



## A new approach to segmenting multichannel shoppers in Korea and the U.S. <sup>☆</sup>



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### ABSTRACT

Advancements in digital technology and devices enlarge dimensions of e-commerce, reforming the ways that consumers shop and purchase products and services. In particular, the mixed use of online, mobile, and offline channels and devices for shopping provides B2C firms with unprecedented challenges and opportunities to develop effective segmentation approaches that capture multitude of newly emerging consumers' shopping patterns. This paper aims to classify consumers along with their shopping patterns and channel preferences by using rank order survey data from Korean and American consumers on their path-to-purchase behaviors. Cluster analysis and Association Rule Mining (ARM) are applied for segmentation and its characterization. Relative importance of path-to-purchase factors such as information search location, payment method, delivery option, and payment location are assessed to determine the differences in Korean and American consumers regarding their shopping patterns and preferences. Network visualization of rules shows the differences in shopping preference and patterns of Korean and US consumers both at micro and macro levels.

### 1. Introduction

Retail industry is rapidly evolving as the Internet drives the development of e-commerce. In the past two decades, various types of 'Business-to-Consumer' (B2C) firms are emerging as major players in the market who managed to grow by leveraging the technology of e-commerce. Companies such as Amazon, Google, Facebook, eBay and Alibaba are a few examples of such companies who are reinventing competitive dynamics of the market place. Commercial sales through online platform continues to grow, particularly mobile-commerce has become a critical dimension of e-commerce in recent years (Wedel and Kannan, 2016). Moreover, digital technologies and devices such as smartphones, smart products, the Internet of Things (IoT), Artificial Intelligence, and deep learning are expected to reform consumers' purchasing behaviour. Thus, online retail channel may be a dominant force bringing disruptive evolution of the retail industry (Christensen and Raynor, 2003). Digital media has become major medium for interacting with consumers over the traditional communication modes such as TV, radio and prints, and provides an innovative way to market products and services to consumers. Thus, the explosive growth of media, channels, digital devices, and software applications has

provided firms with unprecedented opportunities and challenges to offer more value to customers, enhance their experiences, increase their satisfaction and loyalty, and extract value (Wedel and Kannan, 2016).

Mobile-based digital media leads to emergence of new type of promotional tools such as personalized promotion and location-based mobile promotion, and firms acquire, retain and satisfy targeted customers through online, mobile, search engine and social network service (SNS) channel. Recently, digitization of marketing and retail business is evidently prevalent (Leeflang et al., 2014), and many researchers and practitioners are studying development of multi-channels to question about legitimacy of offline channel's economic efficiency in the new retail platform (Avery et al., 2012). Some of them research impact of online and offline interaction and explore possible synergy between the two channels (Kannan, 2017a, 2017b; Verhoef et al., 2015; Neslin et al., 2006). Ongoing development in digital technology brings changes in the retail market, and major online retail firms such as Amazon disrupt level-playing field by entering offline retail sector and pre-empting small offline stores. It is inevitable for retail companies to adopt digital technology in order to acquire more customer touch points and to stay competitive in rapidly restructuring market place.

In the digital era, customer's journey in the purchasing process

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include a few stages (i.e. from the initial stimulus to purchase through to post purchase activity) which involve both online and offline channels. Along with this purchasing process, marketers and retailers attempt to expand their interaction with their customers through multiple touch points across the channels. A multitude of different retail channels enable marketers to offer more options of service to customers for various touch points such as information search, payment method, payment-location and delivery method. Consumers may develop perception for these complicated channel attributes and exhibit different preference for online and offline for these service options throughout shopper journeys. Understanding of consumers' channel preference for various touchpoints throughout shopper journey is important for marketers and retailers in order to accommodate rapidly evolving retail environment and consumer shopping behaviour.

This paper aims to examine newly emerging consumers' channel preference for touchpoints in the midst of reforming retail environment. Our study follows conceptual framework of the five-stage purchasing process model (Kotler et al., 2014) and purchase process of customer (Kyun et al., 2009) in order to evaluate consumers' behaviour at various stages of the purchasing process.

Relative importance of factors such as information search location, payment method, delivery option, payment locations are assessed to determine difference in Korean and American consumers regarding their shopping patterns and preferences. We conducted surveys in Korea and the U.S. for rank order of online and offline options as channel preferences reflecting their shopping patterns. Understanding of differentiated consumer preference for shopping channels throughout their purchasing process provide guidelines for identifying potential target customer groups and for designing effective marketing mix, supporting efficient resource allocations. Findings provide implications for supporting marketing decisions and for developing various approaches to capture customer heterogeneity (Wedel and Kannan, 2016).

## 2. Research background

Customer's cross/multi/omni-channel shopping behaviors have become commonplace, while offline shopping still dominates a large subsection of the market (Huang et al., 2017). In this environment, as mentioned, the advent of new digital and shopping channels has created disruptive changes in the retail environment (Rigby, 2011). The boundary among different channels become blurred as the natural borders between channels begin to disappear (Brynjolfsson et al., 2013). Emerging new channels are expected to bring geographically distant markets closer and enhance consumers' access to market information. Development of new devices or shopping environment may have substantial impact on consumers' purchasing process. The purchasing process begins when the buyer first becomes aware of a problem or need (Kotler et al., 2014). Consequently, customers acquire information about a product from the internet, sales clerks, internet malls, or acquaintances before purchasing (Kyun et al., 2009). Consumer information gathering, search and information processing are affected by the perceived usefulness of information of on/offline sources (Elliott et al., 2012), and as a result, decision support can play an important role in the new environment.

Recent research has provided insights into consumer behaviour, customer trust, and risk awareness of these processes in digital and non-digital environments (Kannan, 2017a, 2017b). Some researchers have investigated the impact of mobile channel usage, and in particular the use of mobile apps, on performance, as in online channel development (Xu et al., 2014). Häubl and Trifts (2000) investigated the effect on consumer purchasing behaviour by focusing on the device or environment. Shi et al. (2013), Shankar et al. (2010) also studied on how mobile device characteristics can affect consumer behaviour. With the technological progress and wide adoption of digital payment methods (ie. Paypal, mobile payment, smart pay), consumer's choices for

payment method and delivery methods have diversified, which lead to significant changes in shopping patterns and consumption culture (Liébana-Cabanillas, Lara-Rubio, 2017).

Some studies focused on the pre-purchase process, specifically on customers' preferences and their choice between online and offline channels. When people choose shopping channels, they considered the characteristics of the products and services (Degeratu et al., 2000), delivery time (Gupta et al., 2004), service quality (Ahn et al., 2004) and price difference (Crespo and Del Bosque (2010)). Elliott et al. (2012) attempted to explore multichannel shopper segments during the two critical stages of the buying process- search and purchase and reported differentiated characteristics of single channel segments versus cross-channel segments. Yet their finding is primarily based on offline consumers, representing the traditional single-channel, brick-and-mortar-shopper, thus limited in projecting implications for consumer choices for both online and offline channels.

Various studies attempt to address multi/omni-channel concepts yet exhibit gaps and limited views on the multi/omni channel retail literature (Harris et al., 2018). Some researchers explored various characteristics and requirements of the omni-channel and its supporting platforms and architecture (Bell et al., 2014; Plomp and Batenburg, 2010; Schramm-Klein, 2011; Brynjolfsson et al., 2013), while other studies assessed the scope of omni-channel regarding touchpoints and channels for communication and transaction with customers (Dorman, 2013; Verhoef et al., 2015), importance of inventory location and management (Wollenburg et al., 2016), synergy and complementarity of multichannel (Blazquez, 2014; Lim et al., 2012), and channel integration of multichannel (Herhausen et al., 2015). Thus, there is a need for a thorough characterization for various aspects of multi/omni channel systems and their features and a more holistic framework for evolving retail channels (Harris et al., 2018).

As the retail channel becomes more integrated, channel organization becomes more complex, and it is necessary to reflect these changes in determining consumer segmentation. Verhoef et al. (2015) describes that as the channel become more integrated, more channels get involved; include more customer touch points; induces the disappearance of borders between channels; and customer brand experience become highly specific (Lewis et al., 2014; Cao and Li, 2015). This change in the retail environment inevitably result in diversifying the forms of adoption exhibited by consumers (Jun and Park, 2016). Consumers can easily switch from one channel to another in their buying experience, where they may find a product in one channel (e.g. manufacturer's website), place the order via another channel (e.g. an online retailer) and have the product delivery from a third channel (e.g. home delivery) (Saghiri et al., 2017). Thus, shopping channel has become a complex adaptive system which consist of agents, and channel agents are defined in the context of channel types they represent or perform in, while channel types are defined based on the stages of the shopper journey (Saghiri et al., 2017). This multi-dimension view of retail channel is yet to be explored in the literature.

Kotler et al. (2014) suggest consumers' path-to-purchase as 5 stage process (Fig. 1). The buying process is also known as the 'customer value-adding journey' (Wilding, 2003), and the value is provided by agent or co-created by customers and agents (Kowalkowski et al., 2012). In Kotler's model, five critical factors are identified as major determinants for consumers' shopping process, in which 'the most important factor for shopping' is considered as the premise factor, while other four factors (information search methods; payment methods; payment locations; and delivery methods) are considered as sub-factors (Fig. 1).

In the first stage of shopper's journey, consumers recognize needs for a product, then s/he collects relevant information (e.g. what feature/models/ options to buy, where to buy from) in the second stage and evaluate value of alternative options in the third stage. The shopper journey continues to the fourth stage and consumer make decision for purchase, considering payment methods, payment location and

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