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EMPIRICAL ARTICLE

Understanding shopping routes of offline purchasers: selection of search-channels (online vs. offline) and search-platforms (mobile vs. PC) based on product types

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Abstract
With the advent of the Internet and mobile technologies, shopping behavior has become increasingly complex due to the variety of channels providing consumers with various options to search and buy. However, contrary to our common belief, offline channels (compared to online channels) are still considered consumers' preferred purchasing routes. In fact, bricks-and-mortar stores continue to function as the hub of value propositions of the retail industry. Accordingly, we take a closer look at the shopping behavior of offline shoppers. Focusing specifically on the search stage of these consumers, this study investigates the effects of shopping motives on (1) the choice of search channel (online vs. offline), (2) the selection of search platform (mobile devices vs. PCs) and (3) the moderating role of product types (*search goods* vs. *experience goods*). Our results show that the *price-consciousness* and *shopping-enjoyment orientations* have a positive influence on the probability of engaging in a *webrooming* behavior (i.e., search online but purchase offline) while the *convenience orientation* has a negative influence. Furthermore, our findings suggest that *webroomers* who are highly oriented towards convenience, enjoyment, and exploration are more likely to use mobile devices than stationary devices when searching information online. Lastly, our results indicate that there are differences in those selection preferences across product types. Our findings provide retailers with guidelines for developing new marketing strategies in today's multichannel and highly mobile-oriented shopping environment.

Keywords Search channel choice · Webrooming · Mobile device · PCs · Product types

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1 Introduction

With the advent and development of the Internet and mobile devices, consumption patterns have undergone a dramatic transformation. In the past, consumers used the same channel for searching information and purchasing products (i.e., search at bricks-and-mortar stores and purchase through the same channel). However, with the rapid development of multichannel environments offering array of different search platforms such as catalogs, websites and mobile applications, consumers nowadays could search for information through any of these sources and use this information to reach a final decision. Indeed, the proliferation of mobile devices such as smartphones and tablets has enabled consumers to easily search and purchase by moving across online and offline channels.

Despite the role of new technologies, offline stores are still considered to be consumers' preferred purchasing channels. According to research conducted by AT Kearney (2015),[1] 90% of all retail sales are made in offline stores. Furthermore, Global PwC's retail survey (2015)[2] revealed that 36% of their 19,068 global participants make purchases in-store at least once a week, whereas only 20% make purchases in online stores using computers. In other words, bricks-and-mortar stores still function as an essential venue for shopping (Bhargave et al. 2016). Therefore, the emphasis of this study is on understanding offline purchasers' shopping behavior by focusing on their searching behavior.

Although consumers make purchases through offline stores, they do not necessarily rely on this channel for searching information about products. In fact, consumers may use online channels for searching information from various stores in an easy way before purchase a product at offline stores where they can test and touch the product. This behavior is known as *webrooming*. *Webrooming* is increasingly becoming the norm in consumers' shopping journey. However, contrary to recent trends, a significant number of offline purchasers still prefer offline channels to search for product information. According to the Ninth Decimal Survey (2014),[3] 60% of US shoppers search for information in physical stores and 57% make their subsequent purchases in offline stores. Previous research on multichannel segmentation has also emphasized that three specific segments of consumers rely heavily on the offline channel for all their shopping activities: the store-focused segment of Konuş et al. (2008), the bricks-and-mortar shoppers segment of Thomas and Sullivan (2005), and the hard-core offline segment of Knox (2006). Therefore, our first research phase is to understand how the different types of shopping motives of offline purchasers lead them to rely on either offline or online channels as their search channel. Most previous research on multichannel retailing investigates the drivers of channel choice strictly at the purchase stage (Keen et al. 2004; Kushwaha and Shankar 2007; McGoldrick and Collins 2007; Thomas and Sullivan 2005). Furthermore, although few studies have integrated the search and purchase stages (some exceptions are Konuş et al. 2008; Verhoef et al. 2007), multichannel studies focusing on search stages are rare. Understanding the search stage of offline purchasers can provide insights on

[1] https://www.atkearney.com/documents/10192/4683364/On+Solid+Ground.pdf/f96d82ce-e40c-450d-97bb-884b017f4cd7.

[2] https://www.pwc.ie/media-centre/assets/publications/2015-pwc-ireland-total-retail-february.pdf.

[3] http://www.data-charts.com/the-role-of-mobile-in-us-consumers-omni-channel-path-to-purchase/.

which channel to allocate the advertising budget to attract consumers into offline stores based on how different consumer segments value different shopping motives.

The second phase of this research focuses on assessing the effect of using mobile devices for online searching on offline purchases. Mobile devices, which differ significantly from traditional fixed Internet (PCs) in their characteristics including portability, location sensitivity, and personal nature (Shankar et al. 2010), have changed the paradigm of retailing. In the traditional retailing environment, offline stores interact with potential consumers only when they enter the store. The mobile channel, however, allows the retailer to communicate with potential consumers everywhere by constantly entering the customer's environment (Shankar et al. 2010). For instance, retailers can deliver information on sales and promotions to consumers through the mobile channel by using location-based services, which allow consumers to access real-time information. Thus, we assume that the development of mobile technologies has significantly influenced how online information affects offline purchases. Despite the increasing usage of mobile devices, little academic research has focused on preference for mobile devices compared with PCs in the search stage of the shopping journey. Furthermore, prior studies have not accounted for how mobile devices are employed by consumers in the context of multichannel shopping.

Another aspect we explore is whether search-channel and search-platform selections of offline purchasers differ depending on product categories. Since the amount of effort that consumers put into purchase a product depends on the type of the product (Bloch and Richins 1983; Girard et al. 2002), we conduct an exploratory analysis of the moderation effect using the *search-vs-experience* product classification, which has a long tradition in the marketing literature to categorize products (Huang et al. 2009). *Search goods* refer to those products with qualities that can be determined by the consumer before the purchase, while *experience goods* are those products whose qualities cannot be determined before actual purchase and usage of the goods. *Search goods* and *experience goods* differ on the level of consumer effort required to obtain information about their quality before making a purchase (Nelson 1970, 1974). For instance, before making purchase decisions, consumers may execute a more extensive investigation of *search goods* than for *experience goods* (Nelson 1970, 1974). Prior research has asserted that different types of information are related to diverse cognitive procedures that influence not only the way information is learned but also the amount of information acquired (Johnson et al. 2003; Payne et al. 1988). Accordingly, we expect consumers with different shopping motives to make different choices for search channel as well as search platform depending on product type. To the best of our knowledge, there is no research on the role of product type on consumers' preference for search channels and search platforms, and as such, we anticipate that this additional analysis may offer valuable insights for designing correct strategies for each product category.

The remainder of our paper proceeds as follows. Literature review section provides a conceptual discussion and revision of prior research on *webrooming*. Conceptual framework and hypothesis development section provides the theoretical aspects of shopping motives, our conceptual framework, and hypothesis development. The two subsequent sections propose the research methodology and presents the results, respectively. The final section describes the conclusions and implications with the limitations of our research and future directions.

2 Literature review: *Webrooming*

The rapid enhancement in information and communication technology (ICT) has brought a paradigm shift in the distribution market and consumer behavior. For instance, while in the past only a single channel, usually an offline store (brick-and-mortar stores), was used as the distribution channel, there are now a variety of channels available such as TV home shopping, catalogs, kiosks, websites, and mobile apps. In response to these developments, many retailers have initiated multichannel strategies by adding new channels into their existing channel mix (Geyskens et al. 2002).

The growing use of multichannel strategies has also brought new revelations on the interaction between the availability of multiple channels and consumer behavior. One such issue is the *research shopper phenomenon*, which refers to "a way that shoppers search in one channel and purchase in another channel" (Verhoef et al. 2007). Among this phenomena, *webrooming* has become important (Verhoef et al. 2007). As established in the previous section, *webrooming* refers to consumers that use online channels for searching information but purchase offline. Mobile phones and ongoing digitalization have enabled consumers to choose freely from available distribution channels and gain economic advantage by exploiting the benefits of each channel (e.g., search for product information online and compare prices) while avoiding the costs inherent in each channel (e.g., travel costs to collect information before purchasing the product) (Verhoef et al. 2007). As such, studies on channel choice or shopper behavior across channels have received attention in multichannel research for two decades (e.g., Balasubramanian et al. 2002; Schoenbachler and Gordon 2002; Noble et al. 2005; Verhoef et al. 2007; Oppewal et al. 2013; Gupta et al. 2004).

However, the studies on *webrooming* are still limited in number. In particular, research on platform selection and product categories, two of the most important issues in *webrooming*, are extremely scarce. To the best of our knowledge, the study by Flavián et al. (2016) is the only empirical study that deals with *webrooming* from the consumer perspective. Literature still lacks a detailed examination of the shopping motives that lead to *webrooming* behavior as well as of the motives behind *webroomers*' choice of search platforms (mobile vs. PC) by product types. We attempt to mend this gap in knowledge by investigating the motives and preferences of *webroomers* to offer a better understanding of this behavior.

3 Conceptual framework and hypothesis development

3.1 Shopping motives

Shopping motives are "forces instigating behavior to satisfy internal need states" (Westbrook and Black 1985). In other words, shopping motives can be understood as the goals behind consumers' shopping behavior, which establishes the benefits individuals wish to obtain and their choice of product or channel to satisfy these desires (Noble et al. 2006). Previous studies have suggested that needs other than those associated with a product influence the purchase decision (Stone

1954; Tauber 1972) and have defined shopper typologies based on the consumers' shopping motives (Noble et al. 2006). Research on shopping motives has also extensively examined shopping behavior in different contexts of shopping channels, such as department stores (Stone 1954), mail catalog shopping (Eastlick and Feinberg 1999), online shopping (Christodoulides and Michaelidou 2010; Ha and Stoel 2012; Rohm and Swaminathan 2004), and multichannel shopping (Chatterjee 2010; Schröder and Zaharia 2008).

In general, shopping motives are divided into two dimensions: utilitarian and hedonic. The purpose of shopping in light of utilitarian motives is to complete the shopping in an efficient way (Babin et al. 1994; Holbrook and Hirschman 1982). Accordingly, from this perspective, saving monetary resources, effort, and time during the shopping process is important. The literature on shopping motives establishes that the benefit of saving monetary resources is captured by the *price consciousness orientation* (Heitz-Spahn 2013; Konuş et al. 2008; Noble et al. 2005), while the benefits of saving time and effort are captured by the *convenience orientation* (Heitz-Spahn 2013; Rohm and Swaminathan 2004).

On the contrary, hedonic shopping motives capture entertainment and exploration benefits. The entertainment dimension pursues benefits such as happiness, sensuality, enjoyment, and fantasy pertaining to shopping (To et al. 2007). From this perspective, shopping is more than just completing a task. The exploration dimension evokes consumers' impulsiveness (Ailawadi et al. 2001). Indeed, exploration occurs when consumers enjoy the excitement of searching for information and examining a product (Babin et al. 1994). Therefore, we follow previous research that has operationalized the entertainment and exploration dimensions through the *shopping enjoyment orientation* (e.g., Childers et al. 2002; Heitz-Spahn 2013; Rohm and Swaminathan 2004) and the *impulse buying orientation* (e.g., Ailawadi et al. 2001; Jones et al. 2003), respectively. Table 1 summarizes previous studies that have addressed shopping motives. In this study, we propose that these four motives—*price consciousness orientation, convenience orientation, shopping enjoyment orientation, and impulse buying orientation*—influence consumer behavior.

3.2 Hypothesis on the search channel choice for offline purchases

The first phase of this research is devoted to understanding how the different shopping motives of offline purchasers lead them to rely on either offline or online channels as the search channel. The relationship between shopping motives and the choice of channel (e.g., online or offline) is a typical topic in retail literature. For example, research has examined consumers' motivations to shop online versus offline store to derive typologies of 'Internet shoppers' versus 'store shoppers' (e.g., Fenech and O'Cass 2001; Goldsmith and Goldsmith 2002; Bhatnagar and Ghose 2004; Ganesh et al. 2010). Multichannel research has become a major stream of retail literature, in which shopping motives have been studied to classify multichannel consumers and traditional consumers (Konuş et al. 2008; Verhoef et al. 2007). In this context, it is expected that this study will

Table 1 Summary of studies of shopping motives

Author(s)	Shopping context	Shopping motive				Other shopping motive(s)
		PO	CO	SO	IBO	
Heitz-Spahn (2013)	Switching channel behavior	V	V	V		Need for flexibility, variety seeking orientation
Kwon and Jain (2009)	Multichannel	V	V		V	Experiential shopping value, information seeking
Martos-Partal and González-Benito (2013)	Store loyalty	V	V	V	V	Time pressure, service quality sensitivity
Harris et al. (2017)	Grocery shopping		V		V	Multi-tasking
Noble et al. (2006)	Merchant loyalty	V	V			Information attainment, uniqueness seeking, assortment seeking, social interaction, browsing
Noble et al. (2005)	Multichannel	V				Information attainment, immediate possession, assortment seeking
Rohm and Swaminathan (2004)	E-commerce		V			Information seeking, social interaction
Schramm-Klein et al. (2007)	Channel choice	V	V	V		Orientation towards assortment quality, touch and feel orientation, service orientation, orientation towards assortment variety
Schröder and Zaharia (2008)	Multichannel		V	V		Striving for independence, risk aversion

CO convenience orientation, *PO* price consciousness orientation, *IBO* impulse buyingorientation, *SO* shopping enjoyment orientation

Table 2 Benefits related to shopping motives

Dimension	Shopping motive	Benefit(s)	Sources
Utilitarian	Price consciousness orientation	Monetary savings	Ailawadi et al. (2001), Konuş et al. (2008)
	Convenience orientation	Effort and time savings	Rintamäki et al. (2006)
Hedonic	Shopping enjoyment orientation	Entertainment	Ailawadi et al. (2001), Konuş et al. (2008)
	Impulse buying orientation	Exploration	Ailawadi et al. (2001)

expand the body of knowledge on consumer behavior in the multichannel environment through its investigation of the effect of shopping motives (utilitarian and hedonic) on offline purchasers' choice of search channel (online or offline). In particular, this study contributes to existing research by examining webrooming behavior (search online/buy offline), which is a newly emerging pattern in consumer behavior, with a focus on search channel selection, which has been a relatively neglected aspect in multichannel literature.

Under these objectives, we apply the value framework to understand the underlying reasons for offline purchasers' choice of information search channel. In this framework, value is defined as the consequence of the evaluation process (Holbrook and Hirschman 1982; Noble et al. 2005). In a general shopping context, consumers first evaluate the benefits and costs associated with products, then choose the one that maximizes their overall value (Heitz-Spahn 2013; Holbrook and Hirschman 1982). Likewise, in a multichannel context in any retailing situation, consumers maximize value by choosing from various channels that are available to them in the different stages of the shopping process (e.g., searching for information, purchasing) to fulfill both their utilitarian and hedonic needs (Heitz-Spahn 2013). As the benefits that consumers seek depends on their shopping motives (e.g., a convenience orientated consumer will seek to save their time and effort), they will choose the shopping channel through which they can maximize the benefits they wish to obtain (e.g., minimal switching of search or purchase channels to save time and effort). As a result of such decision-making, consumers may patronize a certain set of channels during the shopping process that maximizes the utilitarian or hedonic benefits (Konuş et al. 2008). Table 2 presents a summary of previous studies on the benefits perceived by consumers in relation to different shopping motives.

Under this framework, we claim that offline purchasers can be categorized by search channel based on how different consumer segments value different shopping motives. In our study, we denominate the offline purchaser group that mainly searches for information using online channels as *webroomers* and the group that both searches and purchases through offline channels as *store-focused consumers*. Our expectation is that, depending on the combination of online and offline channels (search online/purchase offline and search offline/purchase offline), there will be different levels of benefits such as price saving, convenience, entertainment, and enjoyment through exploration.

3.2.1 Price consciousness orientation

Price consciousness orientation is defined as the degree to which consumers focus exclusively on paying low prices (Lichtenstein et al. 1990). Online channels provide an easy comparison of product information, making them better platforms on which to search for information compared with offline channels (Verhoef et al. 2007). Thus, the Internet can reduce information asymmetry during the shopping process (Grewal et al. 2003) by allowing consumers to easily compare prices and information from various sellers. Therefore, we assume that a combination of the virtual and physical channels during the shopping process can provide richer information about prices compared with using only a single channel. Searching for information online before making a purchase in an offline store allows consumers to check prices and reduce uncertainty. Therefore, we expect to observe a difference in the level of price consciousness between the offline purchasers who use online channels and the offline purchasers who use offline channels during their searching phase. Based on the above arguments, we formally hypothesize that

H1 Offline purchasers with a high *price consciousness orientation* are more likely to adopt the online channel as the search channel than the offline channel.

3.2.2 Convenience orientation

In this study, *convenience orientation* is defined as the degree to which consumers can easily and quickly perform shopping activities. Consumers who are convenience-oriented generally choose channels that allow them to save time and effort during the shopping process (Rohm and Swaminathan 2004). This particular type of consumer sees the shopping process as a problem-solving task (Bellenger and Korgaonkar 1980). Accordingly, such consumers do their shopping by saving effort and time, which are scarce resources for them. Thus, we argue that consumers who plan to make offline purchases prefer offline channels as a means to search for information because using multiple channels requires an investment in time and effort during the decision-making process (Martos-Partal and González-Benito 2013). Furthermore, Schröder and Zaharia (2008) demonstrated that single-channel customers are more convenience-oriented than multichannel shoppers. Therefore, we hypothesize that

H2 Offline purchasers with a high *convenience orientation* are less likely to adopt the online channel as the search channel than the offline channel.

3.2.3 Shopping enjoyment orientation

Shopping enjoyment orientation refers to the level to which individuals feel pleasure while shopping (Babin et al. 1994). Consumers who have high *shopping enjoyment orientation* seek enjoyment and pleasure during the shopping process (Babin et al. 1994). Previous literature regarding channel choice has associated *shopping*

enjoyment orientation with channel choice behavior (Verhoef et al. 2007). For example, Konuş et al. (2008) suggested that multichannel shoppers obtain more pleasure than single-channel consumers, implying that shoppers using a variety of channels to search and purchase products have higher *shopping enjoyment orientation* than those who use only a single channel during their shopping journey. The act of shopping involves trying new experiences that are fun and exciting, and thus, shoppers gain hedonic value and enjoyment from shopping (Forsythe et al. 2006). Shoppers with *shopping enjoyment orientation* can be motivated by this phenomenon to visit and buy in different stores (Baumgartner and Steenkamp 1996). In this context, Martos-Partal and González-Benito (2013) found that shopping enjoyment relates negatively to store loyalty because consumers like to try and buy in different stores to enlarge this pleasurable experience. In other words, consumers who have a high *shopping enjoyment orientation* tend to enjoy the time invested in extensive searching, while they may be pleased with store and channel switching. Therefore, we hypothesize that offline purchasers with a high *shopping enjoyment orientation* are more likely to use the online channel as the search channel than the offline channel because the Internet allows users to conduct an extensive search by accessing the information of various sellers.

H3 Offline purchasers with a high *shopping enjoyment orientation* are more likely to adopt the online channel as the search channel than the offline channel.

3.2.4 Impulse buying orientation

Impulse buying orientation refers to the degree to which an individual is likely to make an unintended, immediate, or unreflective purchase (Jones et al. 2003). Consumers who have a high *impulse buying orientation* tend to make immediate purchase decisions, and thus, the time they spend on searching and purchasing tends to be short and limited (Skallerud et al. 2009). Since channel switching behavior during the shopping process (e.g., *webrooming* behavior) may often require higher investments of time and effort (e.g., switching costs, planning needed to switch channels) compared with using only a single channel, we claim that offline shoppers with a high *impulse buying orientation* are more likely to stick with one single channel (offline) rather than use different channels for searching and buying. Furthermore, shoppers who are high on *impulse buying orientation* try to maximize their shopping benefits through unintended purchases and gain pure enjoyment from the explorative nature of shopping (Ailawadi et al. 2001). Hence, the high investment of time and effort to switch channels when *webrooming* may prevent consumers from conducting unintended purchases because *webrooming* is often motivated by the intention to make better purchase decisions based on their smart search (Verhoef et al. 2007). Based on these arguments, we hypothesize that

H4 Offline purchasers with a high *impulse buying orientation* are less likely to adopt the online channel as the search channel than the offline channel.

3.3 Choice of mobile device (or PC) when *webrooming*

In this section, we focus only on *webroomers* to investigate their preference in search channels between PCs and mobile devices. As the conceptual framework, we employ use and gratification (U&G) theory, which has been used to understand why and how people pursue specific media to satisfy specific needs (Weng and Ding 2012). According to U&G theory, a media user is an active audience who uses a medium with a specific desire and selects the most adequate media to satisfy his or her gratification. Exiting studies that employ U&G theory as the theoretical framework look into the psychological motives that lead users to choose specific media channels as well as the associated behavioral and attitudinal outcomes (Ruggiero 2000). In the context of our study, U&G theory is a useful framework for understanding the psychological shopping motives that lead *webroomers* to prefer mobile devices or PCs as search tools.

Owing to the different characteristics of mobile Internet and PC-based Internet, we expect that these two devices provide different levels of gratification. Here, mobile Internet refers to the "wireless access to the digitized contents of the Internet via mobile devices" (Chae and Kim 2003). Compared with traditional PC-based Internet, mobile Internet can be employed anywhere and at any time. Because users can instantly access the Internet via mobile devices, the mobile Internet system has distinctive characteristics such as portability, mobility, and permanent availability. By contrast, PC-based Internet is usually used in predetermined environments such as in an office or at home (Hiltunen et al. 2002). Also, mobile Internet runs on mobile devices (e.g., mobile phones), which are regarded as personal and individual items because users always carry them and rarely share them with others (Chae and Kim 2003). However, desktops can be used by a variety of people, such as family and office workers (Watson et al. 2002). In contrast to stationary devices, mobile devices have small screens, require app installation for shopping, and sometimes need the use of data plans (if WiFi is not available). Furthermore, the location-awareness features of mobile Internet can be used to determine users' physical locations (Kannan et al. 2001), unlike PC-based Internet which does not expose where consumers are located. Table 3 resumes these differences of features between mobile Internet and PC-based Internet.

Previous studies found that the above-mentioned differences may lead to different user behaviors. For example, Okazaki (2009) found that the electronic word-of-mouth (E-WOM) via mobile devices has a stronger effect on user decisions than via PCs because mobile Internet has no time and space constraints. These features enable users to exchange information at any place and at any time. In addition, Chae and Kim (2003) compared mobile devices and PCs in an e-business context and found that consumers use mobile Internet when they want to obtain customized content because it has a greater personalization level than that offered by PC-based Internet. Meanwhile, in the online shopping context, mobile-commerce was found to be complementary rather than a direct alternative to e-commerce because of the usability issues associated with mobile devices

Table 3 Comparison between mobile Internet and PC-based Internet

Feature	Mobile internet	PC-based internet
Ubiquity	Absence of space and time constraints	Predetermined environments (e.g., home or office)
Number of users	Personal devices	Multiple users (e.g., family and/or colleagues)
Screen	Small	Big
Location exposure	Location-awareness for personalized services	Does not expose user location

such as screen size limitations and the slow movement of the cursor (Ozok and Wei 2010).

Hence, we argue that these differences in features between PCs and mobile devices may deliver different levels of gratification. Accordingly, *webroomers* would select mobile devices as their preferred search tool if they consider mobile devices to be greater sources of gratification compared with PCs. The following hypotheses are grounded on the superiority of mobile devices in terms of mobility, portability, and location-based features. We argue that for the motives we are addressing—*price consciousness orientation, convenience orientation, shopping enjoyment orientation, and impulse buying orientation*, the benefits from these features offset the weaknesses of mobile devices in terms of screen size, app installation requirement, and use of data plans. Also, we should consider that the trend in mobile devices is to build smartphones with larger screens (Tsai et al. 2017) and that it is not costly to install an app, while the use of data plans may not be a problem if consumers use mobile devices inside stores or malls which usually have WiFi connections.

3.3.1 Price consciousness orientation

Using mobile devices rather than PCs during the searching process may provide consumers with better gratification by offering more expedient means to search for wider selections of more cost-saving alternatives. For example, consumers can assess offers by reviewing information from offline and online channels at the same time by using mobile Internet in store. Furthermore, compared with PC-based Internet, mobile Internet may provide exclusive information such as location-based coupons and promotional offers when consumers enter a store (Persaud and Azhar 2012). Such marketing offers based on consumers' locations not only increase their shopping efficiency, but also reduce their search costs and provide potential opportunities to save money (Persaud and Azhar 2012). Piotrowicz and Cuthbertson (2014) stated that technologies used exclusively on mobile devices such as barcode scanning and QR codes can provide consumers with the opportunity to find cheap alternatives. Therefore,

H5 *Webroomers* with a high *price consciousness orientation* are more likely to use mobile devices than PCs when searching for information online.

3.3.2 Convenience orientation

The mobility of mobile devices—absent in stationary devices—can mitigate the constraints of space and time (Balasubramanian et al. 2002). Therefore, when searching for information, mobile devices have higher convenience than stationary devices. For example, *webroomers* who use PCs to search for information may spend much time and effort going to offline stores because these devices are usually used in the office or at home. However, *webroomers* who use mobile devices such as smartphones can easily move during the searching process; they can even use these devices in store. Previous research claims that such mobility enables consumers to fulfill their shopping goals more quickly and effortlessly than other media (Shankar et al. 2003). Similarly, Kleijnen et al. (2007) found that time convenience positively affects the perceived value of using mobile channels. Therefore, we hypothesize

H6 *Webroomers* with a high *convenience orientation* are more likely to use mobile devices than PCs when searching for information online.

3.3.3 Shopping enjoyment orientation

According to Davis et al. (1989), handheld devices provide greater intrinsic motivation to consumers than desktops because of the former's mobility. Such additional intrinsic motivation in turn provides high levels of enjoyment and fun to consumers (Davis et al. 1992). For example, in the context of electronic word-of-mouth, Okazaki (2009) empirically demonstrated that the level of enjoyment is greater in mobile devices than in PCs. Indeed, the absence of space and time constraints when using mobile devices may allow consumers to search for information anytime and anywhere. Contrary to PCs, this mobile feature allows consumers who are intrinsically motivated to enjoy the shopping process ubiquitously. Accordingly, we hypothesize,

H7 *Webroomers* with a high *shopping enjoyment orientation* are more likely to use mobile devices than PCs when searching for information online.

3.3.4 Impulse buying orientation

Indeed, PC-based Internet provides information already posted by retailers on their websites. Such information seldom changes until retailers update it. On the contrary, the real-time, location-based, and personalized information available

through mobile applications and related technologies may arouse unplanned purchase intentions. For example, Koufaris et al. (2001) found that personalized promotions lead consumers to buy impulsively. Further, previous research suggests that surprise coupons have a psychological effect on consumers, which results in an increase in the size of the shopping basket because of unplanned purchases (Abratt and Goodey 1990; Heilman et al. 2002; Tendai and Crispen 2009). In addition, although mobile devices may stimulate consumers' desire for exploration, consumers may then switch the channel to offline stores to confirm the received information. For example, by using mobile technology such as iBeacon, consumers can receive exclusive information such as pop-up coupons from nearby stores. In this situation, consumers obtain information from their mobile devices but purchase from nearby stores. In other words, mobile devices may supplement the offline search for information. Accordingly, we hypothesize

H8 *Webroomers* with a high *impulse buying orientation* are more likely to use mobile devices than PCs when searching for information online.

Figure 1 summarizes our proposed research model.

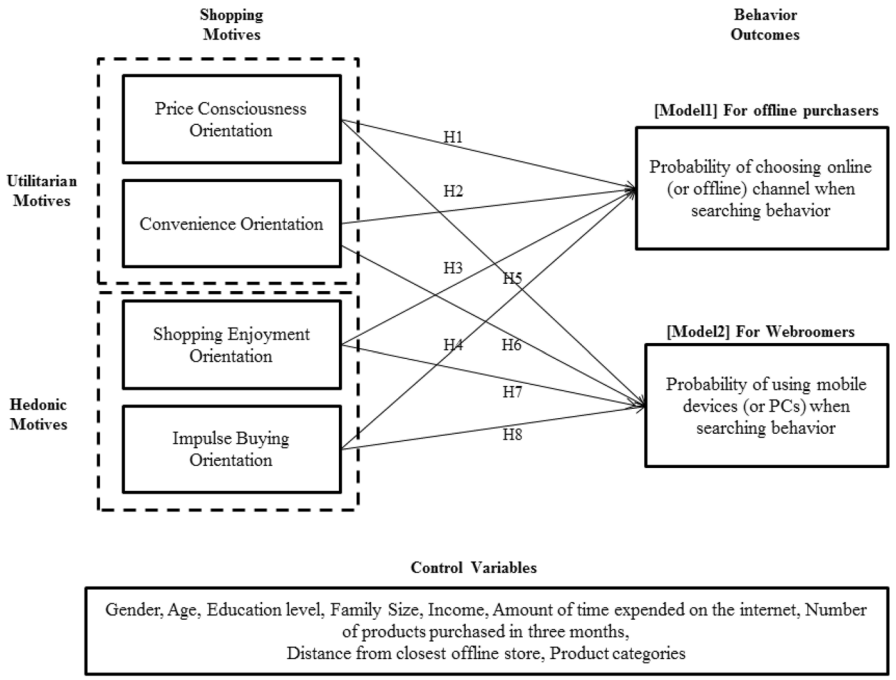

Fig. 1 Research model

4 Research methodology

4.1 Data collection

4.1.1 The case of South Korea

Our research is based on the South Korean (hereinafter Korea) market. Korea's percentage of households with PCs is 77.7%, while the percentage of households with Internet access reaches 98.8% (ITU 2016). As for mobile penetration, Korea exceeds 115% (ITU 2016). However, about 88% of these mobile users own a smartphone with Internet connection, which are enablers of the ubiquitous technologies discussed in previous sections (Pew Research Center 2016). Korea is home to the fastest mobile network in the world, offering 4G services and the highest download speed (GSMA 2013). Considering these features, and that smartphones are more personal compared to PCs that may be shared with other family members, Korea represents a fair scenario where users have almost equal opportunity to access to a PC or smartphone for searching information.

On the other hand, from a review of ITU's *Measuring the Society Report 2016*, it is clear that other countries follow a similar trend, though at a different pace, in terms of PC, mobile devices, and Internet penetration (ITU 2016). Therefore, Korea represents a good option to test how the use of technologies are shaping and will shape user behavior in the coming years. Indeed, Korea is not only one of the world's most connected nations but also the most popular test-beds for ICTs (Ha and Park 2013). Accordingly, we focus on Korea following prior research in user behavior (Ha et al. 2015; Ha and Park 2013; Oghuma et al. 2015).

4.1.2 Screening procedure

Before entering our questionnaire, the respondents were asked to answer two screening questions. First, they were asked if they had purchased any computing equipment (*search goods*) or beauty and cosmetics products (*experience goods*) in the past 3 months. The rationale for selecting computing equipment and beauty and cosmetics is provided in the next section. To obtain separate datasets for the two types of products to investigate the moderating effect of product category, we created separate URLs for the questionnaire on computing equipment and beauty and cosmetics products. The URLs were randomly sent via the email server to the Korean Internet panel, and only those respondents who had purchased these products in the past 3 months passed onto the next stage. The second screening question was about the channel the respondents used to purchase the product. Here, the respondents were asked to select between either online or offline channel based on their preferred and most memorable purchase experience. Since our study focuses on *webroomers* (search online/purchase offline) and store-focused consumers (search offline/

purchase offline), both of whom purchase offline regardless of the channel they use to search for information, only the respondents who selected offline were allowed to proceed to the questionnaire. Those participants who satisfied the above screening questions were asked to complete the survey, recalling their offline purchase experience of the product.

Although this procedure has a limitation originating from the nature of quantitative empirical research, that is, the necessity to transform complex phenomena into measurable and abstract concepts (Kollman et al. 2012), many previous studies on channel selection have employed the same method used in our study. For example, Kollman et al. (2012) also used a similar procedure that classified consumers' search/purchase channel as a dichotomy between online and offline, which they named 'self-reported binary variables.' Cotten and Gupta (2004) also used the dichotomous criterion to discriminate between individuals who seek offline and online health information. Hence, our study is aligned with prior research guidelines.

4.1.3 Sample

Our sample was composed of 700 respondents. The number of *webroomers* was 337 (48.1%) and the number of store-focused consumers was 363 (51.9%). Among *webroomers*, 227 respondents (67.4%) used PC-based Internet devices to search for information, whereas 110 respondents (32.6%) used mobile Internet devices for this task. Table 4 shows the demographic profiles of the respondents.

4.2 Measures

4.2.1 Dependent variables

In our model, we employ two dependent variables based on actual buying experience. Search channel selection (WEBROOMER) is a self-reported variable indicating the respondents' primary search channel. Concerning this variable, the respondents were asked to choose between either online or offline channels as their primary search channel that provided the most influential and vital information during their shopping process. We coded this variable as 1 if the respondent searched for information online (*webroomer*) and 0 if the respondent searched for information offline (store-focused consumer). As for platform selection (MOBILE), we asked the *webroomers* to choose between PC and mobile platforms, giving the value of 1 to this variable if the respondent used mobile Internet and 0 if the respondent used the PC-based Internet as search platform. The flow chart of our survey design is presented in Fig. 2.

4.2.2 Independent variables

Our study has four independent variables representing shopping motives. The measurement items were selected from the literature. All measurement items were

Table 4 Demographics

Variable	Category	*N*	%
Gender	Male	357	51.0
	Female	343	49.0
Age	20–29 years	255	36.4
	30–39 years	225	32.1
	40–49 years	157	22.4
	> 50 years	63	9.1
Education level	High school graduate	78	11.1
	In university	110	15.7
	University graduate	428	61.1
	In graduate school	20	2.9
	Postgraduate	64	9.1
Income (1000 won)	< 2000	63	9.0
	2000–4000	241	34.4
	4000–6000	236	33.7
	6000–8000	93	13.3
	> 8000	67	9.6
Family size	One	58	8.3
	Two	110	15.7
	Three	181	25.8
	Four	272	38.9
	Five	64	9.1
	Six	12	1.7
	Over six	3	0.5

anchored on a seven-point Likert scale and were reflective. Table 5 displays the measurement items for each variable.

4.2.3 Control variables

We included four types of control variables based on previous studies. First, considering that demographics may affect channel choice (Kushwaha and Shankar 2013), we included gender, age, family size, income, and education level in our research model. Second, we considered behavioral variables, which were measured through two questions: (1) average time invested in Internet use per day and (2) number of product categories purchased in the past three months. Third, the situational variable distance-to-store was considered to be a control variable. This situational variable can affect channel choice, especially in online versus offline contexts (Chocarro et al. 2013). For example, Oppewal et al. (2013) found that the distance to physical stores has a negative relationship with the use of traditional channels. To measure this situational variable, we asked respondents about the average time they need to arrive at the nearest physical store where they can

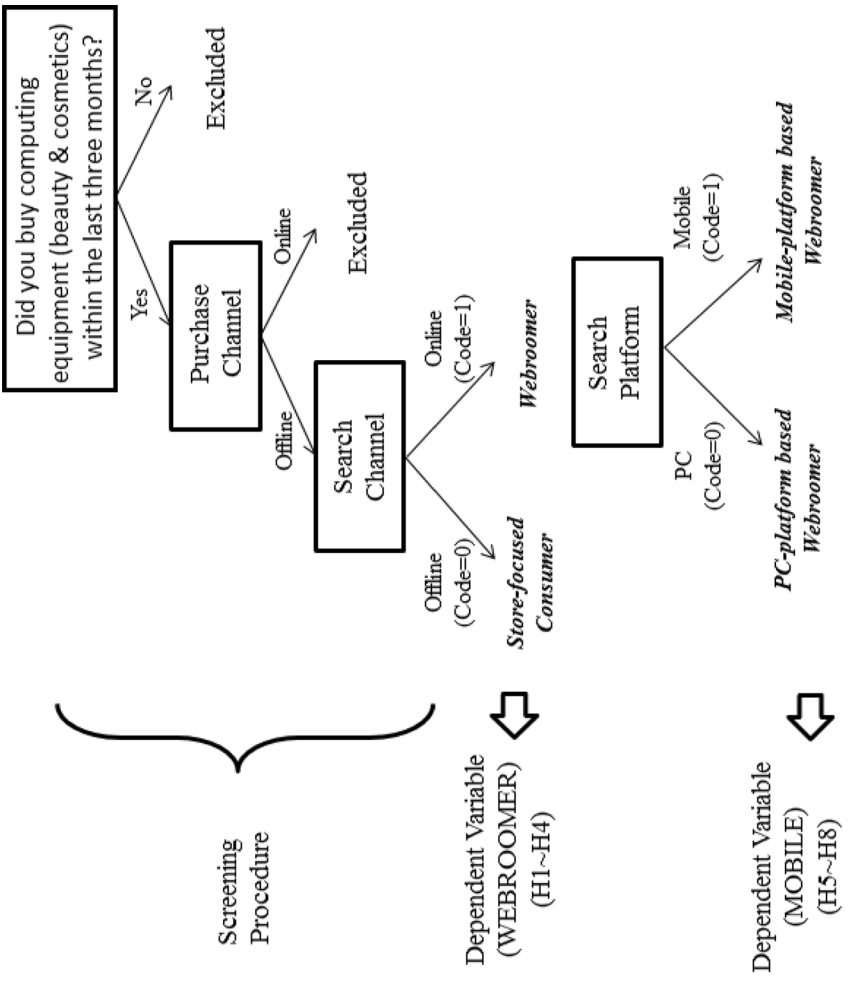

Fig. 2 Survey design

Table 5 Measurement items

Variable	Label	Measurement item	Sources
Price consciousness orientation (PO)	PO1	I usually find myself price comparison shopping	Heitz-Spahn (2013)
	PO2	I often find myself looking for the exact same product at different outlets to find the lowest price	
	PO3	I often compare product prices across retailers to get the lowest price	
	PO4	It is important for me to have the best price for the product	
Convenience orientation (CO)	CO1	When I go shopping, it is important for me to save effort searching	Schröder and Zaharia (2008), Eastlick and Feinberg (1999), Heitz-Spahn (2013)
	CO2	When I go shopping, it is important for me to save time searching	
	CO3	Shopping should not take too much time	
	CO4	Shopping should be easy to do	
	CO5	When I go shopping, it is important for me to find what I want in the least time	
Shopping enjoyment orientation (SO)	SO1	This shopping activity makes me happy	Heitz-Spahn (2013), Yu and Bastin (2010)
	SO2	Shopping is a leisure activity	
	SO3	Shopping is fun	
Impulse Buying Orientation (IBO)	IBO1	When I see something that really interests me, I buy it without considering the consequences	Adelaar et al. (2003)
	IBO2	It is fun to buy spontaneously	
	IBO3	I am a person who makes unplanned purchases	
	IBO4	When I go shopping, I buy things that I had not intended to purchase	

Table 6 Description of the variables

Variable	Description
Dependent variables	
Webroomer (WEBROOMER)	1 = Webrooming behavior (online search, offline purchase) 0 = Store-focused behavior (offline search, offline purchase)
Mobile device (MOBILE)	1 = mobile device as a search tool 0 = PC as a search tool
Independent variables	
Price consciousness orientation (PO)	Degree to which consumers focus on paying low prices
Convenience orientation (CO)	Degree to which consumers focus on shopping easily and quickly
Shopping enjoyment orientation (SO)	Degree to which consumers focus on seeking pleasure when shopping
Impulse buying orientation (IBO)	Degree to which consumers are likely to make unintended purchases
Control variables	
GENDER	1 = female 0 = male
AGE	Age of the respondent (in years)
EDU	Education level achieved by the respondent
FSIZE	Number of people in the respondent's household
INCOME	Average family income per month (in Korean won)
USAGE	Average amount of time spent on the Internet per day (in h)
COUNT	Number of products purchased in the past 3 months
DISTANCE	Distance from the respondent's home to the closest offline store (in min)
PRODUCT	1 = purchased products are computing equipment 0 = purchased products are beauty and cosmetics products

compare and purchase products. Finally, we considered product type to be a control variable because previous research suggests that consumer behavior varies across products (Ailawadi et al. 2006; Inman et al. 2004; Kushwaha and Shankar 2013). This control variable was set to separate *search goods* and *experience goods* for conducting group analysis. We used the variable PRODUCT to operationalize this categorization. PRODUCT was coded as 1 if a respondent purchased computing equipment (*search goods*) and 0 if the respondent purchased beauty and cosmetics (*experience goods*) products. We choose computing equipment to represent *search goods* (Nelson 1970; Weathers et al. 2007) and beauty and cosmetics products to represent *experience goods* (Nelson 1974; Huang et al. 2009) for two reasons: (1) they match well the classification of *search* and *experience goods* developed by Nelson (1970, 1974), and (2) they are among the most popular products purchased in e-commerce environments (Statista 2013). Table 6 summarizes the variables used in our research.

Table 7 Factor loadings for the rotated factors

Item	Factor loading				Communality
	1	2	3	4	
CO1	**0.627**	0.020	0.037	−0.209	0.435
CO2	**0.852**	-0.026	0.060	−0.014	0.722
CO3	**0.834**	0.029	0.006	−0.001	0.710
CO4	**0.641**	0.061	0.032	−0.040	0.413
CO5	**0.813**	0.090	−0.050	−0.034	0.590
PO1	0.077	**0.780**	−0.013	0.016	0.563
PO2	−0.013	**0.843**	−0.024	0.144	0.648
PO3	−0.012	**0.817**	−0.040	0.142	0.625
PO4	0.126	**0.783**	0.067	0.122	0.587
IBO1	0.021	0.040	**0.871**	0.137	0.714
IBO2	0.057	-0.071	**0.757**	0.117	0.563
IBO3	−0.004	−0.041	**0.734**	0.224	0.580
IBO4	0.018	0.064	**0.800**	0.148	0.672
SO1	−0.094	0.205	0.197	**0.675**	0.517
SO2	−0.097	0.094	0.209	**0.773**	0.599
SO3	−0.080	0.128	0.221	**0.880**	0.673
Eigenvalue	2.94	2.69	2.66	2.04	
% of Variance	18.36	16.83	16.61	12.72	

Values in bold represent the loading of each item in its respective latent variable, the other values represent the crossloadings

CO convenience orientation (Factor 1), *PO* price consciousness orientation (Factor 2), *IBO* impulse buying orientation (Factor 3), *SO* shopping enjoyment orientation (Factor 4)

Table 8 Internal consistency and discriminant validity

	CA	CR	AVE	CO	PO	IBO	SO
CO	0.868	0.870	0.577	(0.760)			
PO	0.885	0.881	0.650	*0.079*	(0.806)		
IBO	0.879	0.870	0.628	*0.032*	*0.017*	(0.792)	
SO	0.858	0.822	0.609	*−0.149*	*0.250*	*0.375*	(0.780)

Numbers in parentheses are square root of AVEs; numbers in italics are correlations between variables

CA Cronbach's alpha, *CR* Composite reliability, *CO* Convenience orientation, *PO* Price consciousness orientation, *IBO* Impulse buying orientation, *SO* Shopping enjoyment orientation

5 Results

5.1 Measurement model

The measurement model was assessed through a test of reliability, convergent validity, and discriminant validity. For reliability and convergent validity, we used (1)

reliability of items, (2) internal consistency, and (3) average variance extracted (AVE). Table 7 displays the factor loadings for the rotated factors. All items' loadings were greater than the recommended value of 0.6 (Kline 2014). Then, internal consistency was assessed by examining composite reliability and Cronbach's alpha values, which ranged from 0.822 to 0.881 and from 0.858 to 0.885, respectively (see Table 8). Both composite reliability and Cronbach's alpha values exceeded the criterion of 0.7 (Nunnally 1978). In the case of AVE, all values were over the criterion of 0.5 (see Table 8) suggested by Hu et al. (2004). To assess discriminant validity, we used (1) cross-loadings and (2) comparison between correlations among variables and the square root of AVE. The results supporting adequate discriminant validity are, in the first case, each item's loading on its corresponding latent variable should be larger than its loading on any other variable, while in the second case, the square root of the AVEs should be greater than the correlations among constructs (Chin 1998). To analyze the correlations, we first computed the factor scores by using the average value of the items. An examination of Tables 7 and 8 shows that our measurement model meets both criteria.

5.2 Hypothesis testing

Binary hierarchical logistic regression was used to assess the influence of the independent variables on the dichotomous dependent variables of our model. First, we analyzed the dependent variable WEBROOMER:

$$Logit(p_i) = Ln\left(\frac{p_i}{1-p_i}\right) = \alpha + X_i^T\beta + C_i^T\gamma + \varepsilon_i$$

where p_i is the probability that respondent i becomes a *webroomer*. The coefficient α is the constant term. The matrix X_i captures our independent variables: PO, CO, SO, and IBO. The matrix of the control variables is C_i and this includes GENDER, AGE, EDU, FSIZE, INCOME, USAGE, COUNT, DISTANCE, and PRODUCT. Accordingly, β and γ are the corresponding vectors of the coefficients, while ε_i is the error term.

Moreover, to assess the predictive power of our independent variables, we compared the results of the complete model (control and independent variables) with those of the baseline model (only control variables). Table 9 presents the results. The control variables alone (baseline model) significantly[4] predict *webrooming* behavior $\left(\chi^2 = 43.578, \text{df} = 9, p = 0.000\right)$ with an overall 57.7% of correct predictions. When analyzing the complete model, we found that the independent variables significantly add to the predictive power of the control variables (block of independent variables: $\left(\chi^2 = 30.702, \text{df} = 4, p = 0.000\right)$. This addition improved the overall percentage of correct predictions to 62.6%. In fact, when all variables—independent and control variables—were considered together,

[4] p-values less than 0.05 are considered to be statistically significant.

Table 9 Logistic regression predicting webrooming behavior

	Baseline model ($N=700$)				Complete model ($N=700$)			
	B	SE	Wald	OR	B	SE	Wald	OR
Independent variables								
PO					0.196*	0.077	6.476	1.217
CO					−0.307***	0.083	13.799	0.736
SO					0.197*	0.089	4.951	1.218
IBO					0.005	0.070	0.005	1.005
Control variables								
GENDER	0.284	0.160	3.183	1.329	0.101	0.167	0.367	1.107
AGE	0.011	0.008	2.106	1.012	0.019*	0.009	5.109	1.020
EDU	0.18*	0.084	4.593	1.197	0.181*	0.086	4.472	1.199
FSIZE	0.037	0.071	0.282	1.039	0.047	0.073	0.415	1.048
INCOME	−0.077	0.078	0.988	0.926	-0.08	0.080	1.005	0.922
USAGE	0.139**	0.054	6.754	1.150	0.114*	0.055	4.314	1.122
COUNT	0.123***	0.031	16.279	1.132	0.114***	0.032	12.923	1.121
DISTANCE	0.010	0.006	3.498	1.011	0.011*	0.006	4.057	1.012
PRODUCT	−0.254	0.176	2.090	0.775	−0.238	0.181	1.742	0.788
CONSTANT	−2.068***	0.536	14.919		−2.706***	0.790	11.749	
−2log likelihood	925.862				895.160			
χ^2 (Model)	43.578^{***} (df = 9, p value = 0.000)				74.280^{***} (df = 13, p value = 0.000)			
χ^2 (IV Block)	N/A				30.702^{***} (df = 4, p value = 0.000)			
Hosmer and Lemeshow	11.049 (df = 8, p value = 0.199)				11.838 (df = 8, p value = 0.159)			
Cox and Snell R^2	6.0%				10.1%			
Nagelkerke R^2	8.1%				13.4%			
Overall predicted %	57.7%				62.6%			

B Coefficients, *SE* Standard error, *OR* Odds ratio, *CO* Convenience orientation, *PO* Price consciousness orientation, *IBO* Impulse buying orientation, *SO* Shopping enjoyment orientation, GENDER is for women compared with men, PRODUCT is for computing equipment compared with beauty and cosmetics products, *IV* Independent variables

*$p<0.05$, **$p<0.01$, ***$p<0.001$

they significantly predicted whether a participant showed *webrooming* behavior $\left(\chi^2 = 74.280, \text{df} = 13, p = 0.000\right)$. Moreover, in both models, the Hosmer–Lemeshow test was insignificant, suggesting that they fit the data well.

Further, the coefficients of PO, CO, and SO are all significant and in the same direction as our proposed hypotheses. Hence, H1, H2, and H3 are supported. However, H4 is not supported, as the coefficient of IBO was found to be non-significant. Finally, the odds ratios suggest that a one-unit increase in PO and SO is associated with an increased likelihood of exhibiting *webrooming* behavior by a factor of 1.217 and 1.218, respectively. On the contrary, a one-unit reduction in CO is associated with an increase in the probability of exhibiting this behavior by a factor of 1.359 (i.e., 1/0.736).

Table 10 Logistic regression predicting usage of mobile device

	Baseline model ($N=337$)				Complete model ($N=337$)			
	B	SE	Wald	OR	B	SE	Wald	OR
Independent variables								
PO					0.037	0.129	0.084	1.038
CO					0.331*	0.133	6.179	1.393
SO					0.325*	0.162	4.044	1.384
IBO					0.283*	0.118	5.811	1.328
Control variables								
GENDER	0.637*	0.261	5.990	1.892	0.646*	0.278	5.415	1.909
AGE	−0.053***	0.014	15.615	0.948	−0.053***	0.014	14.021	0.948
EDU	−0.202	0.151	1.816	0.816	−0.213	0.159	1.814	0.808
FSIZE	0.021	0.117	0.035	1.022	0.052	0.122	0.188	1.054
INCOME	0.170	0.125	1.865	1.186	0.117	0.133	0.770	1.124
USAGE	0.007	0.089	0.007	1.008	−0.035	0.094	0.142	0.965
COUNT	0.000	0.025	0.000	1.000	−0.023	0.027	0.764	0.977
DISTANCE	−0.010	0.009	1.516	0.989	−0.007	0.009	0.609	0.993
PRODUCT	−0.284	0.276	1.067	0.752	−0.138	0.287	0.232	0.871
Constant	1.065	0.870	1.500		−3.152*	1.360	5.373	
−2log likelihood	388.867				365.980			
χ^2 (Model)	36.836*** (df = 9, p value = 0.000)				59.723*** (df = 13, p-value = 0.000)			
χ^2 (IV Block)	N/A				22.887*** (df = 4, p value = 0.000)			
Hosmer and Lemeshow	6.433 (df = 8, p value = 0.599)				2.013 (df = 8, p value = 0.981)			
Cox and Snell R^2	10.4%				16.2%			
Nagelkerke R^2	14.4%				22.6%			
Overall predicted %	72.1%				73.9%			

*$p < 0.05$, ***$p < 0.001$

B Coefficients; *SE* Standard error; *OR* Odds ratio; *CO* Convenience orientation; *PO* Price consciousness orientation; *IBO* Impulse buying orientation; *SO* Shopping enjoyment orientation; GENDER is for women compared with men; PRODUCT is for computing equipment compared with beauty and cosmetics products; *IV* Independent variables

Likewise, we conducted this analysis for MOBILE as the dependent variable. In this case, p_i is the probability that *webroomer i* uses a mobile device rather than a PC to search for information about products. As shown in Table 10, the control variables alone (baseline model) significantly predict if a *webroomer* will use a mobile device rather than a PC to search for information $\left(\chi^2 = 36.836, \mathrm{df} = 9, p = 0.000\right)$, with an overall 72.1% of correct predictions. The complete model indicates that the independent variables significantly add to the predictive power of the control variables (block of independent variables: $\chi^2 = 22.887, \mathrm{df} = 4, p = 0.000$). This addition improved the overall percentage of correct predictions to 73.9%. Indeed, when all variables—independent and control variables—are considered together, they significantly

Table 11 Logistic regression with interaction effects

	WEBROMMER				DEVICE			
	B	SE	Wald	OR	B	SE	Wald	OR
Interaction effects[a]								
PO × PRODUCT	0.338*	0.158	4.606	1.403	0.082	0.259	0.099	1.085
CO × PRODUCT	−0.543**	0.169	10.266	0.581	0.132	0.265	0.250	1.141
SO × PRODUCT	0.194	0.184	1.117	1.214	0.558	0.326	2.940	1.748
IBO × PRODUCT	−0.110	0.146	0.568	0.896	0.082	0.240	0.117	1.085

B coefficients, *SE* standard error, *OR* odds ratio, *CO* convenience orientation, *PO* price consciousness orientation, *IBO* Impulse buying orientation, *SO* shopping enjoyment orientation; PRODUCT is for computing equipment compared with beauty and cosmetics products

[a]Other results were omitted for simplicity

*$p < 0.05$, **$p < 0.001$

predict the device that will be used to search for information by a *webroomer* $\left(\chi^2 = 59.723, \text{df} = 13, p = 0.000\right)$.

The coefficients in Table 10 suggest that CO, SO, and IBO significantly predict the odds that a *webroomer* uses a mobile device to search for information about products. These coefficients are in the same direction as H6, H7, and H8. Nevertheless, H5 is not supported, as the coefficient for PO is non-significant. Finally, the odds ratios suggest that a one-unit increase in CO, SO, and IBO is associated with an increased likelihood that a *webroomer* uses a mobile device over a PC to search for information about products by, respectively, a factor of 1.393, 1.384, and 1.328.

5.3 Exploratory analysis of group difference by product type

A primary objective of this research is to investigate how different types of shopping motives lead consumers to rely on either offline or online search channels and to choose an Internet platform between PCs and mobile devices. In addition, we conducted an exploratory analysis to assess if there are significant differences in the effect of the independent variables on both dependent variables between computing equipment and beauty and cosmetics products. For our dependent variable WEBROOMER, we first conducted a likelihood ratio test to check if the effects of the independent variables differed by product type. This test was significant $\left(\chi^2 = 42.128, \text{df} = 13, p = 0.000\right)$ supporting the existence of potential differences. We used interaction effects to further analyze differences in each path across subsamples. We are only interested on potential differences in the effects of independent variables; therefore, we used four interaction paths between each of the independent variables—*price consciousness orientation, convenience orientation, shopping enjoyment orientation,* and *impulse buying orientation*—and the categorical variable PRODUCT. Note that if an interaction path is found to be statistically significant, it means the effect of this independent variable on WEBROOMER for computing equipment is different than the one for beauty and cosmetics products.

Table 11 shows the results for these interaction effects. Significant differences were found in the effect of both utilitarian shopping motives *price consciousness orientation* and *convenience orientation*. According to the results, the effect of *price consciousness orientation* on our dependent variable for computing equipment is significantly larger than its effect for beauty and cosmetics products. Likewise, *convenience orientation* has a greater impact on our dependent variable for the computing equipment than for the beauty and cosmetics products. It is important to note that the former effect is positive while the later is negative. There were no other significant differences.

As for the dependent variable MOBILE, a similar procedure was performed. However, in this case the likelihood ratio test was non-significant $\left(\chi^2 = 10.561, \text{df} = 13, p = 0.647\right)$. Therefore, no differences across subsamples are expected for this dependent variable. Results from interaction effects are aligned with this finding (see Table 11) suggesting the impact of the independent variables on MOBILE do not differ by product type.

6 Conclusion

6.1 Discussion

The objective of our study is to expand the body of knowledge on consumer behavior in a multichannel environment. We focused on *webrooming* behavior (search online/purchase offline)—a newly emerging pattern in consumer behavior—to investigate the effect of shopping motives (utilitarian and hedonic) on the choice of search channel (online or offline) by offline purchasers. In addition, our study analyzes whether shopping motives influence the probability that *webroomers* use mobile devices or PCs as searching tools. Lastly, we conducted an exploratory analysis for examining whether those selection decisions differ depending on product types.

The results for price conscious consumers are in line with our expectations. We find that they are more likely to engage in *webrooming* behavior as they tend to rely heavily on online sources to search for the best prices available before making their purchase decisions. Although Konuş et al. (2008) failed to observe clear evidence of a *price consciousness orientation* effect ($p < 0.1$) among multichannel enthusiasts and store-focused consumers, our study provides more confirmative evidence of this effect. However, our initial expectation that those price conscious consumers may be more likely to use mobile devices than stationary devices when searching for information was not supported. This finding may be explained by the fact that Korean consumers have a relatively low exposition to price discounts and that coupons are seldom redeemed in the market (Jin and Sternquist 2003). This feature of the Korean market could explain why *price consciousness orientation* does not affect consumers' preferences for online searching tools.

On the contrary, the results indicate that consumers with a high *convenience orientation* are less likely to engage in *webrooming* behavior. In other words, consumers who pursue convenience tend not to use online channels before making purchases

at offline stores; rather, they prefer going directly into offline stores. This finding is in line with those of Schröder and Zaharia (2008). Indeed, the effort and time that consumers should invest into online searching may be deemed inconvenient because such costs can easily be avoided if consumers go directly into a physical store and let the store prepare and provide the information for them. The fact that consumers who are high on *convenience orientation* may be motivated to adopt store-focused behavior does not mean they cannot be *webroomers*. In this case, our results also suggest that high convenience-oriented *webroomers* are more likely to use mobile devices (e.g., smartphones, tablets) than stationary devices (e.g., desktops) when searching for information online. In other words, although consumers with a high *convenience orientation* tend not to switch channels during the shopping process, those who do decide to switch rely on mobile devices to search for information. This finding is in contrast to the prior finding of Ghose et al. (2012) that mobile web browsing can be perceived as costly because of the small screen size. One possible explanation for our finding may be that the convenience of using mobile devices (e.g., mobility) offsets the other costs associated with switching from online to offline channels.

Moreover, using the online channel as an information source allows consumers to browse various stores and look up different products, thereby allowing them to conduct extensive searching, which may provide hedonic feelings. This fact may explain the result that shopping enjoyment-oriented consumers are more likely to be *webroomers* than store-focused consumers. After searching for information online, these consumers may be motivated to switch channels from online to offline to confirm whether the actual products meet their expectations. In this process, this type of consumer may enhance his or her enjoyment by touching and feeling the real products. Moreover, shopping enjoyment-oriented *webroomers* are more likely to use mobile devices as searching tools. This finding is consistent with that of Davis et al. (1989) that the mobility of handheld devices provides greater hedonic motivation to consumers compared with desktops.

With respect to impulsiveness, our analysis shows that *impulse buying orientation* does not significantly influence the probability that a consumer becomes a *webroomer*. This result contradicts our initial expectation that consumers who have a high *impulse buying orientation* are less likely to engage in *webrooming* behavior. This contradictory result may be explained by the fact that Korean consumers tend to show a very low impulse-buying tendency. According to the Google consumer barometer, only 6% of purchases in South Korea are motivated by impulsiveness.[5] Accordingly, our sample data indicate a relatively low mean value for this variable (3.70) compared with the mean values of the *shopping enjoyment orientation*, *price consciousness orientation*, and *convenience orientation* (4.83, 5.04, and 4.62, respectively). Therefore, the low *impulse buying orientation* of our sample can explain the insignificant effect of this variable on *webrooming* behavior.

As with those consumers who have high *convenience* and *shopping enjoyment orientations*, consumers who have a high *impulse buying orientation* were found to be more likely to use mobile devices than PCs as searching tools. Hence, although

[5] Google Consumer Barometer Survey (South Korea) 2014/2015.

the *impulse buying orientation* does not significantly influence the likelihood of consumers becoming *webroomers*, *webroomers* with a high *impulse buying orientation* are more likely to use mobile than stationary devices. This result suggests that technologies such as iBeacon and location-based services offered exclusively on mobile devices may help attract impulsive shoppers into offline stores. Such technologies enable consumers to receive real-time information (e.g., pop-up coupons, surprise sales, new product information) from nearby stores, which guides them to the stores by further triggering their feelings of impulsiveness. Therefore, the timely implementation and use of such mobile technologies may be especially useful for enticing consumers with a high *impulse buying orientation* to search for more information on their mobile devices, thereby arousing their purchase intentions. Furthermore, integrating mobile apps with in-store marketing strategies would help stores attract the interest of *webroomers*.

Our study also found that consumers with different shopping motives make different choices of search channel and platform depending on product types. For instance, offline consumers who are high on *price consciousness orientation* are more likely to choose an online search channel when purchasing computing equipment (*search goods*) than when shopping beauty and cosmetics products (*experience goods*). According to Peterson et al. (1997), *search goods* are evaluated using external information, whereas *experience goods* are personally evaluated. In online environments, information about product attributes (e.g., price) is presented straightforwardly, and comparisons across products are facilitated by the frequent presentation of this information in table format (Huang et al. 2009). Price comparison is especially more important for computing equipment than for beauty and cosmetics products when making a purchase decision because price ranges vary in much larger degree for the former products. Therefore, we infer that those who buy *search goods* (computing equipment) will be more sensitive to the importance of obtaining pricing information on the Internet than those who buy *experience goods* (beauty and cosmetics products).

Furthermore, we also found that offline consumers who have high levels of *convenience orientation* are more likely to choose an offline search channel when purchasing computing equipment (*search goods*) than when shopping beauty and cosmetics products (*experience goods*). This finding is also a result of the way consumers collect external information when purchasing *search goods*. The information from experts is especially more critical for computing equipment than for beauty and cosmetics products because computing equipment has technical characteristics that are not easy to understand to all consumers. Online channels require consumers to spend a considerable amount of effort and time to obtain and understand these technical characteristics and compare different brands and models. Thus, consumers with high *convenience orientation* may prefer to visit an offline channel where they can receive face-to-face counsel with a specialized salesperson over an online channel.

Lastly, we did not find significant differences in the effects of our independent variables on platform search decisions across product types.

6.2 Implications

6.2.1 Academic implications

Our study makes contributions to multichannel research. First, we extend prior research on multichannel consumer typologies and offer new insights into the consumer's journey paths. Our study illustrates how offline purchasers use different search channels and search platforms depending on shopping motives. Although previous multichannel studies have emphasized the choice of purchasing channel (Keen et al. 2004; Kushwaha and Shankar 2007; McGoldrick and Collins 2007; Thomas and Sullivan 2005), our study bridges the gap existing in the multichannel literature by examining consumers' channel choice in the search stage that has seldom been considered.

Second, we uncover the segments in *webroomers*' online channel preference between PCs versus mobile platforms depending on their shopping motive. We found that *webroomers* (search online/purchase offline) prefer to use mobile platforms over PCs for searching information when they have high *convenience*, *shopping enjoyment*, and *impulse buying orientations*. Although customers increasingly employ mobile devices to access the Internet, little is known about the motives behind the choice of mobile devices over PCs during the search process. Thus, the current study lays the groundwork for further research on consumer behavior regarding the choice of online platforms.

Lastly, this study highlights the relevance of product category characteristics in the choice of search channels. Our results show that product category affects the usage of the offline versus online channels at the search stage, emphasizing that both utilitarian shopping motives (*price consciousness orientation* and *convenience orientation*) are stronger predictors for *search goods* (computing equipment) than they are for *experience goods* (beauty and cosmetics products). Our findings extend the literature on the importance of the *search* versus *experience goods* in consumer decisions (Huang et al. 2009; Shim et al. 2001).

6.2.2 Practical implications

Our study offers a number of actionable practical and managerial implications. First, our findings indicate that retailers focusing on offline channels can expand their offline sales through online marketing. In particular, we identified a specific group of consumers who prefer to utilize online channels at the search stage before choosing to make offline purchases. Thus, even for offline-centered retailers, online sources can be the outlets for reaching consumers who intend to buy on the offline market, implying the need for not only the management of offline channels but also online channels.

Second, retailers centered on offline channels should consider increasing their online marketing budget for the mobile platform rather than PC-based to attract more consumers to offline stores. According to the findings of our study, the consumer group that prefers searching online and purchasing offline tends to choose

mobile platforms over PCs at the search stage due to various shopping motives. This finding implies that, unlike the past when PC-based websites were the main channel for delivering information online, retailers need to place more attention on the set-up and design of their mobile apps. Particularly for offline-centered retailers, maximizing the utilization of mobile apps may be one of the keys for increasing sales, which can be achieved by delivering not only the information available on websites but also making use of mobile technologies such as location-based services and iBeacon for promotional marketing.

Third, our findings imply that there are certain industries where multichannel strategy is especially vital. In our study, *search goods* (e.g., computing equipment) involved more channel switching by consumers. That is, consumers who purchase *search goods* showed a pattern of engaging in more meticulous and extensive online search to find the best prices and products than those purchasing *experience goods* and making the actual purchase offline. The managerial implication here is that retailers handling *search goods* (e.g., best buy) may attract customers to their offline stores by running discount promotions, such as discount coupons, through online channels. At the same time, we also found that among consumers who have purchased *search goods*, those with high *convenience orientation* preferred to complete both searching and purchasing at offline channels. Thus, retailers handling *search goods* should consider enhancing the features for customer convenience at the stores such as the availability of specialized salespersons to advise customers on product purchases.

6.3 Limitations and future research

Since quantitative studies have the difficulty of simplifying complex real-world problems and applying them to quantified models (Kollman et al. 2012), our study also limits the sorting of respondents by dividing the channel selection (online vs. offline) and online platform selection (PC vs. mobile) as a dichotomy to simplify complex cases. For example, the respondents were asked to choose their primary search channel that provided the most influential and vital information if consumers may use both online and offline channels for searching. However, previous literature on channel selection (e.g., Kollman et al. 2012) have also used binary variables to classify consumer types similarly to our study. In addition, although the proposed model is empirically supported, attention should be given to the generalization of these findings. Korea and its culture are highly homogeneous, which may endow unique characteristics to the samples obtained in Korea that are unlike other countries with more heterogeneous environments. Hence, further research set in other countries on similar phenomena will enhance the external validity of our results.

We can suggest the following topics for future studies. First, it would be interesting to look also into online purchasers' choice of search channels, which will allow future research to expand this topic to include the *showrooming* effect (search offline/purchase online). Second, considering that consumers who plan to buy through the

Internet have access to various information sources that they would be overwhelmed if they try to use all of them (Keller and Staelin 1987), additional studies on understanding which sources consumers place great emphasis on could provide valuable implications to multichannel research. Third, valuable insights may be gained by developing a model that grasps more psychological mechanisms behind consumers' searching behavior and platform choice. For example, investigating the reasons why offline purchasers with *price consciousness orientation* do not adopt offline channels to search for information, or why they hesitate to use PCs for searching information may bring more useful implications for the academia and business managers. Lastly, we can extend our research model in relation to electronic word-of-mouth (WOM). For example, Okazaki (2009) found that WOM through mobile Internet (M-WOM) has a stronger effect on user decisions than through PC Internet (PC-WOM) because the absence of time and space constraints in the former enables consumers to exchange information at any place and at any time. Therefore, the combined effects of shopping motives and WOM on *webrooming* behavior could be an interesting topic to explore and the results may provide valuable implications for WOM literature.

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