



The role of physical distribution services as determinants of product returns in Internet retailing



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ABSTRACT

Pressure continues to build on Internet retailers to squeeze out inefficiencies from their day-to-day operations. One major source of such inefficiencies is product returns. Indeed, product returns in Internet retailing have been shown to be, on average, as high as 22% of sales. Yet, most retailers accept them as a necessary cost of doing business. This is not surprising since many retailers do not have a clear understanding of the causes of product returns. While it is known that return policies of retailers, along with product attributes, are two important factors related to product return incidents, little is known about which aspects of the online retail transaction make such a purchase more return-prone. In the current study, we seek to address this issue. We use a large data set of customer purchases and returns to identify how process attributes in physical distribution service (PDS) influence product returns. The first attribute involves perceptions of scarcity conditions in inventory availability among consumers when retailers reveal to consumers information on inventory levels for the products that they intend to buy. Our results show that orders in which items are sold when these conditions are revealed to shoppers have a higher likelihood of being returned than orders in which these conditions are not revealed. While prior research has argued that inventory scarcity perceptions have an effect on purchases, our findings suggest that they are also related to the likelihood of these purchases being returned. The second attribute involves the reliability in the delivery of orders to consumers. We find that the likelihood of orders being returned depends on the consistency between retailer promises of timeliness in the delivery of orders and the actual delivery performance of the orders. Moreover, we find that the effect that consistency in the delivery has in the likelihood of returns, is stronger for orders that involve promises for expedited delivery than for orders with less expeditious promises. That is, although the occurrence of returns depends on the delays in the delivery of orders to consumers relative to the initial promises made by the retailers, this effect is more notable for orders that involve promises of fast delivery.

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1. Introduction

While the Internet has improved customers' ability to search and find products best suited to their needs (Brynjolfsson and Smith, 2000), important limitations still exist that prevents shoppers from using the Web to efficiently fulfill their demands. Proof of this lies in the sizeable amount of product returns that retailers routinely receive from customers (Guide and van Wassenhove, 2009).

According to recent industry reports, average return rates for products purchased online have reached levels as high as 22% (Demery, 2010). In contrast, product return rates average a more reasonable 8.1–8.7% for traditional retailers, according to 2013 reports by the Retail Equation and the National Retail Federation.³ This difference in return rates indicates that there are elements in online retail transactions that make the merchandise highly susceptible to returns, relative to traditional retail transactions.

Despite such a clear preponderance of returns in online retail, there is limited extant research on this issue. It has been argued

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³ Please refer to: https://www.theretailequation.com/Retailers/images/public/pdfs/white_papers/wp_TRE4010.WhitePaper.OptimizingValueofReturns.Jan2013.pdf.

within the Operations Management (OM), Supply Chain Management (SCM), and Marketing literatures that there is a lack of theory-driven research on returns, as a whole (Mollenkopf et al., 2011), and in online retailing contexts, in particular (Griffis et al., 2012a; Petersen and Kumar, 2009). Even the limited research that exists on this subject has focused largely on policy issues like optimal return strategies for Internet retailers (Wood, 2001; Nasr-Bechwati and Siegal, 2005; Ofek et al., 2011) and on the management of returns once they occur (Mollenkopf et al., 2007; Griffis et al., 2012a). Some prior research has been carried out into the causes of returns, and it has shown that returns can occur due to specific product characteristics (e.g., Petersen and Kumar, 2009), particularly on the Web, where customers are limited in their ability to properly evaluate certain products (e.g., apparel) that require close inspection and evaluation prior to purchase (Peck and Childers, 2003). It has also been argued that it is difficult for customers to evaluate products that are newer or are more obscure and are, therefore, less available for inspection and comparison on and off the Web. As a result, such products are typically more return-prone (Rabinovich et al., 2011).

However, given that scholars have recognized that customer predispositions and behaviors (including returns) are shaped by a combination of market policies, product attributes, and process (encounter-related) attributes (Humphreys and Williams, 1996), it would be fair to argue that, along with return policies (e.g., Anderson et al., 2009; Mollenkopf et al., 2007; Wood, 2001) and product attributes outlined in prior research in Internet retailing (e.g., Rabinovich et al., 2011; Petersen and Kumar, 2009), there are several process attributes that may predispose certain sales transactions between Internet retailers and customers to be more return-prone than others. But, while market policies and product attributes have received some attention in the literature as discussed earlier, process attributes have remained relatively unexplored. These process attributes encompass the entire span of purchase transactions on the Internet – starting at pre-sales' buyer-seller interactions and ending at post-sales exchanges after customers have paid for their products (Humphreys and Williams, 1996; Marshall et al., 2003; Heim and Field, 2007).

In this paper, we focus particularly on process attributes for physical distribution services (PDS) to show that the disclosure of scarcity conditions in inventory availability to consumers prior to purchasing products and the post-sale delivery reliability of purchased goods are key predictors of product returns in Internet retailing transactions. Our results show that orders, in which shoppers are aware of scarcity conditions in inventory availability, have a higher likelihood of being returned than orders in which these conditions are not manifest. While prior research has argued that perceptions of inventory scarcity by consumers have a strong effect on purchases, our findings suggest that they have a substantial effect on the likelihood of these purchases being returned as well. We also find that the likelihood of orders being returned depends on the consistency between retailer promises of timeliness in the delivery of these orders and their actual delivery performance. Moreover, we find that the effect that consistency in the delivery has on the likelihood of returns is stronger for orders that involve promises of fast delivery than for orders with promises of less speedy delivery. Thus, although the occurrence of returns is likely to result from delays in the delivery of orders to consumers relative to the initial promises made by the retailers, this effect is more notable for orders that involve fast delivery promises. This extends prior studies that have focused on the existence of a relationship between quality in the delivery of orders to customers and perceptions of customer satisfaction to articulate and validate the effect caused on actual product returns by inconsistencies between retailer promises of timeliness in the delivery of Internet orders and actual delivery performance.

Identifying such process attributes' effects on the occurrence of product returns is an issue that deserves focused research for one central reason – if these attributes are found to be related to a higher return-likelihood of a purchased item, then this would give online retailers enhanced predictability with respect to product returns. Our focus on PDS attributes and their effects on product returns extends OM research in online retailing that has studied the role of order fulfillment and return operations and their implications for customer satisfaction, customer loyalty, purchase behavior, and firm profitability (e.g., Rabinovich and Bailey, 2004; Rabinovich et al., 2007, 2008; Boyer and Hult, 2005, 2006; Boyer et al., 2009; Thirumalai and Sinha, 2005; Griffis et al., 2012a). In doing so, our work at a more general level, also adds to research that has focused on studying relationships between OM and Marketing (e.g., Sawhney and Piper, 2002; Malhotra and Sharma, 2002; Hausman et al., 2002).

The remainder of this paper is organized as follows. The next section provides a review of the literature, an introduction to the theoretical background, and the hypotheses development. The research methods are then presented in Section 3, followed by the data analyses in Section 4. Finally, Section 5 presents a detailed discussion of the results, implications, and future research opportunities, while the Section 6 concludes.

2. Literature review and theoretical background

The study of product returns in the OM and SCM literatures spans the areas of product recovery and closed loop supply chains (Ketzenberg and Zuidwijk, 2009). In these areas, the activities and research insights fall into three categories (Guide and van Wassenhove, 2009). The first category deals with the front end of the supply chain and focuses on the customer's product return/return decision itself. The second consists of operational issues about remanufacturing, while the third is devoted to market development of remanufactured products. Although research has investigated operational issues regarding remanufacturing (e.g., Atasu et al., 2008; Souza et al., 2002; Ketzenberg et al., 2003) and market development of remanufactured products (e.g., Guide and Li, 2010; Vorasayan and Ryan, 2006), research on customer return decisions is scant. This is especially true in online retail contexts, where a substantial amount of research has focused on forward (i.e., getting the product to the consumer), rather than reverse supply chain management (Griffis et al., 2012a; Petersen and Kumar, 2009). Thus, the remainder of our literature review focuses on this direction.

As far as customer return decisions on or off the Internet are concerned, two key investigation-worthy issues jump to mind: *why* customers return products and *what* the value proposition of these returns is in the customers' minds. The latter question has been addressed, to a large extent, by authors who have examined how the value of the returns' proposition in the customers' eyes may benefit the customer and the firm. For example, research has demonstrated that product returns can result in increased follow-on spending with the retailer, thus suggesting that the act of returning a product enhances customer confidence with the retailer (Griffis et al., 2012a). Similarly, Petersen and Kumar (2009) have shown that this increased expenditure is not just restricted to the short term, but can be extended to customers' lifetime values as well. At a more general level, Wood (2001) argues that leniency in return policies increases purchase rates for customers in remote purchase situations. From a manufacturer's standpoint, Padmanabhan and Png (1997) show that lenient return policies also create sources of competitive advantage for retailers and manufacturers, thus alluding to the notion of the value of the returns proposition in customers' minds. Extending this idea,

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