



## Customization of the online purchase process in electronic retailing and customer satisfaction: An online field study

Sriram Thirumalai <sup>a,\*</sup>, Kingshuk K. Sinha <sup>b,1</sup>

<sup>a</sup> Operations and Information Systems, David Eccles School of Business, 1645 E., Campus Center Dr., University of Utah, Salt Lake City 84112, United States

<sup>b</sup> Operations and Management Science, Carlson School of Management, University of Minnesota, Minneapolis 55455, United States

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### ABSTRACT

This paper investigates the customization of the online purchase process in electronic retailing. We conceptualize customization relevant to the two constituent sub-processes in the online purchase process: (i) decision customization—the customization of the information content delivered to customers to help them in the decision-making sub-process; and (ii) transaction customization—the customization of the purchase transaction sub-process for each customer. We draw on and synthesize the theoretical perspectives of Website Usability, Technology Acceptance Model, and Transaction Costs, to triangulate and deduce hypotheses linking customization of the online purchase process in electronic retailing and customer satisfaction. The hypotheses are tested by analyzing: (i) primary data on customization of the online purchase process collected from an online field study involving a direct observation and content analysis of the websites of 422 retailers; and (ii) secondary data on customer satisfaction with the online purchase process for the same set of 422 electronic retailers collected from a publicly available data source. The research method used for the empirical analysis is Multivariate Analyses of Covariance (MANCOVA). The results indicate that decision customization that provides choice assistance by way of personalized product recommendations is positively associated with customer satisfaction with the decision-making sub-process; and transaction customization, oriented towards making the transaction sub-process personal, convenient, and interactive is positively associated with customer satisfaction with the purchase transaction sub-process. Additionally, the results indicate that both decision customization and transaction customization are associated with overall customer satisfaction with the online purchase process of electronic retailers. The contributions, managerial implications, and limitations of the study, and directions for future research are discussed.

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### 1. Introduction

Electronic retailing, which includes online interactions between a retailer and a customer from the point the customer arrives at the retailer's website to the point the retailer fulfills the customer's order, has quickly emerged to become an important class of service operations (Field et al., 2004; Smith et al., 2007). Sales volume in electronic retailing is growing steadily—e.g., in the third quarter of 2009, electronic retailing sales in the U.S. totaled approximately \$34 billion, a 4.5(±1.2)% increase from the previous quarter. Retailers participating in this service sector, i.e., electronic retailers, offer service-products that include not only a product (e.g., a book), but also the process that facilitates the purchase of the product

online (Heim and Sinha, 2001a). And customers' perceived quality of an electronic retailer's service product is reflective of not only the product quality, but also the quality of the online purchase process—i.e., e-service quality, defined as the extent to which a retailer facilitates efficient and effective shopping, purchase, and delivery of products (Zeithaml, 2000). The quality of the online purchase process has been found to affect customers' purchase decisions, satisfaction, and loyalty in electronic retailing (Zeithaml et al., 2002; Wolfenbarger and Gilly, 2003). Hence, to be competitive, electronic retailers need to not only offer a superior product, but also provide "a better purchasing experience, greater consumer control, and better personalization options" (Iqbal et al., 2003, p. 51), and ensure that the online purchase process is responsive and convenient for customers.

Toward this end, electronic retailers are increasingly pursuing customization enabled by personalization technologies, which makes it possible to tailor the online purchase process to the individual needs of a customer. From the standpoint of retailers, the premise of such customization is that by being able to sense and

\* Corresponding author. Tel.: +1 801 585 3940; fax: +1 801 581 7731.

E-mail addresses: [sriram.thirumalai@business.utah.edu](mailto:sriram.thirumalai@business.utah.edu) (S. Thirumalai), [ksinha@umn.edu](mailto:ksinha@umn.edu) (K.K. Sinha).

<sup>1</sup> Tel.: +1 612 624 7058; fax: +1 612 624 8804.

respond to the unique needs and wants of individual customers, i.e., by providing the “right content in the right format to the right person at the right time” (Tam and Ho, 2005, p. 271), retailers can facilitate a convenient and responsive online purchase process, serve their customers better, improve customer satisfaction and increase retention (Burke, 2002; Komiak and Benbasat, 2006). Personalization technologies allow retailers to provide customized features online, ranging from a simple display of customers’ name on the website to complex catalog navigation and tailoring of the purchase process, based on a deep understanding of customer needs and behavior (Kramer et al., 2000). For example, upon arrival at the Amazon.com website, a registered customer is greeted by the customer’s name. The customer is then provided with recommendations of products that the customer might be interested in, based on the product searched for or those previously bought by the customer. The website provides the option of receiving reminders of special events like birthdays of loved ones or information about the arrival of the latest books by their preferred author. When the customer is ready to make the purchase, the website retrieves the personal account information (e.g., shipping and payment). The purchase information is then automatically stored in the personal account of the customer so that the customer may come back to the website, review past purchases and track orders in shipment.

Our review of the relevant academic literature, however, did not yield adequate theoretical or empirical insights to help evaluate the performance implications of customization in electronic retailing. According to Tam and Ho (2005), it is far from being resolved whether or not customization of the online purchase process in electronic retailing is effective. While customization is identified as one of the items of factors in scales assessing customer evaluations of e-service quality (e.g., Wolfenbarger and Gilly, 2003), there is no consensus in the literature on the performance implications of customization (see Zeithaml et al., 2002 for a review of this literature). For example, on the one hand Lin and Wu (2002) suggest that customization is a critical dimension of e-service quality; on the other hand, Chen and Hitt (2002) find that it has no effect on the switching costs in the online brokerage industry.

Our review of the relevant practitioner literature also yielded studies that have addressed these questions, albeit with mixed findings. For instance, *Informationweek.com* (2002, p. 1) reports that: “Customers want the personal touch; personalization may be the next big thing in IT.” Supporting that argument, Gartner group suggests that a majority of firms on the web will use some type of personalization technology to anticipate the needs of online users. Arguing to the contrary, Nunes and Kambil (2001, p. 32) report: “Lots of companies are buying sophisticated (personalization) software to make personalized pitches to website customers. Problem is, customers don’t seem to care.” Thus, there is inconclusiveness in the purported performance benefits of customization. And, to that end, Zeithaml et al. (2002) have issued a call for research on customization and its impact on performance in the context of electronic retailing. While customization of the physical good has been a subject of considerable research in the extant literature, further research is needed to conceptualize and empirically evaluate customization in electronic retailing (Murthi and Sarkar, 2003; Chellappa and Sin, 2005; Kumar and Benbasat, 2006; Wattal et al., 2009). This study is a step towards addressing that need.

In this study, customization relevant to each of the two constituent sub-processes of an online purchase process is conceptualized. These are: (i) decision customization—customization of the information content delivered to customers to help them in the decision-making sub-process; and (ii) transaction customization—customization of the purchase transaction sub-process for each customer. We draw upon and synthesize three theoretical perspectives, namely, Website Usability, Technology Acceptance Model, and Transaction Costs, to triangulate insights

and deduce hypotheses linking decision and transaction customization to customer satisfaction with the online purchase process. Next, the hypotheses are empirically tested by analyzing: (i) primary data on decision and transaction customization collected through an online field study (Findlater et al., 2007; Edmondson and McManus, 2007) involving direct observation and content analysis of 422 websites of electronic retailers; and (ii) secondary data on customer satisfaction with the online purchase process for the same set of electronic retailers collected from a publicly available data source. Results of the empirical analysis using multivariate analysis of covariance (MANCOVA) reveals that decision customization, which provides choice assistance by way of personalized product recommendations, is positively associated with customer satisfaction with the decision-making sub-process; and transaction customization, oriented towards making the transaction sub-process personal, convenient and interactive, is positively associated with customer satisfaction with the purchase transaction sub-process, thus lending support to the proposed hypotheses. Further, the empirical analyses also indicate that decision customization and transaction customization are positively associated with customers’ overall satisfaction with the online purchase process in electronic retailing.

The contributions of this study are three-fold. First, it is among the very first to adopt a process view of the online purchase process and conceptualize the customization of the online purchase sub-processes – decision making and transaction sub-processes – in electronic retailing. Second, based on a triangulation of insights from multiple theoretical perspectives in the extant literature, the study hypothesizes process-level performance implications of customization in electronic retailing. Third, this study is the first to empirically test and find support for the hypothesized relationships between customization of the online purchase process and customer satisfaction with the online purchase process.

The contributions of this paper are significant in that they substantively complement and advance the extant literature on this topical area (e.g., Chellappa and Sin, 2005; Ho et al., 2005; Thirumalai and Sinha, 2005; Chellappa and Shivendu, 2006; Kumar and Benbasat, 2006; Thirumalai and Sinha, 2009; Wattal et al., 2009; Thirumalai and Sinha, 2010). Specifically, by focusing on the performance implications of customization in terms of customer satisfaction with the decision-making and transaction sub-processes, this paper complements: (i) Thirumalai and Sinha (2010), which focuses on the firm level technology self-selection and customization adoption decisions of electronic retailers and uses an econometric procedure for counterfactual analysis to provide an analytical framework to inform the customization adoption decision aimed at improving customer loyalty; (ii) Wattal et al. (2009), which proposes a game-theoretic model to assess the role of customization of the online purchase process, vis-a-vis investments in product quality in providing value to customers and improving the profitability of retailers; and (iii) Ho et al. (2005), which evaluates the impact of personalized content quality, feature overlapping among alternatives, and personalized message framing on information processing during an online purchase.

Next, this is among the very first studies to assess the effectiveness of customization in improving the online purchase process through the analysis of primary data on electronic retailing collected via an online field study that involved visiting websites of a large sample of electronic retailers and secondary data from publicly available sources. This is a significant contribution in that there is little systematic measurement and support in the literature regarding the process-level implications of customization in electronic retailing. Specifically, this study complements: (i) Thirumalai and Sinha (2009), which documents the findings from behavioral experiments using student subjects as to how customer purchase behavior and customer expectations associated with online pur-

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