consumers to connect with each other and discover, share, recommend, rate, and purchase products (Olbrich & Holsing, 2011). Examples include Mogujie.com, Meilishuo.com, Xiaohongshu.com, Kaboodle.com and Polyvore.com. A SSC carries content curated by the website as well as a substantial amount of user-generated content (UGC). Thus, it acts like a value creation network, where both the website and its consumers co-create the overall service experience (Zwass, 2010). Because of the importance of social shopping in shaping future e-commerce opportunities, researchers and practitioners are paying increased attention to the commercial impact of SSCs (Hu, Huang, Zhong, Davison, & Zhao, 2016). Recent research in this area has examined the crucial role of innovative technologies for SSCs that support product recommendations and social interactions (Hu et al., 2016; Zhang, Lu, Gao, & Chen, 2014).

One of the most important services offered by SSCs to boost product

sales is that of providing real-time personalized recommendations from both the SSC as well as its consumers. Recommendations from a SSC are generated by the system based on the past purchase behavior of the consumers as well as on the stated or implied preferences of other like-minded consumers (Benlian, Titah, & Hess, 2012). On the other hand, recommendations from consumers are generated by consumers based on their personal experience with the product (Jabr & Zheng, 2014). In this study, these two types of recommendations are labeled together as online product recommendations (OPRs). OPRs facilitate customers in their search for products and services based on their personal preferences, and thus reduce their search and processing costs as well as increase their chances of making an optimal purchase decision (Markopoulos & Clemons, 2013; Park & Lee, 2008; Wang & Benbasat,2013). Although the significant impact of product recommendations on outcomes for consumers and firms has been acknowledged in the recent information systems (IS) studies (Li & Karahanna, 2015), only a few have examined their impact on consumers' decision-making and behavior (Benlian et al., 2012; Ho & Bodoff, 2014; Thirumalai & Sinha, 2013). Social shopping is a sparsely researched area and little is known about how such OPRs contribute to effective

commercial outcomes, such as customer loyalty towards SSCs (Bai, Yao, & Dou, 2015). Such lack of understanding about how to build a strong and enduring customer relationship threatens the sustainability of an underlying business model (Ou, Pavlou, & Davison, 2014), as in the case of a SSC. The objective of this study is therefore to examine the role of OPRs in consumer decision-making and its subsequent influence on consumers' community loyalty. Specifically, three major research questions are investigated in this study:

(1) *The major design characteristics that reflect the quality of OPRs.* The utility enabled by properly designed OPRs is recognized as a key success factor for a SSC in a mature e-commerce environment (Xu, Benbasat, & Cenfetelli, 2014). Although the importance of recommendation quality has been emphasized by both practitioners and scholars, the design characteristics that reflect the quality of OPRs are still not well understood (Li & Karahanna, 2015; Nilashi, Jannach, Ibrahim, Esfahani, & Ahmadi 2016). Based on the dual-factor theory (Cenfetelli & Schwarz, 2011), the study considers both positive (enablers) and negative (inhibitors) aspects of the quality of OPRs for three reasons. First, there is a trade-off between positively and negatively oriented factors of the quality of OPRs, such as that between information richness and information overload. Second, a technology is evaluated based on the diverse combinations of both positive and negative attributes (Lewicki, McAllister & Bies, 1998; McKnight, Kacmar, & Choudhury, 2004). Finally, the asymmetry between negative and positive attributes of OPRs may lead them to have distinct effects on consumer decision process (Cenfetelli and Schwarz, 2011). Accordingly, the first research question is: *How do the enablers and inhibitors influence a consumers online decision process?*

(2) *The mechanism of how the quality of OPRs influences consumer loyalty in SSCs.* Given the significant impact of OPRs for consumers in the decision process (Tam & Ho, 2005; Xiao & Benbasat,2007), the present study focuses on the utilitarian value of OPRs (i.e., the online purchase efficiency) that consumers obtain from SSCs, which is a combination of the perceived decision costs and benefits. The study adapts and extends Zhang, Agarwal, and Lucas's (2011) model to embed both enablers and inhibitors influencing the quality of OPRs in a nomological framework to understand how the quality of OPRs manifested as enablers and inhibitors affects consumer loyalty via the online purchase efficiency. Accordingly, our research question is: *From the perspective of the utilitarian value of OPRs, what is the mechanism by which OPRs influence customer loyalty in SSCs?*

(3) *The moderating effects of UGC level on the relationships between the utilitarian value of OPRs and customer loyalty.* Since a SSC highlights not only the efficiency of online shopping process, but also socializing among consumers (Hu et al., 2016), a substantial amount of UGC thus constitutes its crucial element. The level of UGC in a SSC usually refers to the extent to which consumers contribute shopping-related content (i.e., opinions, experiences, advice or recommendations in the form of text, videos or podcasts) (Schumann, von Wangenheim, & Groene, 2014). From the value creation perspective, however, it can also be understood as the extent to which consumers co-create value that they and other consumers can derive form the community (Zwass, 2010). Thus, the UGC level represents the perceived sociability and the degree of value co-creation among consumers encouraged by the community. SSCs vary substantially in the extent to which they engage consumers in the value co-creation network, namely the UGC level. Given the possible moderating effect of website characteristics on the relationship between consumers experience value and behavior (Zhang, Lu, Gupta, & Zhao, 2014) and the salience of UGC level as a crucial community characteristics, it is interesting to understand the moderating role of UGC level in influencing the effect of utilitarian value of recommendations on consumer loyalty in a SSC.

Accordingly, our research question is: *How does UGC level moderate the influence of utilitarian value of OPRs on customer loyalty?*

The rest of the paper is organized as follows. In the next section, we discuss the theoretical background, and in the third section we present our research model and hypotheses. The process of the empirical study is described in the fourth section. The results of data analysis are presented in the fifth section. Finally, we discuss the results as well as summarize the theoretical and practical implications, and limitations and future research.

2. Theoretical background

2.1. The theoretical framework

This study primarily draws upon the work of Ratchford (2001) and Zhang et al. (2011). Ratchford (2001) integrated the human capital model with the household production model (from consumer economics) and generated unique insights into the role of knowledge in explaining consumers' store loyalty. He viewed online shopping as a household production process which requires significant investment of human capital, i.e., purchase-related knowledge in completing an online shopping task. His study revealed that consumers seek to maximize the efficiency of their production process and exhibit loyalty to that specific online store which facilitates their purchase process efficiently. In other words, the efficiency of the online shopping process determines consumers' store loyalty.

Zhang et al. (2011) developed and empirically validated a model to examine the mechanism by which personalized product recommendations affect consumer store loyalty. According to their model, personalized product recommendations influence online store loyalty through consumer online product brokering efficiency, which consists of three central constructs, namely, product screening cost, product evaluation cost, and decision-making quality. Product brokering is one of the stages of a consumer's purchase decision process, in which he/she engages in product screening and evaluating before making the purchase (Zhang et al., 2011). Product screening cost and product evaluation cost reflect a consumer's perceived product brokering costs. Decision-making quality represents the perceived benefits that consumers obtain during the product brokering process. These three constructs of online product brokering efficiency also align with the two central components of the effort-accuracy framework, namely, perceived decision effort and perceived decision quality (accuracy) (Payne, Bettman, & Johnson, 1993). Online product brokering efficiency captures the utilitarian value of OPRs for consumers, that is, the beneficial impact on reducing the cognitive efforts spent by consumers and increasing their decision quality (Xu et al., 2014). Zhang et al.'s (2011) framework, whereby online product brokering efficiency mediates the influence of technology-enabled product recommendations on consumer loyalty, forms the underlying framework for this study.

2.2. The quality of OPRs

Previous IS research classifies various environmental cues in social media into task-relevant (TR) cues and affection-relevant (AR) cues (Zhang, Lu, Wang, & Wu, 2015; Zhang 2013). TR cues, manifested as information fit-to-task, reflect a consumer's perception of the extent to which the presented information is accurate and appropriate for directly supporting the fulfillment of the consumer's purchase task (Parboteeah, Valacich, & Wells, 2009). AR cues, manifested as presentation formats of information, represent a consumer's perception of the extent to which the visual presentations in social media induce a consumer's positive affection (Zhang, 2013). Xiao & Benbasat (2007), in their conceptualization of the important aspects of recommendation agents, found accuracy of content and the presentation format of product recommendations as important positive design characteristics,