



Contents lists available at ScienceDirect

# Electronic Commerce Research and Applications

journal homepage: [www.elsevier.com/locate/ecra](http://www.elsevier.com/locate/ecra)

## The challenge for multichannel services: Cross-channel free-riding behavior

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### ARTICLE INFO

#### Article history:

Received 14 July 2009

Received in revised form 1 July 2010

Accepted 1 July 2010

Available online 6 August 2010

#### Keywords:

Electronic commerce

Multichannel

Switching behavior

Free-riding

Marketing channels

### ABSTRACT

In multichannel environments, consumers can move easily among different channels. They engage in cross-channel free-riding when they use one retailer's channel to obtain information or evaluate products and then switch to another retailer's channel to complete the purchase. Cross-channel free-riding erodes profits and is one of the most important issues that firms face in the multichannel era. The current study focuses on the most popular type of cross-channel free-riding: searching for product information in an online store and then purchasing in another brick-and-mortar store. It explores antecedents that may contribute to consumer switching behaviors through a questionnaire focused on cross-channel free-riding behavior. The empirical results reveal that when consumers perceive more multichannel self-efficacy, they engage in more cross-channel free-riding behavior. Perceived service quality of competitors' offline store and the reduced risk in the brick-and-mortar channel influence the attractiveness of this behavior and increase cross-channel free-riding intentions. By increasing within-firm lock-in levels, firms can reduce consumers' cross-channel free-riding intentions.

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### 1. Introduction

Marketing channels that customers use to interact with firms have proliferated. In the United States, seven of the top 10 Internet retailers (Staples, Office Depot, Dell, Hewlett-Packard, OfficeMax, Sears, and Sony) are traditional businesses that have expanded to offer an online presence (Brashear et al. 2009). Customers prefer a variety of channel options when they undertake the process of purchasing goods and services (Burke 2002, Verhoef et al. 2007). 44.7% of retailers use three channels, including brick and mortar, Internet, and catalog, and 50.5% of them use at least two channels in their sales efforts (Shankar and Winer 2005). Another survey reports that 65% of US online shoppers have searched for product information through the Internet channel and then purchased in a brick-and-mortar store (Chatham et al. 2004).

These multichannel customers, who use more than one channel to interact with a firm, provide tremendous opportunities for retailers (Pentina et al. 2009). Customers of one retail store who use all three channels (Web site, store, and catalog) spend \$887 annually, compared with \$150, \$195, and \$201 spent by customers who use only a Web site, store, or catalog, respectively (Shankar and Winer 2005). The proportion of multichannel shopping also relates positively to revenues and share of wallet (Kumar and Venkatesan 2005).

Multichannel customers entail challenges though, because they often search one retailer's Web site but then purchase in another retailer's store. According to previous literature, 20.4% of offline purchases take place after the customer has consulted a different retailer's Web site (Van Baal and Dach 2005). Even more recent research notes that 89% of consumers search for information about products online, but less than 7% of retail sales actually take place through that channel (comScore 2007). Multichannel customers who switch to another retailer to place their order when they switch channels are cross-channel free-riders; they benefit from the efforts of the firm from which they gather information but do not purchase (Van Baal and Dach 2005). To survive in a multichannel environment, firms must recognize multichannel customer behaviors.

The most common channel switching behavior occurs when consumers use the Internet to search and then buy in an offline retail store (Verhoef et al. 2007); up to 43% of all multichannel consumers search online and purchase offline (DoubleClick 2004, Neslin et al. 2006). Furthermore, 83.4 million US consumers made offline purchases after being influenced by online information they had gathered (Dieringer-Group 2005). Such cross-channel switching behavior erodes online stores' profits and represents a critical issue for firms in the multichannel era, yet limited research investigates the cross-channel free-riding phenomenon (Van Baal and Dach 2005, Verhoef et al. 2007). Nor is it clear how cross-channel free-riding works. To address these gaps, we focus on consumers' cross-channel free-riding behavior from the Internet to bricks-and-mortar stores.

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In particular, we explore the antecedents that may influence consumers' channel switching behaviors, including whether consumers' capability to employ multiple channels influences their intention to free ride. Although Internet shopping has become very popular, offline stores still seem attractive for the purchasing stage. Therefore, the present paper also investigates whether perceived multichannel integration and switching costs deter consumers' cross-channel free-riding. In the following sections, we first present the conceptual framework. We then review prior research about multichannel self-efficacy, switching costs, and the attractiveness of competitors' offline retail store. Next, we present the research methodology, including a delineation of the measurements we used to test the hypotheses. Following an examination of the results, we conclude with key managerial and research implications.

**2. Theoretical background**

As the variety of marketing channels grows, consumer purchasing behaviors have become ever more complicated. Coughlan et al. (2001) reveal that customers may use services in one channel but purchase from another store, whether in the same or a different channel. For example, consumers use one retailer's Web site to search for information but then buy from another retail site that offers lower prices (Carlton and Chevalier 2001). Customers also switch across channels to buy products, especially when they confront the financial, psychological, security, and performance risks that mark Internet shopping compared with traditional shopping (Bobbitt and Dabholkar 2001, Lee 2009). Online search engines provide vast shopping information easily, which reduces the power of online stores to control where consumers will purchase (Ba et al. 2007). If customers stay with the same retailer across channels (e.g., visit its store to search, then buy from its Web site), multi-channel firms have a direct advantage over one-channel competitors. However, if customers switch retailers (whether they switch channels or not) after gaining search information, they engage in free-riding behavior (Van Baal and Dach 2005).

In a traditional single-channel environment, customers gather information and purchase from different retailers (switch) or complete both stages of their purchase decision at a same store (retention). In the multichannel environment though, the discussion must consider cross-channel retention and cross-channel free-riding. Specifically, customers could gather information from the online channel of Company A and purchase from the online channel of Company A or Company B. They may also gather information from the online channel of Company A, and purchase from the offline channel of either company. The present study therefore considers two dimensions of customer switching behavior to investigate purchasing behaviors in a multichannel environment. (See Fig. 1.) We ask: Does the consumer use the same channel for both searching and purchasing? We also ask: Does the consumer contact the same company to search and purchase?

In Fig. 1, within-channel switching indicates customers gather information from the online channel of Company A; however, they switch to another online channel of Company B to purchase. Within-channel retention means customers gather information and purchase from the same online channel of the same company (Company A). Cross-channel free-riding indicates customers gather information from online channel of Company A; however, they purchase from the offline channel of Company B. Cross-channel retention means customers gather information from the online channel of Company A; then they purchase from the offline channel of the same company (Company A).

Cross-channel free-riding represents a mixed case of channel switching and firm switching behavior. To understand such behavior, we refer to literature pertaining to consumers' service provider switching behavior. In the previous literature, Bansal et al. (2005) adopt the push-pull-mooring (PPM) paradigm from the human migration literature to explain consumers' switching behavior. This paradigm reveals three determinants that influence consumers' switching intentions: (1) the push effect, or the factors that motivate people to leave an origin; (2) the pull effect, or the positive factors that draw prospective migrants to a destination; and (3) the mooring effect, which consists of the obstacles that prevent migration from occurring (Bansal et al. 2005, Lee 1966, Moon 1995).

Do customers contact with  
the same company from  
searching to purchasing?

No	<b>Within-channel switching</b> Customers search at the online channel of company A, then purchase from the online channel of company B.	<b>Cross-channel free-riding</b> Customers search at the online channel of company A, then purchase from the offline channel of company B.
	<b>Within-channel retention</b> Customers search and purchase from the same online channel of the same company (company A).	<b>Cross-channel retention</b> Customers search at the online channel of company A; and they purchase from the offline channel of the same company (company A).

Yes

No

Do customers use  
the same channel  
from searching to  
purchasing?

**Fig. 1.** Multichannel customer behavior matrix.

The present study develops a conceptual framework based on this PPM model. Push factors are the factors that motivate people to leave an origin (Stimson and Minnery 1998); they are characteristics of the place of origin that influence the migration decision (Bansal et al. 2005). In the multichannel environment, multichannel self-efficacy, which indicates the ability and confidence of consumers to employ multiple channels (Compeau and Higgins 1995), has been widely discussed in many studies and has become the central issue in one's outcome and performance (Hsu and Chiu 2004, McKee et al. 2006). If customers believe that they are not able to perform a task on the Internet environment, they will not engage in the online behavior, even if they acknowledge the advantage of online shopping. This "pushes" these customers using the physical channels. Pull factors are the factors that draw prospective migrants to the destination (Moon 1995) and are the factors belong to destinations that make people appealing (Bansal et al. 2005, Dorigo and Tobler 1983). In previous literature, attractive factors at the destination pull the migrant to this destination; and the only existing factor widely discussed in the service switching literature that conforms to this conceptualization is alternative attractiveness (Bansal et al. 2005). Even when push and pull factors are strong, people may not migrate. This is due to the so-called mooring effects. Mooring effects consists of the obstacles that prevent migration from occurring (Gardner 1981). Obstacles such as family obligations at the origin or the high cost of moving prevent migration occurring (Boyle et al. 1998). In the multichannel context, within-firm lock-in, which refers to the extent of a company retaining consumers across both search and purchase processes, prevents consumers to migrate (Neslin et al. 2006).

Accordingly, we posit that multichannel self-efficacy is a push effect that motivates consumers to become cross-channel free-riders. Attractiveness of the competitors' offline retail store represents a pull effect, because it initiates channel switching by drawing consumers from their online search to their offline purchase. Finally, we propose that within-firm lock-in represents a mooring effect that creates reluctance to switch.

### 2.1. Cross-channel free-riding

Previous research into free-riding tends to focus on the consumption of public goods, for which it is difficult or impossible to restrict access (Nicholson 1985). In a retailing context, free-riding occurs when the inputs needed for the retailer to sell a product, such as retail showrooms or retail advertising, cannot be separated, and only those who purchase the products have access to them (Van Baal and Dach 2005). Thus, one retailer may engage in the activities necessary to sell the product, but a different lower-priced store may enjoy the final sale. Free-riding thus erodes the motivation of any retailer to invest in promotions of its products.

In a multichannel environment, the free-riding problem has become more complex because consumers pursue hybrid utilities through various channels (Wind et al. 2002). Consumers require that retailers provide products, prices, communication messages, and delivery formats that precisely serve their individual needs. Because each distribution channel involves a specific cost structure and capabilities though, it can only provide a constrained range and intensity of goods and services, which determine the needs it can fulfill and, ultimately, the sales volume it can generate. For example, the Internet is convenient for searching information, because it provides a wide range of information at a low cost (Klein and Ford 2003). However, to maximize utilities, consumers may free-ride on an e-tailer's channels. We focus specifically on the cross-channel free-riding that occurs when consumers search online, then purchase at another retailer's brick-and-mortar store.

### 2.2. Multichannel self-efficacy

Self-efficacy refers to "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura 1986, p. 391). It therefore pertains not to the skills a person has but rather to the person's judgments of what he or she can do with the skills in his or her possession. Self-efficacy is a strong predictor of behavior (Maddux et al. 1986) and influences choice behavior, which often depends on how efficacious a consumer feels toward an option (Mager 1992). When people believe that they are unable to perform a task, they will not engage in the behavior, even if they acknowledge that it is the better alternative (Seltzer 1983).

We define multichannel self-efficacy as the ability and confidence of consumers to employ multiple channels, including online and brick-and-mortar stores, to finish a transaction, starting with information search and ending in purchase. The current study uses the term "expertise" to describe a consumer's perception of being skilled at selecting the best retailers from a choice set (Balasubramanian et al. 2005). People with high multichannel self-efficacy perceptions think of themselves as experts in selecting the best service provider in different consumption stages. Therefore, the more a consumer believes that he or she is capable of handling various problems in different channels, the greater is the possibility of free-riding. We propose

- **Hypothesis 1 (The Multichannel Self-Efficacy Hypothesis):** Multichannel self-efficacy has a positive effect on cross-channel free-riding.

### 2.3. Internet experience

Successful previous experience is the most influential factor in promoting a sense of personal self-efficacy (Bandura 1991). Research into the effects of Web experience levels on search performance reveals that students with more experience require less time, produce more correct responses, and engage in fewer actions during search tasks (Lazonder et al. 2000). Similarly, the previous use of related technology increases perceptions of self-confidence and ability; heavy users of related technologies are able to use alternative channels (Meuter et al. 2005). Therefore, persons with more Internet experience have lower barriers to learning how to use multiple channels efficiently. The higher the frequency of Web-based contacts, the higher is the likelihood that a person engages in multichannel shopping (Kumar and Venkatesan 2005). We therefore propose

- **Hypothesis 2 (The Internet Experience Hypothesis):** Internet experience has a positive effect on multichannel self-efficacy.

### 2.4. Vicarious experience

Even if people lack significant prior accomplishments, their efficacy expectations might increase as a result of others' performance, or vicarious experience. If people of widely different characteristics can succeed, observers have a reasonable basis for increasing their own sense of self-efficacy (Bandura 1977). For example, before they begin teaching, teachers' self-efficacy perceptions about working with difficult-to-teach children increase when they recognize vicarious experience (Hagen et al. 1998). Learning by observation, or behavior modeling, also offers a powerful means of behavior acquisition (Manz and Sims 1986). Learning by observation enables people to avoid needless and often costly errors and may help them learn faster than the actual performance of the tasks would (Bandura 1977). Research also reveals that when others in the person's reference group use technology more, his or her

computer self-efficacy increases (Compeau and Higgins 1995). Hence, if consumers recognize that their reference groups employ multiple channels to complete a transaction and gain maximum utility, they should be more confident to adopt similar behaviors.

- **Hypothesis 3 (The Vicarious Experience Hypothesis):** Vicarious experience has a positive effect on multichannel self-efficacy.

### 2.5. Within-firm lock-in

Within-firm lock-in refers to the ability of a company to retain consumers across both search and purchase processes (Neslin et al. 2006). Studies suggest that shoppers who use more channels spend more than do those who use just a single channel (Kumar and Shah 2009, Kumar and Venkatesan 2005). However, many shoppers switch providers when they switch channels (Neslin et al. 2006), which implies that multichannel retailers must determine how they can keep their consumers even after they switch channels. Within-firm lock-in makes it more difficult or costly for customers to change providers, because they perceive that they would need to expend significant resources to undertake a switch from the incumbent to the alternative firm (Johnson et al. 2003, Zauberman 2003).

Because customers evaluate the performance of a firm's multiple channels holistically, a successful multichannel strategy requires the firm to provide a holistic customer experience (Weinberg et al. 2007). Within-firm lock-in results when customers anticipate costs associated with providing their information or expressing their needs every time they switch retailers. Therefore, a strong multichannel strategy satisfies customer needs throughout the consumption process and does not force customers to use any particular channel.

Furthermore, prior literature addresses customer retention from multiple perspectives, including customer satisfaction and emotional commitment (Oliver 1999, Reichheld and Scheffer 2000, Shankar et al. 2003). For a free-rider in a multichannel environment, satisfaction and emotional commitment toward a Web site seems hardly developed from short-term searching activities, though the time and effort investment (e.g., entering contact information, becoming familiar with the site navigation) might create some within-firm lock-in perceptions (Zauberman 2003). If consumers perceive that they can search an online channel easily and complete the transaction smoothly, they might not switch to another retailer to purchase. Therefore, within-firm lock-in is a switching barrier that can reduce the consumer's intention to switch retailers even if he or she switches channels—in other words, it might decrease cross-channel free-riding intentions.

- **Hypothesis 4 (The Within-Firm Lock-In Hypothesis):** Within-firm lock-in has a negative effect on cross-channel free-riding.

### 2.6. Switching costs

Switching costs are the one-time expenses that customers associate with the process of switching from one provider to another (Burnham et al. 2003, p. 110). In previous literature, switching costs includes search, transaction, and learning costs, as well as loyal customer discounts, customer habits, emotional attachments, and cognitive effort, coupled with financial, social, and psychological risks (Fornell 1992). Few people explicitly assess these risks, but they become salient and evident when consumers confront the possibility of switching.

When the perceived costs of an activity increase, the likelihood that consumers engage in switching behavior diminishes. For example, information economics research demonstrates that when

the costs of information increase, the extent of search declines (Urbany 1986). Research also reveals that perceived switching costs have a positive influence on switching barriers (Tsai et al. 2006). Switching costs therefore influence propensity to search and switch to alternative options, such that high switching costs enhance customer loyalty (Morgan and Hunt 1994). To the extent that consumers perceive high switching costs, they should experience greater within-firm lock-in and be more inclined to stay with the provider (Zauberman 2003). We therefore propose:

- **Hypothesis 5 (The Switching Costs Hypothesis):** Switching costs have a positive effect on within-firm lock-in.

### 2.7. Perceived multichannel integration

Most consumers prefer to use multiple channels when they shop (Burke 2002). Although online and brick-and-mortar stores may be natural complements (Steinfeld et al. 1999), many firms still struggle to find a profitable and effective way to serve customers in multiple channels (Rangaswamy and Van Bruggen 2005). In particular, they still require a means to comprehend the customer experience holistically, with an emphasis on satisfying customer needs by combining channels, before they develop their multichannel strategy (Weinberg et al. 2007). Research suggests that managers should increase channel synergy by integrating their different channels (Neslin et al. 2006). When customers are dissatisfied with one channel, they may reject the retailer completely. We therefore define multichannel integration as the mutual support of or interchangeability between online and offline channels (Bendoly et al. 2005).

Consumers employ these multiple channels to achieve maximum utilities (Balasubramanian et al. 2005, Noble et al. 2005). From the learning effect perspective, online stores can extend effectively into new channels or new product categories by using familiar navigation designs that encourage purchases (Johnson et al. 2003). When customers visit more channels, they develop a total multichannel portfolio, which lowers their learning costs and increases their perceptions of within-firm lock-in. That is, customer perceptions of online and offline multichannel integration should promote greater customer stickiness to the firm (i.e., within-firm lock-in), such that consumers who search for a specific product in one channel tend to purchase in an alternative channel run by the same firm (Bendoly et al. 2005).

Multichannel retailers also can foster customer stickiness by providing customers with more options and service opportunities, such that their familiarity with the retailer lessens the likelihood that they will switch and increases the chances for business success (Dholakia et al. 2005). Teerling and Huizingh (2004) find that online and offline satisfaction reinforce each other and lead to more firm-specific loyalty. Because prior research supports the idea that an integrated multichannel strategy enhances customer retention (Verhoef and Donkers 2005), we therefore propose a positive relationship between perceived multichannel integration and lock-in.

- **Hypothesis 6 (The Perceived Multichannel Integration Hypothesis):** Perceived multichannel integration has a positive effect on within-firm lock-in.

### 2.8. Attractiveness of competitors' offline retail store

The attractiveness of competitors' offline retail store reflects consumers' positive attitudes toward competing offline service providers, which positively influence their intentions to switch (Jones et al. 2000). More attractive competitors increase consumers' intentions to purchase from these alternative service providers

(Bansal et al. 2005). Using the terminology of the PPM model, the relative attractiveness of a specific retailer pulls the customer to this destination in a multichannel environment (Verhoef et al. 2007). Furthermore, on the basis of the theory of reasoned action (Fishbein and Ajzen 1975), consumer perceptions of the attributes of alternative stores translate into purchase attractiveness, which influence store choices.

Consumers indicate that their top reasons for not purchasing from an online channel include the poor service quality and privacy risks compared with the lower perceived risk and greater sales assistance in brick-and-mortar stores (Verhoef et al. 2007). For a shopper who employs multiple channels across different stages of the purchasing process, a more attractive brick-and-mortar store increases the possibility of free-riding. We thus propose:

- **Hypothesis 7 (The Competing Offline Store Hypothesis):** The attractiveness of competitors' offline retail store has a positive effect on cross-channel free-riding.

### 2.9. Perceived service quality of competitors' offline store

Perceived quality refers to a consumer's judgment about overall excellence or superiority (Zeithaml 1988); perceived service quality of competitors' offline store therefore indicates customer's perception about overall service performance of competitors' offline store. In the literature, the relationship between quality perceptions and customer attitude has long been a focus of marketing literature (Zeithaml et al. 2002). In a multichannel context, consumers have had more experiences with brick-and-mortar channels, they may assess online channel service quality relative to a benchmark of brick-and-mortar stores (Mick and Fournier 1998, Zeithaml et al. 2002). Therefore, consumers form service quality perceptions on the basis of their comparison of services offered by the online channel they search and the offline store. The relative service performance levels have direct effects on the attractiveness of competitors' offline retail store. The present study proposes that the competitors' brick-and-mortar store that consumers perceive offers higher service quality will enjoy greater attractiveness than will an online store, which prompts free-riding.

- **Hypothesis 8 (The Service Quality of a Competing Offline Store Hypothesis):** The perceived service quality of competitors' offline store has a positive effect on the attractiveness of competitors' offline retail store.

### 2.10. Perceived risk of purchasing online

Finally, perceived risk of purchasing online indicates the perceived risk of purchasing online from both competitors and the company the customer is patronizing. Here, the perceived risk of purchasing online consists of two components: uncertainty (i.e., likelihood of unfavorable outcomes) and consequences (i.e., importance of the loss). Different types of risk exist, such as financial, performance, time, physical, psychological, and social (Jacoby and Kaplan 1972, Murray and Schlacter 1990). Perceived risk also varies across methods of shopping, such that nontraditional shopping may entail greater risk than traditional forms (Gillett 1976). Some types of risk, such as financial, psychological, security, and performance, are more applicable to shopping on the Internet than to other nontraditional or traditional shopping methods (Bobbitt and Dabholkar 2001, Lee 2009). In terms of financial risk, consumers may fear that a company they "know" only through the Internet will misuse their credit card information. Psychological risk arises because Web sites capture personal information, and consumers may not really know the entity from which they are buying. Consumers' security risk concerns may include the theft of

their sensitive information by hackers. Performance risk might involve, for example, the online purchase of an item and the receipt of a different item than advertised. Internet users choose not to shop online channels mainly because of their risk considerations, including the security of the transaction and their inability to check the merchandise before purchasing (Verhoef et al. 2007). Consumers' perceptions of risk thus are central to their evaluations and purchasing behavior, and we propose a direct relationship:

- **Hypothesis 9 (The Perceived Risk of Purchasing Online Hypothesis):** The perceived risk of purchasing online has a positive effect on the attractiveness of competitors' offline retail store.

## 3. Method

### 3.1. Sample

To examine the hypotheses, we conducted a field survey in Taiwan. We trained graduated students—whose use as data collectors has been adopted successfully in previous studies (Bitner et al. 1990, Gwinner et al. 1998)—and instructed them to distribute questionnaires to the person who had Internet experiences.

We initially screened the respondents to select those consumers who had cross-channel free-riding experience with buying consumer electronics, PC equipment/hardware, or software in the past three months. According to Van Baal and Dach (2005), these products have dominant search characteristics, experience rapid technological changes, and provoke infrequent purchases, which increases the chances of free-riding when consumers purchase them. In line with previous literature, we assumed that search and purchase could be separated sufficiently well for analysis (Van Baal and Dach 2005). Also, respondents provided their answers to two questions: "1. Have you gathered information in an online shop before purchasing in a brick-and-mortar store?" and "2. Did you gather the information in the online shop of the same firm from which you finally chose to buy?" Those who answered "Yes" to question 1 and "No" to question 2 entered the sample; if either criterion was not met, we excluded that respondent from our analysis. A total of 619 questionnaires were collected.

Among the 619 respondents, 116 (14%) lacked experience with gathering information from online channels before purchasing in an offline store, and 181 (22%) gathered information online and then purchased the item from the same retailer offline. Therefore, we deemed 322 questionnaires useful. The respondents consisted of more women (57%) than men (43%) and ranged in age from 16 to 45 years. Approximately 87% of the sample had earned at least a university degree. Finally, they were primarily employees in services or high-tech industries.

### 3.2. Measures

Self-efficacy is defined as "people's judgments of their capabilities to organize and execute course of action required to attain designated types of performances" (Bandura 1986, p. 391). In the current study, we use multichannel self-efficacy to refer to the ability and confidence of consumers to employ cross-channel behavior to complete a transaction, from information search to purchase. We adopted four items from Wang and Netemeyer (2002) and McKee et al. (2006) to measure this construct: (1) I am confident of my ability to use different channels, (2) I have the capability to deal with the services at different channels, (3) It is easy for me to successfully use different channels in the process of purchase, and (4) I believe I am good at evaluating the choices of multiple channels. Internet experience refers to the degree of familiarity with Internet usage, which we measured with

four items from Ford et al. (2001): (1) It is easy for me to use the Internet, (2) I don't often search on the Internet, (3) I am good at searching on the Internet, and (4) I can find product information in a short time on the Internet. To measure vicarious experience, or the extent to which others in the respondent's reference group employ cross-channel behavior, we adopted two items from Compeau and Higgins (1995): (1) My colleagues and (2) my friends have had successful experiences using multiple channels.

Within-firm lock-in refers to the ability of a retailing firm to retain the consumer across both search and purchase processes (Neslin et al. 2006). The current study has drawn on work by Ranaweera and Prabhu (2003) and Tsai et al. (2006) to operationalize the perceived lock-in construct with two items: (1) I have no trouble switching between firms (reverse item) and (2) I don't like to switch to another firms after I have invested some time to search the online retailer's site. Switching costs are the one-time costs that customers associate with the process of switching from one provider to another (Burnham et al. 2003). We adopted two items, with minor wording changes, from Jones et al. (2000): (1) It takes time to switch between firms, and (2) It takes effort to switch between firms. Multichannel integration indicates to the extent to which a retailer integrates its online channel with its brick-and-mortar channel, for which we constructed three items based on Burke (2002): When I purchase from the online store, (1) I can pick up the product from its offline channel, (2) I can return the product in its offline channel, and (3) I can change the product in its offline channel. These three items identify whether consumers can move easily from clicks to bricks, which reflects the extent of the multichannel integration (Burke 2002, Ranganathan et al. 2003).

The attractiveness of competitors' offline retail store indicates the advantages of competitors' store in the physical channels compared with online channels. The present study used four items based on Bansal et al. (2005) and Jones et al. (2000) to reflect consumers' positive attitude toward competing service providers: (1) I would be more satisfied with the services from this offline store where I purchase the product than from online stores, (2) I would probably be happier with the services from this offline store, (3) all in all, the policies of this offline store that I purchase from would benefit me more than online stores, and (4) overall, purchasing from this offline store would be better than purchasing from online stores. To measure the perceived service quality of competitors' offline store, we employed four items: providing reliable services (Zeithaml et al. 2002), prompt services (Zeithaml et al. 2002), interaction (Dutta and Segev 1999), and tangibility (Zeithaml et al. 1988).

To measure perceived risk of purchasing online, we used a five-item scale: (1) The possibility of getting the wrong product, (2) difficulty in judging product quality, (3) incorrect payments, (4) insecure personal data (Verhoef et al. 2007), and (5) fraudulent transactions (Garbarino and Strahilevitz 2004). Finally, for the cross-channel free-riding intentions, we adopted a two-item scale based on Van Baal and Dach (2005): I would search in an online store but purchase in another brick-and-mortar store when (1) I bought similar products and (2) I bought other products. For all items, we used seven-point scales ranging from 1 (extremely disagree or low) to 7 (extremely agree or high).

## 4. Analysis and results

### 4.1. Reliability and validity

To examine the scale reliability for each dimension, we computed the Cronbach's alphas, which range from .78 to .94 and therefore fall within the acceptable range (Churchill 1979). We thus confirm the internal consistency of the measures.

To test the construct validity of the measurements, we conducted a confirmatory factor analysis (CFA) using LISREL 8.70. We obtained a chi-square/degrees of freedom index ( $\chi^2$ /d.f.) of 1.57; normed fit index (NFI) of .96, nonnormed fit index (NNFI) of .98, comparative fit index (CFI) of .98, goodness-of-fit index (GFI) of .89, adjusted goodness-of-fit index (AGFI) of .86, root mean squared error of approximation (RMSEA) of .042, and standardized root mean square residual (SRMR) of .049. These values suggest an adequate fit of the model to the data. We also examined the convergent and discriminant validity for construct validity. Convergent validity is supported when the average variance extracted (AVE) between the constructs and their measures is greater than .50 and the loading on the hypothesized construct is significant. In this study, the AVE value of each construct is higher than .5, and the factor loadings are all significant at  $p < .05$ , in support of convergent validity. We also find evidence of discriminant validity, because the correlations of the constructs all differ significantly from unity.

### 4.2. Hypotheses testing

We tested the hypothesized relationships using the maximum likelihood procedure in LISREL 8.7. From this test, we obtained a  $\chi^2$  of 767.80, 440 degrees of freedom, a  $\chi^2$ /d.f. of 1.75, NFI of .95, NNFI of .97, CFI of .98, GFI of .87, AGFI of .84, RMSEA of .048, and SRMR of .072. The squared multiple correlations (SMCs) for the structural equation for cross-channel free-riding are high. More than half of the variance (SMC = .68) in cross-channel free-riding can be explained by the direct effects of multichannel self-efficacy, within-firm lock-in, and the attractiveness of competitors' offline retail store. Similarly, the SMC values in multichannel self-efficacy, within-firm lock-in, and the attractiveness of competitors' offline retail store are .64, .72, and .55, respectively. These values suggest an adequate fit of the model to the data.

The results of hypothesized model analysis appear in Fig. 2. First, multichannel self-efficacy has a significant positive effect on cross-channel free-riding ( $\lambda = .30$ ,  $t = 5.66$ ), in support of H1, and Internet experience ( $\lambda = .44$ ,  $t = 8.98$ ) and vicarious experience ( $\lambda = .33$ ,  $t = 7.03$ ) both have positive effects on multichannel self-efficacy, in support of H2 and H3, respectively.

Second, we find that within-firm lock-in has negative effects on cross-channel free-riding ( $\lambda = -.71$ ,  $t = -8.63$ ) and switching costs have positive effects on lock-in ( $\lambda = .55$ ,  $t = 9.98$ ), so we obtain support for H4 and H5, respectively. However, unexpectedly, perceived multichannel integration has no significant effect on lock-in ( $\lambda = .00$ ,  $t = .03$ ), which indicates H6 is not supported.

Third, the attractiveness of competitors' offline retail store has a positive effect on cross-channel free-riding ( $\lambda = .40$ ,  $t = 4.62$ ), in support of H7, and both perceived service quality ( $\lambda = .59$ ,  $t = 8.52$ ) and perceived risk of purchasing online ( $\lambda = .17$ ,  $t = 3.30$ ) have positive effects on the attractiveness of competitors' offline retail store in support of H8 and H9.

### 4.3. Mediation effects

After examining the hypotheses through structural equation modeling, we test for mediation effects using the steps suggested by Hair et al. (2006). When the paths from the independent variables to the dependent variable are included in the model (i.e., the full model), the fit of this full model is as follows:  $\chi^2 = 756.12$ , d.f. = 434,  $\chi^2$ /d.f. = 1.74, NFI = .95, NNFI = .97, CFI = .98, GFI = .87, AGFI = .84, RMSEA = .048, and SRMR = .071. This full model does not offer a better fit than the original hypothesized model ( $\Delta\chi^2 = 11.68$ , d.f. = 6,  $p > .05$ ). Because the two models produce similar fits, we find initial support for mediation (Hair et al. 2006).

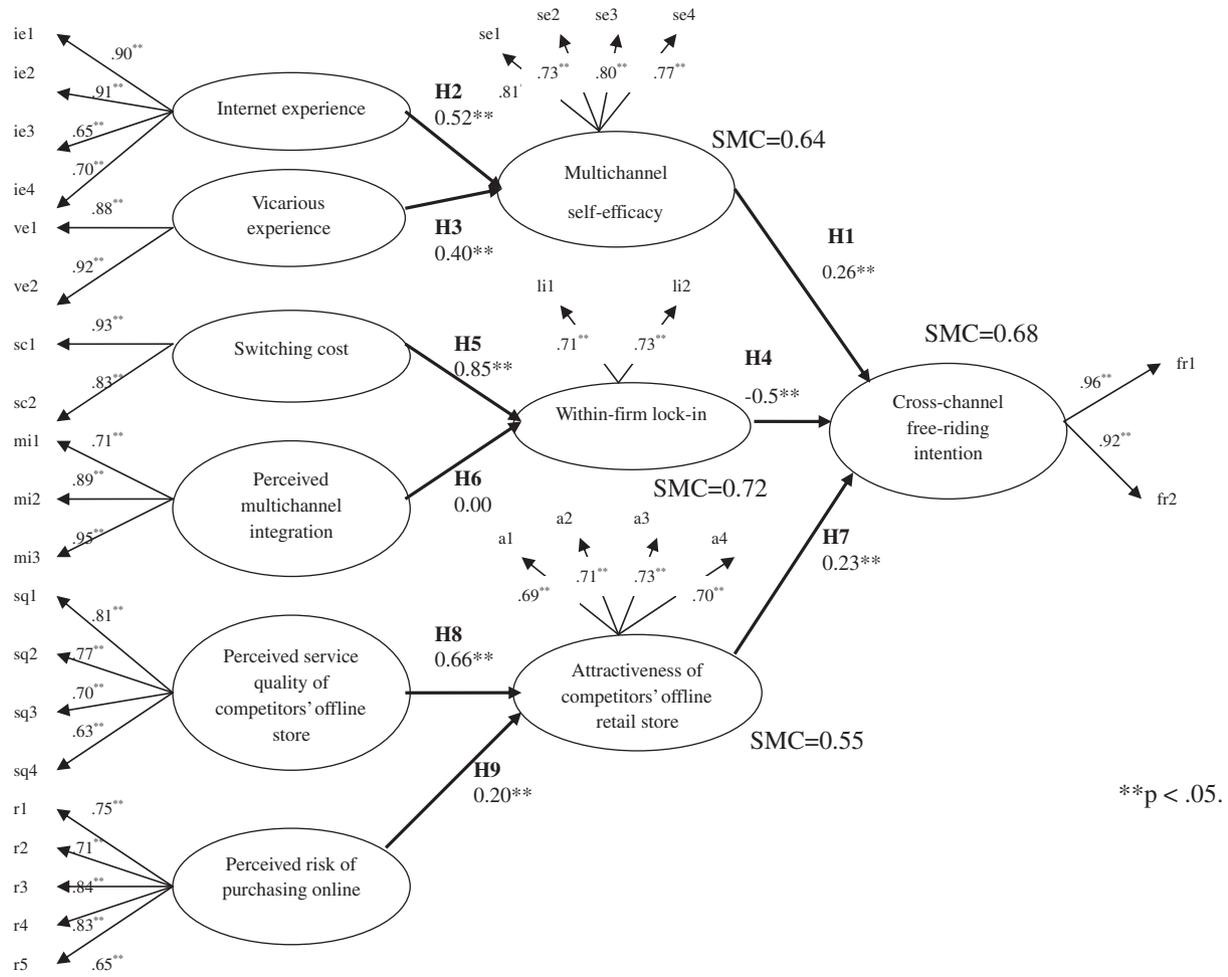


Fig. 2. Standardized solutions of hypothesized model.

Table 1  
Structural model results for the hypothesized paths.

Hypothesized paths	Hypothesized	Direct	Full
Multichannel self-efficacy → cross-channel free-riding (H1)	0.30**	–	0.14*
Internet experience → employ multichannel self-efficacy (H2)	0.44**	–	0.51**
Vicarious experience → employ multichannel self-efficacy (H3)	0.33**	–	0.40**
Within-firm lock-in → cross-channel free-riding (H4)	–0.71**	–	–0.51**
Switching cost → within-firm lock-in (H5)	0.55**	–	0.82**
Perceived multichannel integration → within-firm lock-in (H6)	0.00	–	0.01
Attractiveness of competitors' offline retail store → cross-channel free-riding (H7)	0.40**	–	0.10*
Perceived service quality of competitors' offline store → attractiveness of competitors' offline retail store (H8)	0.59**	–	0.65**
Perceived risk of purchasing online → attractiveness of competitors' offline retail store (H9)	0.17**	–	0.19**
Internet experience → cross-channel free-riding	–	0.18**	0.10
Vicarious experience → cross-channel free-riding	–	0.13**	0.03
Switching cost → cross-channel free-riding	–	–0.41**	–0.06
Perceived multichannel integration → cross-channel free-riding	–	–0.02	–0.02
Perceived service quality of competitors' offline store → cross-channel free-riding	–	0.23**	0.14*
Perceived risk of purchasing online → cross-channel free-riding	–	0.11**	0.09*

\*  $p < .1$  ( $t > 1.645$ ).

\*\*  $p < .05$  ( $t > 1.96$ ).

We confirm these mediation effects according to four conditions (Baron and Kenny 1986, Hair et al. 2006, Maxham and Netemeyer 2002). The first condition requires that the independent variables affect the mediators. The second condition exists if the mediators affect the dependent variables. The hypothesized paths are mostly significant, except for the relationship between per-

ceived multichannel integration and within-firm lock-in. Therefore, our results indicate that most of the relationships meet the first two conditions (Table 1).

The third mediation condition requires that the independent variables affect the dependent variable. We estimate a direct model with only direct paths ( $\chi^2 = 1310.41$ , d.f. = 443,  $\chi^2/d.f. = 2.95$ ,

NFI = .91, NNFI = .93, CFI = .94, GFI = .80, AGFI of .89, RMSEA of .045, and SRMR = .078) and find that all the direct paths (except for that from multichannel integration to the dependent variable) are significant ( $p < .05$ ), which satisfies the third mediating condition.

Finally, mediation exists if the direct paths from the independent variables to the dependent variables become insignificant (i.e., full mediation) or reduce (partial mediation) when we include the mediators in the model (full model). A closer inspection of the direct and full models (see Table 1) reveals that three of the direct paths (Internet experience → cross-channel free-riding, vicarious experience → cross-channel free-riding, and switching cost → cross-channel free-riding) became insignificant, in support of full mediation, whereas two direct paths (perceived service quality of competitors' offline store → cross-channel free-riding and perceived risk of purchasing online → cross-channel free-riding) diminish, in support of partial mediation. Therefore, the results for Baron and Kenny's (1986) mediation conditions confirm that multichannel self-efficacy, within-firm lock-in, and the attractiveness of competitors' offline retail store are mediators in our model.

## 5. Discussion and managerial implications

### 5.1. Conclusion

With this study, we explore several factors that may lead customers to switch between channels during their purchase process. On the basis of the PPM model from human geography literature, we explain why consumers may be willing to cross-channel free-ride by examining three effects: push, pull, and mooring. The push effect, which consists of consumers' perceived self-efficacy to employ multiple channels, has a positive influence on cross-channel free-riding intentions. The pull effect, or the relative attractiveness of the competitors' brick-and-mortar stores, also has a positive influence on these intentions. However, the mooring effect, or within-firm lock-in, has a negative influence on cross-channel free-riding intentions.

These findings have several implications. First, when consumers perceive themselves as highly capable of employing different channels for different purposes, they also have higher intentions to switch between retailers. Specifically, when consumers have more performance experience (i.e., successful prior task completion), their self-efficacy perceptions increase. Thus, as consumers' Internet experience grows, to include browsing and searching behaviors, they gain more confidence in their ability to complete a transaction through more than one channel (Bandura 1986). At the same time, vicarious experience has a positive influence on multichannel self-efficacy, as proposed by social learning theory. Thus, the experiences of observing and imitating a peer group enhance consumers' multichannel self-efficacy perceptions. Such higher multichannel self-efficacy increases the possibility that people engage in cross-channel free-riding, because they expect to obtain maximum utilities from different channels. These findings are consistent with self-efficacy theory (Bandura 1986).

Second, our results indicate that cross-channel free-riding intentions decline as within-firm lock-in rises, consistent with previous studies that indicate within-firm lock-in has a positive effect on customer retention (Bansal et al. 2005, Lee et al. 2001, Ranawera and Prabhu 2003, Tsai et al. 2006). If consumers consider searching for product information from an online store and purchasing from a brick-and-mortar store a hassle, they will not tend to engage in cross-channel free-riding. When consumers have learned to use a Web site's interface, they also may be reluctant to switch to another store. In our hypothetical model, switching costs represent antecedents of perceived within-firm lock-in, yet we find no significant influence of perceived multichannel integra-

tion on perceived within-firm lock-in, possibly because the retail channels still function in relatively independent manners. That is, multichannel integration remains in its infancy (Weinberg et al. 2007). Click-and-mortar integration might become more operational through value-added services, such as (1) informational integration, which enables customers to locate the nearest store, check inventory, order and make payments, and set up and manage online accounts, or (2) logistical integration, which enables customers to order online and pick up their purchases from the nearest store or return products purchased from the Web site at the local outlet (Saeed et al. 2003). Another study indicates that to manage a multichannel system effectively, a retailer must have an information system that shares customer, pricing, and inventory-based information across channels (Berman and Thelen 2004).

Third, the higher perceived quality and higher perceived risk of purchasing online have positive effects on consumers' cross-channel free-riding intentions. Cross-channel free-riders prefer to purchase in brick-and-mortar stores because they can check merchandise, pick it up immediately, get assistance from employees, and avoid purchasing risks. This result is consistent with research that shows service quality and privacy are the two main attributes that hinder the Internet as a purchase channel (Verhoef et al. 2007).

### 5.2. Managerial implications

Marketing literature calls a consumer who investigates a product in one channel and then purchases it from another channel a "research shopper" (Neslin et al. 2006, Verhoef et al. 2007). Roughly half of all research shoppers investigate the product online first and then purchase it offline (Kelley et al. 2002). Research shopping might be either positive or negative from the firm perspective (Verhoef et al. 2007), because if the company integrates its multiple channels well enough, it can funnel research shoppers to its own purchasing point. However, research shopping also may cause companies to lose those customers who search the firm's Web sites and then buy at another retailer's store (Nunes and Cespedes 2003). In this study, we find that 64% of research shoppers are cross-channel free-riders who search for product information in online store(s) and purchase in a brick-and-mortar store of another retailer. Thus, the question of how to retain customers represents a crucial issue in multichannel environments.

Cross-channel free-riders appear to have great confidence in their ability to employ multiple channels. This confidence might create a problem for some businesses that consider heavy Internet users their target customers. According to the results of the Horrigan (2007), elite users of information and communication technologies, who also are heavy and frequent users of the Internet, are confident in their ability to manage the flow of electronic information that surrounds them. Members of this group include more men and young people who tend to have higher education levels and greater household income. Therefore, businesses should be particularly aware of the free-riding problem when the demographic characteristics of their target customers conform to those of heavy users of information technologies.

We also find that consumers tend to purchase in the store that offers high quality and low risk. Therefore, when service quality and risk represent the major concerns of a firm's target customers, managing free-riding behavior might be a real challenge. A transaction involving an expensive product generally appears more risky than one involving a cheap product (Ba and Pavlou 2002), so before purchasing an expensive product, consumers might do more research on the Web site to gain more product information; however, they also might prefer to purchase at the brick-and-mortar store. Companies that hope to discourage cross-channel free-riding behavior might attempt to invest in methods to increase

consumers' online trust to convert Web searchers into Web buyers (Chau et al. 2007).

Within-firm lock-in can create obstacles that prevent consumers from switching retailers. By increasing the switching costs associated with learning, set up, and loss of benefits, firms can reduce consumers' intention to change retailers. Learning costs represent especially important factors in electronic environments (Verhoef et al. 2007), so an easy-to-learn navigation design represents a significant asset for a Web site; it prompts customers to prefer to finish their consumption process through that site, then use it again subsequently to avoid the costs associated with learning about another site.

A Web site also can help retain customers by imposing set-up costs associated with customized services. For example, a customized Web site might enable customers to talk to firms electronically and receive responses tailored to their needs (Strauss and Frost 2001). When a customer invests time and effort to enter personal data into the site and explain his or her preferences to an electronic seller, he or she is unwilling to switch to other suppliers (Patterson and Smith 2003, Strauss and Frost 2001). Customized offers thereby enhance effectiveness and efficiency (Skarmees and Robson 2008) and can forge customer loyalty by creating psychological and economical barriers against terminating the relationship (Papadopoulou et al. 2001, Wilson 1995). For example, Amazon.com retains customers by offering one-click ordering and collaborative filtering technologies. Amazon customers who switch to another Web site must expend additional set-up costs to reenter their billing information and, perhaps more important, would lose access to the recommendations they receive from Amazon.

### 5.3. Limitations and further research

We note some limitations that should be considered when interpreting the results of the current study. First, we investigate only the behaviors associated with searching online and purchasing offline because most multichannel shoppers follow this path to complete transactions. However, searching offline and then purchasing online represents another kind of cross-channel free-riding, in which the offline store incurs opportunity costs, because its sales force could have assisted other buyers but instead is exploited by the free-riders (Van Baal and Dach 2005). Further research should explore such types of cross-channel free-riding. The second limitation is the problem of external validity, the ability to generalize the results outside the products in this study. Third, although more than half of the variance ( $SMC = .68$ ) in the cross-channel free-riding intention can be explained by the direct effects of the three factors (multichannel self-efficacy, within-firm lock-in, and the attractiveness of competitors' offline retail store). Other factors, such as the propensity for variety seeking (Bansal and Taylor 2002), may also influence customer behavior and can be examined in future research. Finally, the current study considers multichannel search and purchase choices as parts of a process in a cross-sectional study. Additional research might instead collect longitudinal data during the different stages of consumers' shopping process.

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