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Reduction in consumers' purchasing cost by online shopping

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Abstract

The development of online shopping services is stimulated by both retailers and consumers. Compared to the brick-and-mortar type of stores, the online shopping retailers can save selling cost, such as rent and labor cost, and consumers who purchase items via online shopping site also can save time for shopping trips. In this study, we confirm how the online shopping affects retailer's selling cost and consumer's purchasing cost compared with the case of shopping at brick-and-mortar stores. Furthermore, we examine how delivery manners affects retailer's and consumer's cost, concluding that the online shopping retailers should clearly introduce the delivery charge independent from the price of the items.

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1. Introduction

Recently, more and more consumers use online shopping services. According to the research of U.S. research firm eMarketer, Global B2C online shopping sales amounted to about \$1.25 trillion. The online shopping becomes major option also in Japan to purchase various items. According to statistics released by Ministry of Economy, Trade and Industry, total Japanese online shopping sales in 2013 reached about 11.2 trillion yen (\$112 billion).

The development of online shopping services is stimulated by both retailers and consumers. The retailer's strategy on store location has been decided comparing consumers' accessibility and store size with rent and labor cost. However, online retailers' warehouses can be located at suburban areas where the land price is cheaper. In those areas, retailers can manage more stocks, which enable them to save rent and labor cost compared to brick-and-mortar. The online shopping services also benefit consumers because they can purchase items anytime and save their shopping time. The major reasons for Japanese consumers' online shopping usage were suggested in Ministry of Internal Affairs and

Communications (2011) (Fig.1). According to this research, many people recognize two time related factors (“It allows me to buy things regardless of stores’ business hours.”, “I don’t have to spend the time and money it takes to go to the store.”) as major reasons.

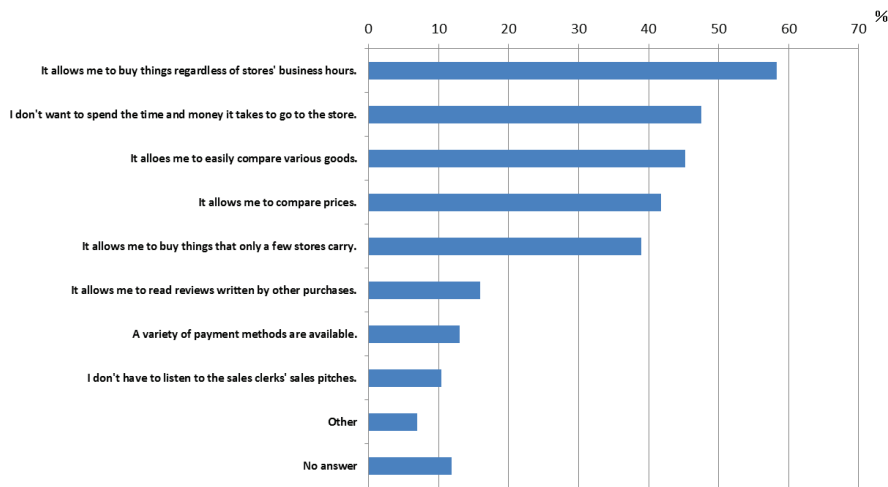


Fig. 1. Reasons for Shopping via the Internet (Multiple choices allowed)
Source: “Communications Usage Trend Survey in 2011”

As shown in Fig. 1, delivery time of items is quite important factor in online shopping to satisfy consumers’ demands. Compared with shopping at brick-and-mortar stores, consumers cannot use items immediately after they purchase at online shopping site. In this regard, consumers might recognize delivery time as their cost. Thus, online shopping retailers have required parcel delivery operators to reduce delivery time. In this study, we mainly consider the travel and delivery time as consumer’s cost. This is because the travel time is regarded as time to be saved for spending more time from the perspective of the value of time.

Japanese major online shopping retailers offer “free of delivery charge” to consumers. Of course, it takes some cost for delivery actually. The cost is included in the price of items. For this reasons, many Japanese consumers are hardly aware of costs for delivery. Moreover, consumers cannot choose delivery options such as discount delivery charge when consumers purchase several items at a time. So, it is suggested that they could take rational behavior with lower social cost by providing delivery options that reflect the cost for delivery. One of the City Logistics’ goals is the overall optimization of transportation in a city. Thus, considering the impact of consumers’ purchasing behavior on transportation in a city is quite important for City Logistics, we believe.

In these days, studies of online shopping have been conducted. There are a lot of the studies that deal with the relation between online shopping and consumers’ behavior in terms of the impact of electronic devices and information on consumers’ perceived risk and behavior of searching items (Nakamura and Yano (2014), Aoki (2005) and Abernathy *et al.* (2000)). On the other hand, many primary literatures about logistics have focused on optimal network design. These studies evaluate cost efficiency given several demand conditions and constraints. In terms of online shopping logistics, they focus how the actual logistics structures change due to growth of online shopping market, and indicate that the parcel delivery operators should design their networks according to the demand or some constraints (such as delivery time) changes (Lim and Shiode (2011) and Anderson *et al.* (2003)). The relation between online shopping and transportation is analysed in order to show the impact on the environment due to individual travel behavior in addition to those of logistics (Edwards *et al.* (2009)).

These studies attempt to clarify the impact of online shopping growth on consumer’s behavior and logistics networks. On the other hand, there are not so many studies that focus on the impact of consumer’s behavior on online

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