



The moderating roles of risk and efficiency on the relationship between logistics performance and customer loyalty in e-commerce

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ABSTRACT

Using data from online customer ratings, we explore how the relationships between logistics performance and customer loyalty are affected by risk characteristics of products and efficiencies of the websites. Risk is defined in terms of price and ambiguity of products. Efficiency is interpreted as the ability of the websites to achieve good ratings in terms of operational factors (such as satisfaction of customers with product specifications, refunds/returns, prices, management accessibility, etc.) and also achieve good ratings in terms of customer loyalty. Our results show that efficiency, but not risk, is a significant moderator of the impact of logistics performance on customer loyalty.

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1. Introduction

Ability of an organization to attract and retain customers is vital to its success. Customer loyalty requires a strong desire by the customer for a product for which several product vendors are available (Dick and Basu, 1994; Otim and Grover, 2006). It is often shaped by positive experience by a customer on his purchase. A number of factors contribute to the experience – convenience, availability of the product, delivery, returns policy, etc. Obviously, some of these factors are based on efficient logistics performance of the company.

This paper focuses on the relationship between logistics performance and customer loyalty in the context of the business-to-consumer (B2C) segment of electronic commerce. E-commerce has shown impressive growth in the last few years but the rate of growth is slowing down. For example, US e-commerce retail sales have grown (13.6% over the first quarter of 2007) faster than total retail sales (2.8%) for the first quarter of 2008. However, this rate of growth is small compared to the fantastic 51% growth recorded in the first quarter of 2001. It is argued that, with the pricking of the internet bubble, many e-tailers are looking to develop sophisticated strategies to build customer loyalty and sales (Kwak, 2001).

Customer loyalty has gained increasing attention in the context of e-commerce in the recent literature (Burt and Sparks, 2003). Several studies have stressed the importance of various operational factors in determining customer retention and loyalty and ultimately the success of firms (e.g., Collier and Bienstock, 2006; Hsiao, 2009). Some of these studies have focused on the relationship between company performance and logistics performance. Logistics performance has been either studied as a single factor or as a part of a set of operational factors (Karpinski, 1999). E-commerce, especially the B2C segment, is typically characterized by large numbers of small order sizes demanding shipments with a different distribution system compared to the brick-and-mortar business and hence provides larger scope for the role of logistics (Rutner et al., 2003;

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Bailey and Rabinovich, 2005, 2006; Cho et al., 2008; Hsiao, 2009). It is believed that e-commerce has provided new opportunities to third-party logistics (3PL) service providers (Kroll, 1999) and that with continued growth of e-commerce, the importance of logistics is set to increase.

It has been recognized in the literature that risk characteristics of products could affect the relative importance of logistics and other operational factors (e.g., Finch, 2007). Further, using the resource-based-view of a firm as their theoretical background, a number of previous studies have found that efficiency could act as a moderator affecting the links between resource capabilities (including logistics capabilities) and performance (Nath et al., 2010; Lai, 2004; Daugherty et al., 2005). Hence, we study the role of risk and efficiency as moderating variables on the relationships between logistics performance and customer loyalty in this paper. Perceived risk plays an important role in shaping consumer behaviour (Hofacker, 2000) and is especially important with online customers (Doolin et al., 2005). Risk is a product-specific variable and varies based on the price and ambiguity of the product (Finch, 2007). Efficiency is a website-specific variable. We define efficiency of websites in terms of their ability to achieve good ratings in terms of operational factors and also in terms of customer loyalty.

The paper is organized as follows. A brief literature survey on concepts relevant to this paper is provided in the next section. The conceptual setting of the paper is provided in Section 3, where the moderating roles of risk and efficiency on consumer behaviour are examined. Section 4 discusses data and results of empirical analysis. Detailed discussions of the result of this study are provided in Section 5. Finally, Section 6 provides the conclusions of this study along with limitations and scope for future research.

2. Literature survey

2.1. The role of logistics performance on customer loyalty in e-commerce

There is a growing body of literature on the customer service factors and quality measurement in e-tailing (Collier and Binstock, 2006; McKinney et al., 2002). In general, customers use a variety of factors to judge the performance of an e-tailer and decide on their loyalty. In line with the focus of this study, we focus only on logistics-related operational factors below.

While the role of logistics on firm performance has been well researched in a traditional context (e.g., Morash and Clinton, 1997; Wisner, 2003; Green et al., 2008; Wong and Karia, in press; Yang et al., 2009), this topic has received relatively less attention in an e-commerce context. Traditionally, logistics services are built to facilitate efficient flow of goods, information, and cash. However, this linear relationship is said to have been broken in the e-commerce context, though the experiences of the past decade show that this has not been fully materialized (Rabinovich and Knemeyer, 2006). According to Rabinovich and Knemeyer (2006), the importance of logistics service providers has increased in the electronic marketplace. They have categorized the logistics services in e-commerce context on the basis of service-form (information-based and physical-asset based) and hub-functionality (buyer-focused, supplier-focused and delivery-focused). Bailey and Rabinovich (2005, 2006) have studied the impacts of inventory postponement and speculation on e-commerce. They have found that two key merchandise features—popularity and vintage—were driving forces in internet retailers' decisions to postpone their inventory.

Logistics plays a very important role in ensuring customer loyalty. The factors related to logistics are experienced by customers after making payments, and are often grouped as one of the post-purchase factors. Studies have found that customers generally considered physical delivery as a very important factor (Esper et al., 2003; Agatz et al., 2008) and that logistics capability is positively associated with firm performance in the computer and consumer electronics retailing industry (Cho et al., 2008) and container shipping services (Yang et al., 2009). Much has been written about the “last mile” of internet supply chains (Esper et al., 2003; Kull et al., 2007; Lee and Whang, 2001). Failure of many dot com enterprises is generally attributed to their inability to fulfill their online promises due to inadequate logistics support (Rutner et al., 2003). Significant sources of customer dissatisfaction arises either due to late arrival (or non arrival) of the product, accuracy of the order and/or due to damaged products.

Late arrival of the product would often make customers wait for the product with compounded anxiety levels. Logistics performance mainly deals with delivery speed and reliability but several studies have also included responsiveness, communication, order-handling and distribution (e.g., Cho et al., 2008) in the scope of logistics. Esper et al. (2003) have considered four logistics-related variables (delivery time, product condition, delivery satisfaction expectations and carrier reliability) in their study and have found that they are more favourable to retail merchants enjoying higher awareness. Lee and Whang (2001) have suggested five logistics strategies to fill online orders: logistics postponement, dematerialization, resource exchange, leveraged shipments and click-and-mortar. In general, logistics performance can be improved by employing multi-channel distribution, and most multi-channel e-tailers offer online consumers the option to return product via offline stores, which is greatly valued by customers (Agatz et al., 2008). The logistic platform for e-commerce fulfillment consists of logistics structure (e.g., direct distribution or via distribution centres), logistics processes (e.g., order-handling, storing, packing and transportation), and systems for information and reporting (Aldin and Stahre, 2003).

It is important that goods reach customers from warehouses without damage. There are research studies that showed that companies that used reliable carriers for delivery had better patronage from customers (Esper et al., 2003; Heim and Field, 2007). Adequate arrangements to process the products returned by customers is an important factor in the competitive market. This issue of reverse logistics is increasingly becoming a major consideration in e-commerce transactions.

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