Channel Stickiness in the Shopping Journey for Electronics: Evidence from China and South Korea

Abstract

In today's era of multichannel marketing, shoppers routinely use multiple channels in a single shopping journey; however, many researchers also report a tendency among shoppers to stay in one channel throughout a shopping journey, a phenomenon we refer to as "channel stickiness". We investigate which determinants are linked to channel stickiness while accounting for individual characteristics. To this end, we compile and survey a variety of search behavior items. We then compare channel stickiness in two markets with differing levels of e-commerce experience: China (limited) and South Korea (extensive). Our results show that channel stickiness exists for simple products but not for complex ones. Channel stickiness manifests not only in markets in which shoppers have limited e-commerce experience but also in those with extensive experience. Offline search behavior is related to channel perception while online search behavior is related to content usage. Theoretical contributions and managerial implications are also discussed.

Keywords: channel stickiness, search behavior, shopping journey, multichannel shoppers

1. Introduction

The retail environment of today equips consumers with unprecedented capabilities to navigate product information and various buying options through a myriad of channels (Lemon & Verhoef 2016). Despite an explosion of studies on consumer behavior and company strategies in multichannel retailing (Heine & Berghaus 2014; Verhoef et al. 2015), relatively little research exists on the relationship between searches and subsequent purchases. For example, prior studies focus on shoppers' multichannel usage and how valuable they are (Neslin & Shankar 2009). However, defining multichannel shoppers and predicting their behavior remains a challenge. Further, emerging evidence shows that those using multiple channels are not consistently profitable customers (Kushwaha & Shankar 2013). Indeed, there are clear segments of the market and buying situations in which searches and purchases occur in the same channel (Schröder & Zaharia 2008). Some studies show that shoppers in these segments can be more valuable and loyal in this age of channel abundance (Heitz-Spahn 2013; Kushwaha & Shankar 2013). Thus, our goal in this study is to contribute to the extant literature by examining a shopping journey from searches to a purchase decision.

We study shoppers' tendency to stay in one channel — what we term channel stickiness — despite the availability of multiple channels. We especially focused on the relationship between search behaviors and choices of purchase channels. We study if search behavior itself, after controlling for other influences, is predictive of channel choices for purchases. If such a relationship exists, companies can design channel strategies to intercept consumers when they are in the process of making a purchase and guide them by using an appropriate channel strategy (Lemon & Verhoef 2016). To provide a structure for various types of search behavior, we categorize it as either offline or online, a classification often used in the multichannel literature (Verhoef et al. 2015). We can then conduct a systematic analysis to possibly link search behavior and choices of purchase channels.

For a deeper understanding, we further analyze the determinants of search behavior. That is, we look at which search behavior is related to which individual characteristics. To study this relationship, we examine the performance and technology risk of buying online (Forsythe & Shi 2003; Lim 2003) and also offline store affinity (Falk et al. 2007; Lemon & Verhoef 2016). Second, we predict that online behavior related to content consumption and generation explain search behavior. We focus on these content-related behaviors because they are not only easy to observe but also because the recent marketing literature (Fader & Winer 2012; Yoon 2018) also offers rich insights into content consumption and creation (Chu et al. 2019; Mazzucchelli et al. 2018). Lastly, we focus on the electronics category and select products associated with high perceived risk and high involvement (i.e., computers, tablets and smartphones) since consumers undertake extensive search processes before making purchases (Kushwaha & Shankar 2013). The data is obtained in China and South Korea (hereafter Korea). Chinese e-commerce is growing fast but shoppers there have relatively limited experience with e-commerce. Korea's e-commerce market has a considerably longer history (Deloitte Research 2017; Kim et al. 2002). The disparity in e-commerce experience yields interesting differences in the relationship between search behaviors and purchase channels.

Our findings are as follows. First, channel stickiness exists. With simple products (e.g., computers) offline searches lead to offline purchases and online searches to online purchases. We do not find channel stickiness for more complex products (e.g., smartphones with service contracts), implying that many consumers undertake multichannel shopping when buying such products. Second, affinity for offline channels and the perceived risk of online channels leads to offline searches whereas a greater amount of online content usage leads to more online searches. However, the latter is only observed in markets with extensive e-commerce experience. Thus, our study adds to the extant literature by highlighting the important yet under-researched phenomena of channel stickiness in an era of multichannel marketing.

2. Literature and Hypotheses

We investigate (1) the relationship between search behaviors and purchase channel choices and (2) the link between individual characteristics and search behaviors. We first reviewed the literature on general search behavior and subsequent channel choices, focusing on channel stickiness. Next, we introduce individual level constructs, drawing from the literature on consumers' channel perception and content usage. Finally, we compare two markets with different levels of e-commerce experience and how the previously mentioned links are manifest in those markets. Figure 1 outlines our conceptual framework with links to the hypotheses we propose in the corresponding subsections.

[Insert Figure 1 about here]

2.1 Channel stickiness: From search to purchase

Information search activities that occur before product purchases increase in both number and variety as information technology (IT) advances (Aoki et al. 2019; Lemon & Verhoef 2016). In addition to traditional search behaviors such as browsing in physical stores or watching commercials (Rigby 2011), more cultivated behaviors have recently appeared such as searching on mobile phones while shopping offline (Grewal et al. 2018; Sciandra et al. 2019) or asking for friends' opinions via instant messaging (Campbell 2018). In this study, we simplify our approach by categorizing them as either offline or online, an approach well-grounded in the field of multichannel literature. Our focus is the relationship between search and purchase channels along this dichotomy of offline and online.[1]

Although we are interested in consumers' decisions to stay in one type of channel, prior

[1] "Switching" can happen even when a consumer stays in an online (or offline) channel during search and purchase. For instance, a shopper can collect product information on a branded website such as ralphlauren.com and buy the item from a multi-brand online retailer such as zalando.de. However, in our study we only consider switching from online (offline) to offline (online) as channel switching.

studies have devoted much attention to channel switching behavior (Chou et al. 2016). This research focus has provided valuable insights. In the earlier years of development of the Internet as a retail and information channel, switching was viewed as opportunistic behavior that could undermine a company's profitability (e.g., free riding, Chiu et al. 2011), and thus was a practice to be discouraged. However, with advances in digital retail infrastructure and increasing consumer demand for access to multiple channels, it has become evident that the online and offline channels not only compete with each other but also complement each other (Pauwels et al. 2011; Wang & Goldfarb 2016). As such, many researchers study consumer decisions to switch between channels during searches and purchases (see Table 1 for the list of studies). Multichannel researchers also examine the types of customers who are likely to become multichannel shoppers and their worth to sellers (Konuş et al. 2008; Neslin & Shankar 2009; Verhoef et al. 2007).

The reasons to pay attention to channel stickiness throughout consumers' search and purchase are as follows. First, consumers who forgo the option of switching and stick to one channel can be valuable. This is because such consumers tend to be not only loyal to the channel but also to a brand (Balakrishnan et al. 2014). Second, it is easier to recognize a pattern in loyalty to a channel and form generalizations about it than to detect a pattern in channel switching and arrive at generalizations. With so many alternatives available to consumers, their channel switching can be a complex combination of behaviors (Gensler et al. 2017). Finally, channel stickiness is an understudied topic that can potentially provide immediate and actionable recommendations for practitioners. So far, only a handful of studies deal explicitly with loyalty to a channel (Frasquet et al. 2015).

This loyalty, or channel stickiness, can emerge in several ways. First, consumers may stay in one channel en route to a decision to avoid risk in changing to another channel. Second, consumers may be more used to one channel or another, making it difficult to use multiple

channels in the first place (Kushwaha & Shankar 2013). Inertia or laziness may also keep consumers from switching to another channel once they are placed in one ("consistency principle", Voorveld et al. 2016). For example, showrooming requires forgoing the instant gratification of owning products at physical stores but accepting the inconvenience of ordering online, waiting for a product, and tolerating the potential risk of having made a poor choice (Verhoef et al. 2007). Third, there may be a channel lock-in strategy that retailers may have designed to increase the difficulty of channel switching (Gensler et al. 2017). For instance, some retailers give away coupons applicable in only one channel (Rigby 2011). In this sense, multichannel shopping or channel switching can be seen as a disruption of the natural process of search behavior leading to a purchase in the same channel. If search behaviors match the buying situation, consumers are likelier to stick to the channel they are already invested in.

We propose that it is possible to predict channel stickiness — that is, consumers staying in one channel from search through purchase by observing search behaviors and related factors. Researchers on channel choice and switching behavior have investigated various predictors such as channel attributes (Verhoef et al. 2007), types of products (Heitz-Spahn 2013), purchase situations (Gensler et al. 2017), and consumer characteristics (Mcgoldrick & Collins 2007) (see Table 1 for an overview). The direct relationship between search behavior and choice of purchase channels has been investigated in a limited way by Voorveld et al. (2016). They find that an online search leads to an online purchase, but an offline search has no relationship with purchase channels. We build on their work and propose that channel stickiness is predictable. Further, because of the previously mentioned channel inertia, we hypothesize that consumers will display channel stickiness *both* offline and online (Schröder & Zaharia 2008). Although channel switching varies and does not form easily recognizable patterns (Avery et al. 2012), channel stickiness is easier to identify.

H_1: Channel stickiness (i.e., product search and purchase in the same channel) is predictable.

Product type is one of the most important aspects of channel choice in a shopping experience. Specifically, we focus on the complexity of the purchase process because with complexity, consumers will require more extensive searching across multiple channels. Technology products can be in goods (e.g., computers, smart TVs) or service formats (e.g., Netflix streaming, broadband plans). Some products are a combination of both, such as mobile phones with service contracts or an automobile lease service (Bar-Gill & Stone 2009). In the latter case, consumers may spend a longer time and exert greater effort in reaching the purchase stage because two distinct parts (goods and services) are involved, and often the service part is complicated (McCue 2019; Woo et al. 2019). Thus, in our research we investigate three products in the electronics category: computers, tablets, and smartphones. They share similarities as personal devices of high involvement; however, they vary in the degree of complexity in buying them. Computers are usually bought outright.[2] Smartphone purchases usually involve a binding contract. Tablets can be bought either alone or with a contract, and thus share the characteristics of both simple and complex products.

Because channel stickiness is a display of laziness when consumers can afford it, we will observe more of it when purchases involve less risk of post-purchase regret (Arora et al. 2017). More channel stickiness will be observed with simple products that typically involve nothing more complicated than comparing prices of products with well-defined attributes. Purchases of complex products that are combinations of goods and services may require researching the hardware in one channel (e.g., online retailers' website) and exploring service

[2] Computers also come with "service" element such as software licenses (e.g., MS Office Suite) or annual contracts (e.g., Antivirus programs). These are usually included in the package as part of the product and can be considered one of the product attributes. Smartphone contracts, however, is qualitatively different since they are as important if not more than the goods itself and involve binding contract that incurs considerable monthly fee (Bar-Gill and Stone 2009). We argue that in consumers' mind, smartphones are a product that has two distinct parts while computers are mostly goods with many attributes.

options in another channel (e.g., a salesperson at a brick-and-mortar store). Thus, we further hypothesize regarding the types of products as follows:

H_{1a}: Channel stickiness is prominent when the product is simple (e.g., computers).

H_{1b}: Channel stickiness is not prominent when the product is complex (e.g., tablets or smartphones).

2.2 The effect of consumer characteristics on search behavior

Search behavior is explained by individual characteristics (Hahn & Kim 2013). Following the related literature, we focus on channel perception and content usage.[3] We adopt the channel perception construct used by Chou et al. (2016) and measure individuals' tendencies toward offline and online channels. Content usage is included based on the premise that individuals' interests dictate their activities in a buying process (Lemon & Verhoef 2016; Woodside et al. 2019). It is measured by focusing on how consumers use the social communication part of various online content because nowadays a search process contains strong social aspects (Huang et al. 2009; Wang et al. 2012).

Channel perception. Channel perception consists of affinity toward an offline channel (offline affinity) and of perceived risk toward an online channel (online risk). Offline affinity can be observed in some consumers who prefer physical stores, notwithstanding the advantages of those online (Rohm & Swaminathan 2004). These consumers include those who are loyal to brands and stores (Konuş et al. 2008) and those who prefer to learn of high-involvement products through sales representatives (Molesworth & Suortti 2002). Thus, we associate offline affinity with customers inclined to search offline. To them, online risk is a

[3] Consumers' perception of risk is a multidimensional construct that captures the type and degree of expected loss resulting from the purchase and use of products/services (Law and Ng 2016; Murray and Schlacter 1990). Possible loss categories while using online as the purchase channel are financial, performance, psychological, social, and convenience loss (Arndt 1967; Forsythe and Shi 2003). Lim (2003) further identifies technology risk and vendor risk in the context of e-commerce. The subsequent studies investigate the risk perception and willingness to buy online (Dimoka et al. 2012), its interaction with trust (Lim 2003), and its relationship with the service outcome (Pires et al. 2004).

potential loss because of products that fail to meet expectations (Horton 1976) and also may also reflect a dislike of not being able to touch or feel products (Forsythe & Shi 2003) or a distrust of websites. Both subconstructs relate to deep-seated preferences that drive consumers to prefer an offline channel; thus, we conjecture that channel perception is related to offline channel stickiness. On the other hand, the lack of a strong preference for one channel over another does not indicate a preference for an online channel. Thus, channel perception will not be correlated with online channel stickiness.

Content usage. With increasing easy access to a wealth of online content, many studies have examined users' content usage behavior when explaining stock returns (Tirunillai & Tellis 2012), product sales (Duan et al. 2008), and subsequent content utilization behavior (Moe & Schweidel 2013). In following this steam of literature, we presume that online content usage is related to search behaviors occurring both offline and online. We identify two distinct patterns of content usage, one aimed at an unidentified mass ("broadcast content"; Barasch & Berger 2014) and the other targeting close or intimate others ("narrowcast content").[4] Broadcast content targets an anonymous audience and thus the contents are more likely about message sender (Halvorsen 2019). Narrowcast content is aimed toward close others and tends to be created with specific others in mind (Wang et al. 2012; Zhao & Xie 2011). Offline search behavior involves interactions with vivid stimuli and actual persons but online search behavior has to do with virtual stimuli and digital media-mediated communication. Accordingly, we hypothesize that content usage is predictive of online search behavior but not of offline search behavior.

H_2: Offline and online search behaviors are correlated with channel perception and

[4] We adopt the terminology used in Barasch & Berger (2014) and expand slightly the meaning of the terms. In the study, narrowcasting is used for a single audience and broadcasting for multiple audiences. In our study, we adapt the terms and use them for a limited known audience versus an unlimited unknown audience (also see Zhao & Xie 2011). We differentiate between these two content-generation behaviors because previous studies show that the motivation behind the action (Sepp et al. 2011; Wang et al. 2012) and the content of the message (Barasch & Berger 2014) differs based on the audience.

content usage.

H_{2a}: Offline search behavior is correlated with channel perception.

H_{2b}: Online search behavior is correlated with content usage.

2.4 The role of e-commerce experience (China and Korea)

The variety and amount of pre-purchase search activities may depend on market conditions, especially the collective cumulative technological experience of the market (eMarketer 2014). When a new infrastructure such as an electronic commerce platform is introduced in a formerly entirely brick-and-mortar economy, the market as a collective entity undergoes numerous failures, successes, deceptions, and trust building (Verhoef et al. 2015). The beginning may bring many premature attempts at business models and creation of crude scams that result in disappointments and mistrust. As experience accumulates, the overall market settles into a model that works and learns how to adjust expectations (Sun & Zhang 2006). This accumulated experience with e-commerce can determine how consumers use different channels for searches and purchases.

As such, we study two countries that have had differing levels of e-commerce experience although they are currently at similar stages of market maturity: China and Korea. Both are rapidly growing consumer markets in Asia with somewhat analogous cultural backgrounds (Kim et al. 2002), as measured by the Hofstede's scores (see Table A.1 of Web Appendix; Hofstede 1984). However, China and Korea started adopting e-commerce at different points in time, which results in a gap in their accumulated experience of e-commerce (Uncles 2010; Zipser et al. 2016). E-commerce development in Korea began in the early 2000s (Kim 2001), but in China, it began around 2010 (Deloitte Research 2017; Mackie 2011). This, in turn, affects the degree of channel stickiness and the relationship between individual tendencies and channel search behavior.

Specifically, consumers in countries with extensive e-commerce experience will display less channel stickiness. Channel stickiness can be because of high risk perception in one type of channel or a lack of experience with the online channel. This tendency will be higher in markets with limited e-commerce experience (Chang et al. 2017; Chou et al. 2016). As for search behavior, offline search behavior and its correlate (channel perception) will not differ across the two markets because they are similar in terms of offline (nonelectronic) commerce experience. However, online search behavior and their correlates (channel perception and content usage) will have closer relationships in markets with extensive e-commerce experience because such markets will have more established behavioral patterns in content usage and online searching. Thus, we hypothesize the country differences as follows.

H_3: Channel stickiness is more prominent in countries with limited e-commerce experience.

H_4: Offline and online search behaviors are correlated with channel perception and content usage but vary depending on e-commerce experience at the country level.

H_{4a}: Offline search behavior is correlated with channel perception regardless of e-commerce experience.

H_{4b}: Online search behavior is correlated with channel perception and content usage only in countries with extensive e-commerce experience.

3. Data and Measures

3.1 Data collection

An online survey was conducted in China and Korea in July 2015 in cooperation with a major global marketing research firm. We used a stratified multistage probability sampling design so that the responses would be representative of the population (see Table A.2 of Web

Appendix for their summary statistics). Those who purchased at least one product among computers, tablets, and smartphones within 12 months of the time of the survey are included in the final data, resulting in 718 respondents from China and 380 from Korea.

3.2 Variables for search and purchase

Respondents were asked to indicate whether they had bought any item among computers, tablets, and smartphones in the past 12 months. If they had, they were further asked if the purchases were made offline or online. An offline purchase is coded as 0, and online as 1. Next, the respondents were given a list of search behavior items to indicate which activities were done before each purchase, and each behavior was characterized as either offline or online. The search behavior items were compiled through an extensive search of related academic and trade sources.[5] We measure the intensity of each search behavior dimension (offline and online) by counting the number of checked items in those dimensions.

3.3 Variables for individual characteristics

Channel perception. Channel perception consists of two constructs: offline affinity and online risk.[6] Online risk measures if respondents prefer to touch and feel products before buying them to experience some product attribute or if they are unsure of product quality or

---

[5] Table B.1 in the Web Appendix shows the list of 20 items, along with the references. Offline and online search variables are defined as the average number of items chosen among a total of nine and eleven items, respectively. Tables B.2 and B.3 present the corresponding values and correlation matrices. In Table B.4, we ensure the reliability and the validity of the scales by conducting confirmatory factor analyses (CFA). The fit statistics include the goodness of fit index (GFI), the adjusted goodness of fit index (AGFI), the root mean residual (RMR), the normed fit index (NFI), and the root mean square error of approximation (RMSEA) (Segars and Grover 1993; Teo and Yu 2005). In our study, the values are 0.95, 0.94, 0.01, 0.58, 0.05, respectively, indicating a good fit of the model. The convergent validity for the constructs is supported, with all the factor loadings being significant at $p < .05$.

[6] See Tables C.1 – C.3 in the Web Appendix for the items and statistics. Items for online risk are adapted from Jacoby & Kaplan (1972) and Forsythe & Shi (2003), and those for offline affinity are from Lim (2003) and Ratnasingham & Kumar (2000). The values of GFI, AGFI, RMR, NFI, and RMSEA are 0.95, 0.93, 0.03, 0.76, and 0.05, respectively, indicating a good fit. The factor loadings are all significant at $p < .05$, supporting convergent validity. Note that the items are measured using a scale ranging from 0 (never) to 3 (daily).

brand authenticity in an e-commerce situation. As such, online risk captures respondents' belief in transaction security and trust toward a website. Offline affinity is measured by asking if it is easier to buy in actual stores, if consumers prefer to shop with friends, or if they prefer personal assistance.

Content usage. As described earlier in the literature review, online content usage consists of broadcast content usage and narrowcast content usage.[7] Broadcast content usage includes content consumption behavior such as how much time respondents spend with TV shows, movies, video clips, radio, or music streaming services online. It also measures user-generated content aimed at an unlimited mass and includes blogging or uploading multimedia content to bulletin board systems (BBS). In contrast, narrowcast content usage includes content-generating behavior targeting a limited known audience and includes instant messaging, emailing, and social networking.

3.4 Control variables

We include the degree of social interaction for each dimension — that is, offline-social and online-social behavior — because social influence is becoming an increasingly important part of retail strategy (Del et al. 2019; Kim et al. 2017). Behavior involving others is classified as being social.[8] To control for alternative explanations, we also included general online orientation and shopping behavior variables. The general online orientation is related to whether one's lifestyle is compatible with online activities: for example, if a delivery from online retailers fits conveniently into one's lifestyle. Technical aptitude measures how adept

---

[7] See Tables C.1 – C.3 in the Web Appendix for the items and statistics. As mentioned earlier, items for broadcast content and narrowcast content usage are adapted from Barasch & Berger (2014) and Leonardi et al. (2013). The values of GFI, AGFI, RMR, NFI, and RMSEA are 0.95, 0.93, 0.03, 0.76, and 0.05, respectively, indicating a good fit. The factor loadings are all significant at $p < .05$, supporting convergent validity. Note that, as with the previous ones, the items are measured using a scale ranging from 0 (never) to 3 (daily).

[8] See Table B.1 in the Web Appendix for the items on search behavior. These items, including social interactions, are the last three items in each dimension: offline-social behavior items are numbers 7 to 9, and online-social behavior items are numbers18 to 20.

respondents are at using online tools. The classification is provided in the Web Appendix (Table B.1).

As for general shopping behavior, respondents answered questions about the diversity of their purchase categories (variety of products bought over the past 12 months), proportion of durable products among all types, and the ratio of online shopping expenditures (frequency) to total shopping expenditures (frequency). Respondents' demographic data was also collected and includes such aspects as age, gender, marital status, annual household income, residential area, and educational background. The research firm confirmed that the sample represented well the overall population of electronics shoppers in China and Korea. Table A.1 in the Web Appendix shows their demographics.

4. Model-Free Evidence

We explore the main variables to obtain insights into the relationship between search behaviors and purchase channels (Table 2) and individual characteristics that may be related to search behaviors (Table 3). Both tables present summary statistics, first for the pooled data and then for each country.

[Insert Tables 2 and 3 about here]

4.1 Choices of purchase channels

Table 2 helps exploration of which dimension of search behavior is related to which purchase channel. To be specific, Panel [A] reports the ratio of purchase incidents that occurred online by product categories, and Panel [B] reports the intensity of the given search behavior, measuring the proportion of checked items in each dimension of search behavior. In terms of purchase channels, about one third are bought online; that is, 40%, 35%, and 30% of

the overall buyers of computers, tablets, and smartphones bought online. However, a cross-country comparison shows that these numbers differ dramatically between the two countries: In China, 25%, 26%, and 28% of the purchase incidents in the respective categories occur online, whereas for Korea, the corresponding numbers are 62%, 64%, and 35%. These are in line with recent reports that although China is the world's largest e-commerce market and consumers are increasingly purchasing online, physical stores continue to dominate (Zipser et al. 2016). The gap also represents the difference in the accumulated experience of e-commerce between the countries at the time of data collection (Shuyang et al. 2014). Notably, smartphones in Korea are bought offline more often than other electronic goods because of an accompanying mobile service contract that consumers prefer to discuss face-to-face with a representative (Ediket 2017).

In their search behavior, consumers show similar behavior for computers and tablets but not for smartphones. Specifically, consumers engage in fewer search activities for smartphone purchases, especially online. Again, because smartphone purchases are often tied with mobile service contracts, consumers start the search from a limited set of choices and generally engage in fewer pre-purchase search behaviors. There are some recognizable differences in the patterns between the countries. In general, consumers in Korea do more online searches. As for specific products, Korean consumers use offline and online channels for searching almost equally but online is used considerably more for tablets. Chinese consumers use offline channels considerably more to search for all types of products.

4.2 Determinants of search behaviors

Table 3 helps us examine the individual determinants of search behaviors without a formal model. Panel [A] summarizes search behavior in terms of average number of items in the two dimensions of search behavior (offline and online) picked by the subjects. The cross-

country comparison shows similar patterns as in the three-product category statistics from Table 2. That is, Chinese consumers search offline considerably more than Korean consumers, and the latter search online more than the former.

Panel [B] of Table 3 shows the average scores of each individual characteristic construct introduced in the literature. As for individual characteristics, the numbers can be interpreted meaningfully when compared across the countries. Korean consumers perceive higher online risk, showing that accumulated experience in e-commerce does not always reduce the perception of risk in using online channels. Chinese consumers prefer brick-and-mortar shops more than Koreans do. This is in line with the previous observations that they use offline stores more than 70% of the time for buying all three types of electronic goods. As for content usage, Korean consumers generate and consume both broadcast and narrowcast content significantly more than Chinese consumers do. The gap is especially greater for narrowcast content usage, indicating that Korean consumers use substantially more close-relationship communication.

5. Model

The model-free evidence reveals the overall relationship among the main variables. The formal relationships are investigated in the following model-based analyses. We investigate two related but distinct topics in this study. First, we analyze the relationship between search behavior and choice of purchase channel. Second, we investigate how individual characteristics are related to the categories of search behavior. We use two distinct models for these two topics. In the first step, we model the probability of choosing online instead of offline as the purchase channel for each purchase p in product category k, in country c. Specifically, we use a logistic regression model as follows:

$$\text{logit}(\pi_{ckp}) = \beta_{1,ck} \cdot \text{Offline}_{ckp} + \beta_{1,ck} \cdot \text{Online}_{ckp} + \beta_{0,ck} + K_{ck} \cdot \text{Controls}_{ckp} \quad (1)$$

where *c* identifies country (1=pooled, 2=China, and 3= Korea) and *k* identifies product category (1=computer, 2=tablet, and 3=smartphone). Controls_{ckp} is an array containing measures for observed heterogeneity in Table 3 (e.g., residential area, annual household income, education, etc.) and K_{ck} is the corresponding parameter vector.

In the second step, we use a count model to model the intensity of each dimension of search behavior at the individual level. We use four equations with the same explanatory variables but different dependent variables. The dependent variables are the intensities of each dimension of search behavior, measured as the number of different behaviors chosen. We assume that the intensity of each search dimension *d* by respondent *i* in country *c*, $\mathbf{y}_{cdi}$, is Poisson distributed with parameter λ_{cdi}. The model is as follows:

$y_{cdi} \sim \text{Poisson}(\lambda_{cdi})$, and

$$\log(\lambda_{cdi}) = \gamma_{1,cd} \cdot \text{OfflineAffinity}_{cdi} + \gamma_{2,cd} \cdot \text{OnlineRisk}_{cdi} + \quad (2)$$
$$\gamma_{3,cd} \cdot \text{BroadcastContent}_{cdi} + \gamma_{4,cd} \cdot \text{NarrowcastContent}_{cdi} +$$
$$\gamma_{0,cd} + \Phi_{cd} \cdot \text{Controls}_{cdi}$$

where *d* indicates the pre-purchase search dimension (1=offline, 2=online). The explanatory variables include constructs capturing individual tendencies and online behavior, as explained in the literature. Specifically, the effects of channel perception are captured by $\gamma_{1,cd}$ *and* $\gamma_{2,cd}$, respectively. The parameters $\gamma_{3,cd}$ and $\gamma_{4,cd}$ measure the effects of content usage. As in Equation (1), the vector of control variables is expressed as Controls_{cdi} and its corresponding vector is K_{cdi}. Note that the Poisson distribution assumption is appropriate for our setting because the intensities in the dimensions of search behavior are count data having similar values of means and variances (Agresti 2002).

6. Empirical Results

Tables 4 and 5 show the estimation results using the pooled and country-specific datasets, respectively.

[Insert Tables 4 and 5 about here]

6.1 Choices of purchase channels (H_1)

We first investigate the relationship between the categories of search behavior and the choices of purchase channels. In H_1, we hypothesize that channel stickiness is predictable. Specifically, in H_{1a} and H_{1b}, we hypothesize that channel stickiness varies depending on product complexity. Note that negative (positive) estimates for offline (online) search indicate a tendency to buy offline (online). The estimation results show that for computers, a simple product, channel stickiness appears in both online and offline channels ($\beta_{1,11} = -3.42$, $p < .00$; $\beta_{2,11} = 2.33$, $p < .05$). However, no such stickiness is found for smartphones, a typically complex product; the relationship is not significant for the offline channel and only marginally significant for the online channel ($\beta_{2,13} = 1.26$, $p < .10$), Thus, we accept H_1, H_{1a} and H_{1b}. Note that for tablets, which can be considered either a simple or complex purchase, channel stickiness is manifested for online ($\beta_{2,12} = 2.58$, $p < .05$) but not offline purchases. As expected, simple products do not require extensive searching, and consumers prefer to simplify the buying process. For complex products that require extensive searching, consumers tend to do multichannel shopping.

6.2 Determinants of search behaviors (H_2)

In the second stage of the analyses, we step back in the buying process and investigate the individual determinants of choosing one dimension of search behavior over another. Table

4, Panel [B], presents the results. We hypothesize in H_2 that offline search behavior is related to channel perception (H_{2a}), and online search behavior is related to content usage (H_{2b}). Channel perception consisted of offline affinity and online risk. The results show support for H_{2a} because offline search is significantly related to offline affinity ($\gamma_{1,11} = 0.11$, $p < .01$) and perceived online risk ($\gamma_{2,11} = 0.12$, $p < .01$). That is, consumers who prefer the offline channel and think an online transaction involves risk tend to do offline searches disproportionately more. Unsurprisingly, online search behavior is also significantly related to online risk ($\gamma_{2,12} = 0.15$, $p < .01$). This implies that when consumers feel the online channel impose risks, they not only increase their offline searches but also search online more to reduce such risks.

We expected online content usage to be related only to online search behavior (H_{2b}). As expected, offline search behavior does not show any correlation. Online search behavior is significantly related to broadcast content behavior ($\gamma_{3,12} = 0.15$, $p < .01$) and thus, we conclude that H_{2b} is supported. That is, the more consumers generate and consume reviews, blog posts, videos, and BBS posts, the likelier they will do online search behavior. Narrowcast content behavior is not related to online search behavior, indicating that the use of social network services is not predictive of online search.

6.3 Cross-country differences (H_3 and H_4)

Earlier, we noted that the two countries, China and Korea, differ in their cumulative experience of e-commerce at the market level. Specifically, Korea had at least a 10-year head start, although China has recently grown considerably in the use of e-commerce. In H_3, we postulate that channel stickiness is more prominent in a country with less e-commerce experience (i.e., China). The results do not support this hypothesis because, depending on the product and channel, the results vary (see Table 5). For instance, for simple products such as computers, both China and Korea display channel stickiness in the offline channel ($\beta_{1,21} = -$

5.12, $p < .00$; $\beta_{1,31} = -4.88$, $p < .01$) but only in China for the online channel ($\beta_{2,21} = 3.66$, $p < .05$). For complex products such as smartphones, China shows channel stickiness for the online channel ($\beta_{2,23} = 1.87$, $p < .05$) but Korea favors the offline channel only marginally ($\beta_{1,33} = -2.98$, $p < .10$). For an intermediate product such as a tablet, China displays channel stickiness only marginally ($\beta_{2,22} = 2.32$, $p < .10$) To summarize, Chinese consumers show stickiness in the offline channel for simple products, but choose the online channel for a variety of products. Koreans display offline stickiness for simple products but use multichannels when the product is complex. We conclude that accumulated market experience with e-commerce is not a direct predictor of channel stickiness.

In H_4, we postulated that channel search behavior and its antecedents have varying relationships, depending on the market-level e-commerce experience. H_{4a} links directly to H_{2a}, which states that offline search behavior is correlated with channel perception; we postulated that this relationship does not differ, depending on accumulated e-commerce experience. The results show that, indeed, both markets show significant relationships between channel perception and the amount of offline searching, giving support to H_{4a}. For China, both offline affinity ($\gamma_{1,21} = 0.15$, $p < .01$) and online risk ($\gamma_{2,21} = 0.13$, $p < .01$) showed significant and positive relationships, but for Korea, only online risk ($\gamma_{2,31} = 0.13$, $p < .01$) showed significant correlation with an offline search amount. This slight discrepancy may be because in markets with more e-commerce experience, offline affinity does not necessarily discourage consumers from making use of the online channel.

Finally, H_{4b} links directly to H_{2b}, which states that online search behavior is correlated with content usage; we postulated that this relationship is strong for markets with extensive experience with e-commerce. The results show that this is indeed the case (H_{4b} supported), because in Korea online search behavior is positively correlated with online risk perception ($\gamma_{2,32} = 0.27$, $p < .01$) and broadcast content ($\gamma_{3,32} = 0.17$, $p < .05$), but in China there are no

significant relationships. We explain that with more experience with e-commerce, online search behavior is better established and its patterns are readily recognized. Specifically, when there is higher online risk perception, experienced consumers increase their online searches to mitigate the risk. Also, online broadcast content usage is linked directly to online search behavior in markets with much e-commerce experience. Note that narrowcast content behavior is not linked to any type of search behavior.

7. Discussion and Conclusion

We first investigate the relationship between pre-purchase search behavior and the purchase channel and then the individual determinants of search behaviors. We also examine whether two markets with different amounts of e-commerce experience show discrepancies in channel stickiness and relationships. Our most revealing empirical finding is that channel stickiness can be predicted to some extent by what consumers do before their purchases. However, this predictability does not apply to channel switching. Using our empirical findings, we draw the following insights.

Purchase channels. We find support for channel stickiness. Specifically, the complexity of products determines how much consumers stick to one type of channel. If a product is relatively easy to compare and purchase, consumers tend to stick to one channel. However, if a product is a combination of goods and services and thus complex, consumers do not stick to one channel. Stickiness is not necessarily stronger for markets with limited e-commerce experience. Instead, markets with differing amounts of e-commerce experience display different patterns of stickiness, but not necessarily more or less of it.

Search behaviors. Fear of loss because of uncertainties in an online channel leads consumers to display certain patterns of search behavior. The fear that products bought on

online will not perform well leads consumers to search offline for information. Also, a strong preference for offline shops encourages offline searching. Curiously, in markets with extensive e-commerce experience such as Korea, perceived online risk encourages consumers to do more online searches rather than less. Online content usage, especially broadcast content such as BBS or blog posting, is predictive of online searching only for markets with extensive e-commerce experience. This is not true for narrowcast content. This suggests that online communication with an unlimited, unknown audience differs qualitatively from that with close others (Barasch & Berger 2014).

Channel stickiness. Previous studies show that channel switching within a shopping journey is difficult to predict and theorize (Frasquet et al. 2015). As a result, shopping behavior is typically characterized as random, unpredictable, and changeable (Konuş et al. 2008). This poses challenges for multichannel marketers but also highlights the importance of uncovering patterns where we can. Understanding channel stickiness can be valuable in this sense. By knowing the kind of consumers who tend to stay in one channel and the situations that lead to it, marketers can better design a multichannel strategy to serve this type of consumer. As previous studies show, the most valuable customers can be those who stay in one channel, and those who switch channels can be less loyal to the brand and the retailer (Kushwaha & Shankar 2013). By identifying the situation and the groups of customers who display channel stickiness, firms can devise plans to better serve them.

The insights from the individual determinants of search behavior offer a good guide for devising such a plan. Individual characteristics such as channel perception cannot be easily measured unless explicitly questioned. Our research reveals that the ensuing actions in terms of search behavior are highly related and can be deduced. Online content usage is relatively easy to observe (Tirunillai & Tellis 2012), and thus this data can be readily used to predict consumers' search behavior. A firm channel strategy can be designed to reflect an

understanding of different consumer characteristics and their channel behavior. Finally, we observed the choices of purchase channels across two countries with differing levels of e-commerce experience. This implies that, depending on the type of market a firm is operating in, managers should adapt their multichannel strategies (Ko et al. 2004).

8. Contributions, Implications and Future Research

8.1 Theoretical contributions

We contribute to the growing body of literature devoted to the investigation of multichannel market environments. So far, most of the previous studies have been focused on multichannel users and their contributions to firms (Neslin & Shankar 2009). Further, much of the investigation has been carried out to optimize firms' efforts to serve a segment of the market that uses the multiple channels of one firm (Montaguti et al. 2016). Our study adds to this stream of work by shedding light on other parts of the consumer base and on shopping situations in which shoppers stay in one channel despite many alternatives. We find that, given our framework and data, only channel stickiness patterns are predictable. Our study is also the first attempt to connect search behaviors and channel choices. The existing literature investigates correlations and determinants that lead to certain channel choices but — with a few exceptions — do not formally study if search channels can predict purchase channels (Voorveld et al. 2016). Our results are not only insightful but applicable for channel strategies because firms can deploy them wherever they encounter potential buyers.

8.2 Managerial implications

Our results show that shoppers act predictably in certain situations and thus multichannel strategies can be devised to better serve consumers in those situations. First, for simple

products not requiring extensive information, consumers tend to stick to one channel. For those shopping situations, channel lock-in strategies may be especially effective (Frasquet et al. 2015). In contrast, products that combine physical goods and services such as smartphones and contracts can benefit from a sound multichannel strategy in which online and offline channels complement each other to complete a purchase.

Second, in today's retail environment with its countless channels, it is crucial to intercept consumers in their searches for future purchases and base communications with them on an understanding of their behavior (Verhoef et al. 2015). Our research shows that in e-commerce markets with limited experience, uncertainty about online channels drives consumers offline to search for alternatives; however, in markets with extensive e-commerce experience, this uncertainty causes consumers to increase their searches across all channels. It is clear that in younger markets, consumers deal with their fears through avoidance, but in mature markets, consumers attempt to resolve uncertainty by undertaking more searches. Thus, in markets with a short e-commerce history, retailers with both offline and online stores should leverage their offline stores to cater to those consumers who exclusively search offline. It may help to use retail brand awareness to encourage the use of online stores (Huang et al. 2004) if the goal of the strategy is to "educate" consumers. In highly experienced e-commerce markets, retailers should focus on informing and addressing any concerns consumers have about online commerce. If the fear arises from uncertainty about product performance, it may help to include promotional videos or virtual showrooms in retail sites (Kelleher 2018; Kim et al. 2018). If the technology risk is the issue, the website can feature a live chat service to address immediate concerns cost effectively (Nizri 2018).

8.3 Limitations and directions for future research

Future research can improve on our study in several ways. First, we limit our

investigation to electronic durables. Although we gain a deeper understanding of this industry and control for differing product characteristics, it may add to the understanding of the phenomena to investigate different types of products, such as experience goods. Second, we rely for our analysis on survey data that are subject to recall accuracy and the conscientiousness of the respondents. In future studies, data can be collected directly through purchase data to verify our findings. Third, new ways of gaining information on products are constantly being introduced. For instance, shopping assistance using artificial intelligence is becoming more sophisticated and beginning to be used extensively (Nizri 2018). Devices with augmented reality are being tested for online shopping assistance (Hilken et al. 2017). Moreover, various devices, including mobile phones, are increasingly being used for shopping assistance (Kim et al. 2017; Soni et al. 2019). Accordingly, there may be more relevant ways to classify search behavior than those we have explored in this study.

References

Agresti, A. (2002). *Categorical data analysis (2nd ed.).* New York: John Wiley & Sons.

Aoki, K., Obeng, E., Borders, A. L., Lester, D. H. (2019). Can brand experience increase customer contribution: How to create effective sustainable touchpoints with customers? *Journal of Global Scholars of Marketing Science*, *29*(1), 51–62.

Arndt, J. (1967). Role of product-related conversations in the diffusion of a new product. *Journal of Marketing Research*, *4*(3), 291–295.

Arora, S., & Sahney, S. (2018). Antecedents to consumers' showrooming behaviour: An integrated TAM-TPB framework. *Journal of Consumer Marketing*, *35*(4), 438–450.

Arora, S., Singha, K., & Sahney, S. (2017). Understanding consumer's showrooming behaviour: Extending the theory of planned behaviour. *Asia Pacific Journal of Marketing and Logistics*, *29*(2), 409–431.

Avery, J., Steenburgh, T. J., Deighton, J., & Caravella, M. (2012). Adding bricks to clicks: Predicting the patterns of cross-channel elasticities over time. *Journal of Marketing*, *76*(3), 96–111.

Balakrishnan, A., Sundaresan, S., & Zhang, B. (2014). Browse-and-switch: Retail-online competition under value Uncertainty. *Production and Operations Management*, *23*(7), 1129–1145..

Bar-Gill, O., & Stone, R. (2009). Mobile misperceptions. *Harv. JL & Tech.*, *23*(1), 49.

Barasch, A., & Berger, J. (2014). Broadcasting and narrowcasting: How audience size affects what people share. *Journal of Marketing Research*, *51*(3), 286–299.

Campbell, R. (2018). Bridging the gap between consumers and brands with the WOM protocol. *Forbes*. Retrieved from https://www.forbes.com/sites/rebeccacampbell1/2018/10/29/bridging-the-gap-between-consumers-and-brands-with-the-wom-protocol/#594062da75c5.

Chang, H. H., Wong, K. H., & Li, S. Y. (2017). Applying push-pull-mooring to investigate channel switching behaviors: M-shopping self-efficacy and switching costs as moderators. *Electronic Commerce Research and Applications*, *24*, 50–67.

Chiou, J. S., Chou, S. Y., & Shen, G. C. C. (2017). Consumer choice of multichannel shopping. *Internet Research*, *27*(1), 2–20.

Chiu, H. C., Hsieh, Y. C., Roan, J., Tseng, K. J., & Hsieh, J. K. (2011). The challenge for multichannel services: Cross-channel free-riding behavior. *Electronic Commerce Research and Applications*, *10*(2), 268–277.

Chou, S. Y., Shen, G. C., Chiu, H. C., & Chou, Y. T. (2016). Multichannel service providers' strategy: Understanding customers' switching and free-riding behavior. *Journal of Business Research*, *69*(6), 2226–2232.

Chu, S., Kamal, S., & Kim, Y. (2019). Re-examining of consumers' responses toward social media advertising and purchase intention toward luxury products from 2013 to 2018: A retrospective commentary. *Journal of Global Fashion Marketing*, *10*(1), 81–92.

Cortiñas, M., Chocarro, R., & Villanueva, M. L. (2010). Understanding multi-channel banking customers. *Journal of Business Research*, *63*(11), 1215–1221.

Del, M., Bonilla, R., Luis, J., Andreu, D. (2019). The interaction of Instagram followers in the fast fashion sector: The case of Hennes and Mauritz (H&M). *Journal of Global Fashion Marketing*, *10*(4), 342–357.

Deloitte Research. (2017). China e-retail market report 2016. *Deloitte*. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/cn/Documents/cip/deloitte-cn-cip-china-online-retail-market-report-en-170123.pdf.

Dimoka, A., Hong, Y., & Pavlou, P. A. (2012). On product uncertainty in online markets: Theory and evidence. *MIS Quarterly*, *36*(2), 395.

Duan, W., Gu, B., & Whinston, A. B. (2008). The dynamics of online word-of-mouth and product sales–An empirical investigation of the movie industry. *Journal of Retailing*, *84*(2), 233–242.

Ediket. (2017). How to get a Korean phone contract. *A Medium Corporation*. Retrieved from https://medium.com/@Ediket/how-to-get-a-korean-phone-contract-3a8cea3d6f8e.

eMarketer. (2014). The state of omnichannel retail: Retailers playing catch-up with consumers. *eMarketer*. Retrieved from http://www.emarketer.com/public_media/docs/state_of_omnichannel_retail.pdf.

Fader, P. S., & Winer, R. S. (2012). Introduction to the special issue on the emergence and impact of user-generated content. *Marketing Science*, *31*(3), 369–371.

Falk, T., Schepers, J., Hammerschmidt, M., & Bauer, H. H. (2007). Identifying cross-channel dissynergies for multichannel service providers. *Journal of Service Research*, *10*(2), 143–160.

Forsythe, S. M., & Shi, B. (2003). Consumer patronage and risk perceptions in Internet shopping. *Journal of Business Research*, *56*(11), 867–875.

Frambach, R. T., Roest, H. C. A., & Krishnan, T. V. (2007). The impact of consumer Internet experience on channel preference and usage intentions across the different stages of the buying process. *Journal of Interactive Marketing*, *21*(2), 26–41.

Frasquet, M., Mollá, A., & Ruiz, E. (2015). Identifying patterns in channel usage across the search, purchase and post-sales stages of shopping. *Electronic Commerce Research and Applications*, *14*(6), 654–665.

Gensler, S., Neslin, S. A., & Verhoef, P. C. (2017). The showrooming phenomenon: It's more than just about price. *Journal of Interactive Marketing*, *38*, 29–43.

Grewal, D., Ahlbom, C.-P., Beitelspacher, L., Noble, S. M., & Nordfält, J. (2018). In-store mobile phone use and customer shopping behavior: Evidence from the field. *Journal of Marketing*, *82*(4), 102–126.

Hahn, K. H. Y., & Kim, J. (2013). Salient antecedents of mobile shopping intentions: Media dependency, fashion/brand interest and peer influence. *Journal of Global Fashion Marketing*, *4*(4), 225–246.

Halvorsen, K. (2019). A retrospective commentary: How fashion blogs function as a marketing tool to influence consumer behavior: Evidence from Norway. *Journal of Global Fashion Marketing*, *10*(4), 398–403.

Heine, K., & Berghaus, B. (2014). Luxury goes digital: How to tackle the digital luxury brand–consumer touchpoints. *Journal of Global Fashion Marketing*, *5*(3), 223–234.

Heitz-Spahn, S. (2013). Cross-channel free-riding consumer behavior in a multichannel environment: An investigation of shopping motives, sociodemographics and product categories. *Journal of Retailing and Consumer Services*, *20*(6), 570–578.

Hilken, T., Ruyter, K. De, Chylinski, M., Mahr, D., Keeling, D. I. (2017). Augmenting the eye of the beholder: Exploring the strategic potential of augmented reality to enhance online service experiences. *Journal of the Academy of Marketing Science*, *45*(6), 884–905.

Hofstede, G. (1984). Cultural dimensions in management and planning. *Asia Pacific Journal of Management*, *1*(2), 81–99.

Horton, R. L. (1976). The structure of perceived risk: Some further progress. *Journal of the Academy of Marketing Science*, *4*(4), 694–706.

Huang, P., Lurie, N. H., & Mitra, S. (2009). Searching for experience on the web: An empirical examination of consumer behavior for search and experience goods. *Journal of Marketing*, *73*(2), 55–69.

Huang, W., Schrank, H., & Dubinsky, A. J. (2004). Effect of brand name on consumers' risk perceptions of online shopping. *Journal of Consumer Behaviour*, *4*(1), 40–50.

Jacoby, J., & Kaplan, L. B. (1972). The components of perceived risk. In *Proceedings of the Third Annual Conference of the Association for Consumer Research*, M. Venkatesan, ed. Chicago: Association for Consumer Research, 382–93.

Kelleher, K. (2018). Walmart's 3D virtual showroom aims to furnish college dorms. *Fortune*. Retrieved from https://fortune.com/2018/06/28/walmart-3d-virtual-showroom/.

Kim, J. O., Forsythe, S., Gu, Q., & Moon, S. (2002). Cross-cultural consumer values, needs and purchase behavior. *Journal of Consumer Marketing*, *19*(6), 481–502.

Kim, J., Kim, M., Choi, J., & Trivedi, M. (2019). Offline social interactions and online shopping demand: Does the degree of social interactions matter? *Journal of Business Research*, *99*(C), 373–381.

Kim, J., Kang, S., & Taylor, C. R. (2018). Technology driven experiences from mobile direct to virtual reality. *Journal of Global Scholars of Marketing Science*, *9159*, 1–7.

Kim, M., Kim, J., Choi, J., & Trivedi, M. (2017). Mobile shopping through applications: Understanding application possession and mobile purchase. *Journal of Interactive Marketing*, *39*, 55–68.

Kim, S. (2001). Korea's e-commerce: Present and future. *Asia-Pacific Review*, *8*(1), 75–85.

Ko, H., Jung, J., Kim, J., & Shim, S. W. (2004). Cross-cultural differences in perceived risk of online shopping. *Journal of Interactive Advertising*, *4*(2), 20–29.

Konuş, U., Verhoef, P. C., & Neslin, S. A. (2008). Multichannel shopper segments and their covariates. *Journal of Retailing*, *84*(4), 398–413.

Kushwaha, T., & Shankar, V. (2013). Are multichannel customers really more valuable? The moderating role of product category characteristics. *Journal of Marketing*, *77*(July), 67–85.

Law, M., & Ng, M. (2016). Age and gender differences: Understanding mature online users with the online purchase intention model. *Journal of Global Scholars of Marketing Science*, *26*(3), 248–269.

Lemon, K. N., & Verhoef, P. C. (2016). Understanding customer experience throughout the customer journey. *Journal of Marketing*, *80*(6), 69–96.

Leonardi, P. M., Huysman, M., & Steinfield, C. (2013). Enterprise social media: Definition, history, and prospects for the study of social technologies in organizations. *Journal of Computer-Mediated Communication*, *19*(1), 1–19.

Lim, N. (2003). Consumers' perceived risk: sources versus consequences. *Electronic Commerce Research and Applications*, *2*(3), 216–228.

Mackie, N. (2011). Online shopping is growing rapidly in China. *BBC*. Retrieved from https://www.bbc.com/news/business-14679595.

Mau, S., Cvijikj, I. P., & Wagner, J. (2015). From research to purchase: An empirical analysis of research-shopping behaviour in the insurance sector. *Zeitschrift f¨ur die*

gesamte Versicherungswissenschaft, *104*(5), 573–593.

Mazzucchelli, A., Chierici, R., Ceruti, F., Chiacchierini, C., Godey, B., Pederzoli, D. (2018). Affecting brand loyalty intention: The effects of UGC and shopping searches via Facebook. *Journal of Global Fashion Marketing*, *9*(3), 270–286.

McCue, T. (2019). Here's how to save a bunch of money on your cell phone bill. *Forbes*. Retrieved from https://www.forbes.com/sites/tjmccue/2019/05/03/heres-how-to-save-a-bunch-of-money-on-your-cell-phone-bill/#52c6dd2b5395.

Mcgoldrick, P. J., & Collins, N. (2007). Multichannel retailing: Profiling the multichannel shopper. *The International Review of Retail, Distribution and Consumer Research*, *17*(2), 139–158.

Moe, W. W., & Schweidel, D. A. (2013). Online product opinions: Incidence, evaluation, and evolution. *Marketing Science*, *31*(3), 372–386.

Molesworth, M., & Suortti, J.-P. (2002). Buying cars online: The adoption of the web for high-involvement, high-cost purchases. *Journal of Consumer Behaviour*, *2*(2), 155–168.

Montaguti, E., Neslin, S. A., & Valentini, S. (2016). Can marketing campaigns induce multichannel buying and more profitable customers? A field experiment. *Marketing Science*, *35*(2), 201–217.

Murray, K. B., & Schlacter, J. L. (1990). The impact of services versus goods on consumers' assessment of perceived risk and variability. *Journal of the Academy of Marketing Science*, *18*(1), 51–65.

Neslin, S. A., & Shankar, V. (2009). Key issues in multichannel customer management: Current knowledge and future directions. *Journal of Interactive Marketing*, *23*(1), 70–81.

Nizri, G. (2018). How IT service management can be transformed with intelligent chatbots. *Forbes*. Retrieved from https://www.forbes.com/sites/forbestechcouncil/2018/11/05/how-it-service-management-can-be-transformed-with-intelligent-chatbots/#78d8473e677a.

Pauwels, K., Leeflang, P. S. H., Teerling, M. L., & Huizingh, K. R. E. (2011). Does online information drive offline revenues? Only for specific products and consumer segments! *Journal of Retailing*, *87*(1), 1–17.

Pires, G., Stanton, J., & Eckford, A. (2004). Influences on the perceived risk of purchasing online. *Journal of Consumer Behaviour*, *4*(2), 118–131.

Pookulangara, S., Hawley, J., & Xiao, G. (2011). Explaining consumers' channel-switching behavior using the theory of planned behavior. *Journal of Retailing and Consumer Services*, *18*(4), 311–321.

Ratnasingham, P., & Kumar, K. (2000). Trading partner trust in electronic commerce participation. In *Proceedings of the twenty first international conference on Information systems* (pp. 544–552). Association for Information Systems.

Rigby, D. K. (2011). *The future of shopping*. *Harvard Business Review*, *89*(12), 65-76.

Rohm, A. J., & Swaminathan, V. (2004). A typology of online shoppers based on shopping motivations. *Journal of Business Research*, *57*(7), 748–757.

Schröder, H., & Zaharia, S. (2008). Linking multi-channel customer behavior with shopping motives: An empirical investigation of a German retailer. *Journal of Retailing and Consumer Services*, *15*(6), 452–468.

Sciandra, M. R., Inman, J. J., & Stephen, A. T. (2019). Smart phones, bad calls? The influence of consumer mobile phone use, distraction, and phone dependence on adherence to shopping plans. *Journal of the Academy of Marketing Science*, *47*(4), 574–

594.

Segars, A. H., & Grover, V. (1993). Re-examining perceived ease of use and usefulness: A confirmatory factor analysis. *MIS Quarterly*, *17*(4), 517.

Sepp, M., Liljander, V., & Gummerus, J. (2011). Private bloggers' motivations to produce content – A gratifications theory perspective. *Journal of Marketing Management*, *27*(13–14), 1479–1503.

Shuyang, C., Meng, S., & Haotong, L. (2014). The comparative study between China and South Korea on online shopping. In *2014 International Conference on Management of e-Commerce and e-Government (ICMeCG)* (pp. 16–19).

Soni, M., Jain, K., & Kumar, B. (2019). Factors affecting the adoption of fashion mobile shopping applications. *Journal of Global Fashion Marketing*, *10*(4), 358–376.

Sun, H., & Zhang, P. (2006). The role of moderating factors in user technology acceptance. *International Journal of Human Computer Studies*, *64*(2), 53–78.

Teo, T. S. H., & Yu, Y. (2005). Online buying behavior: A transaction cost economics perspective. *Omega*, *33*(5), 451–465.

Tirunillai, S., & Tellis, G. J. (2012). Does chatter really matter? Dynamics of user-generated content and stock performance. *Marketing Science*, *31*(2), 198–215.

Uncles, M. D. (2010). Retail change in China: Retrospect and prospects. *The International Review of Retail, Distribution and Consumer Research*, *20*(1), 69–84.

Verhoef, P. C., Kannan, P. K., & Inman, J. J. (2015). From multi-channel retailing to omni-channel retailing: Introduction to the special issue on multi-channel retailing. *Journal of Retailing*, *91*(2), 174–181..

Verhoef, P. C., Neslin, S. A., & Vroomen, B. (2007). Multichannel customer management: Understanding the research-shopper phenomenon. *International Journal of Research in Marketing*, *24*(2), 129–148.

Voorveld, H. A. M., Smit, E. G., Neijens, P. C., & Bronner, A. E. (2016). Consumers' cross-channel use in online and offline purchases: An analysis of cross-media and cross-channel behaviors between products. *Journal of Advertising Research*, *56*(4), 385–400.

Wang, K., & Goldfarb, A. (2016). Can offline stores drive online sales? *Journal of Marketing Research*, *54*(5), 706–719

Wang, X., Yu, C., & Wei, Y. (2012). Social media peer communication and impacts on purchase intentions: A consumer socialization framework. *Journal of Interactive Marketing*, *26*(4), 198–208.

Woo, H., Kim, K. H., Kim, S. J., Wang, H. (2019). Service innovations' roles in long-term relationships with business customers. *Journal of Global Scholars of Marketing Science*, *29*(4), 457–469.

Woodside, A. G., & Bernal Mir, P. (2019). Clicks and purchase effects of an embedded, social-media, platform endorsement in internet advertising platform endorsement in internet advertising. *Journal of Global Scholars of Marketing Science*, *29*(3), 343–357.

Yoon, S. (2018). Social-cultural-psychological perspectives on future word-of-mouth research. *Journal of Global Scholars of Marketing Science*, *28*(2), 166–174.

Zhao, M., & Xie, J. (2011). Effects of social and temporal distance on consumers' responses to peer recommendations. *Journal of Marketing Research*, *48*(3), 486–496.

Zipser, D., Chen, Y., & Gong, F. (2016). McKinsey consumer report - The modernization of the Chinese consumer. *McKinsey & Company China Consumer Report*, (March), 1–18.

Table 1. Literature for channel switching and stickiness

	Channel behavior	Determinants	Product categories
Frambach et al. (2007)	Both	Internet experience, offline experience, channel accessibility, channel attitude	Complex services (home mortgages)
Mcgoldrick & Collins (2007)	Switching	Channel attributes, category, demographics	Grocery, apparel, home entertainment
Verhoef et al. (2007)	Switching	Channel attributes, channel attitudes	Financial products, experience goods, computers, apparel
Konuş et al. (2008)	Both	Psychographics, demographics	Various (24 categories)
Schröder & Zaharia (2008)	Stickiness	Consumer orientation, motives, risk aversion	Shopping in general
Cortiñas et al. (2010)	Switching	Adoption and use of financial products	Financial products
Pookulangara et al. (2011)	Switching	Hedonic and utilitarian beliefs toward retail channels, self-efficacy, subjective norms	Shopping in general (categorized by hedonic and utilitarian products)
Heitz-Spahn (2013)	Switching	Shopping motives, sociodemographic, categories	Various (6 categories)
Mau et al. (2015)	Switching	Consumer and policy characteristics	Insurance
Chou et al. (2016)	Switching	Perceived risk, switching costs	Shopping in general
Voorveld et al. (2016)	Both	First versus repeat purchase, product involvement, search versus experience products	Various (44 categories)
Chiou et al. (2017)	Switching	Customer-salesperson relationships, attitude toward online shopping	Cosmetics
Gensler et al. (2017)	Switching	Channel perception, contextual factors	Various (10 categories)
Chang et al. (2017)	Switching	Self-efficacy, attractiveness of stores, switching costs	Shopping in general
Arora & Sahney (2018)	Switching	Perceived benefit, perceived ease, online trust	Shopping in general

Table 2. Basic statistics for purchase channel analyses

[A] Dependent variables: Purchase channel

	Pooled			China			Korea		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Computer	232	0.40	0.49	138	0.25	0.44	94	0.62	0.49
Tablet	244	0.35	0.48	188	0.26	0.44	56	0.64	0.48
Smartphone	487	0.30	0.46	377	0.28	0.45	110	0.35	0.48

Note: Online purchase is coded as 1 and offline as 0.

[B] Independent variables: Search behaviors

	Pooled		China		Korea	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Computer						
Offline search	0.25	0.19	0.28	0.18	0.21	0.20
Online search	0.20	0.19	0.19	0.18	0.22	0.20
Tablet						
Offline search	0.25	0.18	0.25	0.18	0.24	0.18
Online search	0.20	0.17	0.19	0.16	0.27	0.19
Smartphone						
Offline search	0.23	0.18	0.24	0.18	0.21	0.18
Online search	0.16	0.16	0.16	0.15	0.19	0.19

Note: The intensity of search behavior is measured as the proportion of checked items in each search behavior dimension.

Table 3. Basic statistics for search behavior analyses

[A] Dependent variables: Search behaviors

	Pooled		China		Korea	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Offline search	1.97	1.52	2.12	1.53	1.68	1.46
Online search	1.62	1.63	1.50	1.53	1.84	1.78

Note: The dataset includes 718 respondents from China and 380 from Korea. Offline and online search variables are defined as the average number of items chosen among a total of nine and 11 items, respectively.

[B] Independent variables: Individual characteristics

	Pooled		China		Korea	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Channel perception [a]						
Offline affinity	0.44	0.61	0.46	0.62	0.41	0.58
Online risk	0.62	0.60	0.61	0.57	0.65	0.65
Content usage [a]						
Broadcast content	1.52	0.64	1.49	0.63	1.57	0.65
Narrowcast content	2.07	0.76	1.91	0.78	2.37	0.60
Controls: Degree of social interaction						
Proportion of social interaction offline	0.46	0.38	0.45	0.37	0.48	0.40
Proportion of social interaction online	0.15	0.26	0.13	0.26	0.17	0.27
Controls: General online orientation [a]						
Online lifestyle	0.47	0.66	0.39	0.61	0.62	0.72
Technical aptitude	0.14	0.38	0.15	0.37	0.11	0.39
Controls: General shopping behavior						
Purchase category diversity	8.88	4.81	8.91	4.99	8.82	4.45
Proportion of durable products	0.41	0.20	0.44	0.20	0.35	0.17
Ratio of online to total [b]	0.29	0.28	0.23	0.28	0.38	0.27

Note: [a] The constructs are measured as the average score across items constituting each construct, measured on a three-point scale. [b] The variable is defined as the ratio of online shopping frequency to total shopping frequency.

Table 4. Estimation results with pooled data

[A] Purchase channel

	Computer		Tablet		Smartphone	
	Est.	S.E.	Est.	S.E.	Est.	S.E.
Search behaviors						
Offline search	-3.42**	1.00	-1.57+	0.94	-0.35	0.64
Online search	2.33*	1.02	2.58*	1.03	1.26+	0.73
Controls: Degree of social interaction						
Proportion of social interaction offline	0.08	0.44	0.39	0.42	-0.59*	0.30
Proportion of social interaction online	-0.31	0.80	-1.84*	0.81	1.01*	0.46
Controls: Demographics						
Age	-0.36*	0.16	-0.24	0.17	-0.04	0.11
Urban	0.06	0.33	0.32	0.31	0.07	0.21
High income	0.92**	0.35	-0.02	0.32	0.28	0.22
University or higher	-0.32	0.35	-0.05	0.36	0.40+	0.24
Female	-0.85*	0.35	-0.76*	0.33	-0.63**	0.22
Married	0.45	0.39	0.10	0.38	-0.02	0.26
Country [a]	-1.76**	0.35	-1.74**	0.39	-0.24	0.26
Constant	1.93**	0.68	1.52*	0.74	-0.59	0.50
Log-likelihood	-83.40		-99.19		-184.53	

Note: [a] Country is coded as 1 if Korea and 0 if China. **, * and + indicate significance at $p<0.01$, $p < .05$ and $p < .10$, respectively.

[B] Search behavior

	Offline search		Online search	
	Est.	S.E.	Est.	S.E.
Channel perception				
Offline affinity	0.11**	0.03	0.03	0.04
Online risk	0.12**	0.04	0.15**	0.04
Content usage				
Broadcast content	0.02	0.04	0.11*	0.05
Narrowcast content	-0.04	0.04	-0.01	0.04
Controls: Degree of social interaction				
Proportion of social interaction [a]	-0.18**	0.06	0.35**	0.09
Controls: General online orientation				
Online lifestyle	0.08*	0.03	0.13**	0.03
Technical aptitude	0.09	0.06	0.14*	0.06
Controls: General shopping behavior				
Purchase category diversity	0.02**	0.00	0.02**	0.01
Proportion of durable products	0.04	0.12	0.02	0.14
Ratio of online to total	-0.30**	0.08	0.11	0.09
Controls: Demographics				
Age	-0.03	0.02	-0.08**	0.02
Urban	0.04	0.05	-0.02	0.05
High income	0.02	0.05	0.01	0.05
University or higher	-0.05	0.05	0.07	0.05
Female	-0.02	0.05	-0.13*	0.05
Married	0.10+	0.06	0.01	0.06
Constant	0.54**	0.15	0.82**	0.18
Log-likelihood	-1514.21		-1273.88	

Note: [a] Proportion of social search is computed as the proportion of items with social nature among respective channel search behaviors (i.e., offline and online). For the full list of items, see Table B.1 of Web Appendix. **, * and + indicate significance at $p<0.01$, $p < .05$ and $p < .10$, respectively.

Table 5. Estimation results with country-specific data

[A] Purchase channel

	Computer		Tablet		Smartphone	
	China	Korea	China	Korea	China	Korea
Search behavior						
Offline search	-5.12**	-4.88*	-1.18	-2.73	0.40	-2.98+
Online search	3.66*	4.10	2.32+	3.60	1.87*	0.23
Controls: Degree of social interaction						
Proportion of social interaction offline	-0.12	1.56	0.72	-0.54	-0.58	-0.93
Proportion of social interaction online	0.55	-2.63	-1.70	-1.61	1.01+	1.13
Controls: Demographics						
Age	-0.79*	0.06	-0.29	-0.15	-0.01	-0.12
Urban	0.18	-0.69	0.22	1.46	0.05	0.08
High income	0.85+	1.75*	0.02	-0.12	0.35	0.06
University or higher	-0.27	-1.54+	-0.08	-0.55	0.35	0.71
Female	-0.58	-1.01	-0.74+	-0.62	-0.63*	-1.00*
Married	0.70	1.83*	-0.09	0.87	0.01	-0.15
Constant	1.39	0.01	-0.12	0.92	-1.25*	0.73
Log-likelihood	-63.35	-29.58	-99.44	-30.33	-208.99	-62.57

Note: For the full version of estimation results, including standard errors, see Table D.1 of Web Appendix. **, * and + indicate significance at $p<0.01$, $p < .05$ and $p < .10$, respectively.

[B] Search behavior

	Offline search		Online search	
	China	Korea	China	Korea
Channel perception				
Offline affinity	0.15**	-0.04	0.03	-0.02
Online risk	0.13**	0.14*	0.09	0.27**
Content usage				
Broadcast content	0.01	0.04	0.11+	0.17*
Narrowcast content	0.00	-0.03	-0.03	-0.02
Controls: Degree of social interaction				
Proportion of social interaction	-0.10	-0.32**	0.32**	0.33*
Controls: General online orientation				
Online lifestyle	0.15**	0.02	0.18**	0.02
Technical aptitude	0.08	0.11	0.15+	0.16+
Controls: General shopping behavior				
Purchase category diversity	0.01*	0.03**	0.02**	0.01
Proportion of durable products	-0.09	0.18	0.22	-0.10
Ratio of online to total	-0.23*	-0.37*	0.21+	-0.13
Controls: Demographics				
Age	0.00	-0.04	-0.04	-0.12**
Urban	0.05	0.02	0.04	-0.11
High income	-0.01	0.00	0.04	-0.01
University or higher	-0.03	-0.03	-0.02	0.20*
Female	0.03	-0.15+	-0.08	-0.17*
Married	0.09+	0.12	-0.08	0.08
Constant	0.50**	0.41	0.51*	1.12**
Log-likelihood	-1026.17	-475.05	-779.53	-481.52

Note: For the full version of estimation results, including standard errors, see Table D.2 of Web Appendix. **, * and + indicate significance at $p<0.01$, $p < .05$ and $p < .10$, respectively.

Figure 1. Conceptual framework