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Author(s): Tyrväinen, Olli; Karjaluoto, Heikki

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A Systematic Literature Review and Analysis of Mobile Retailing Adoption

Abstract

The purpose of this study is to provide a comprehensive updated review and analysis of mobile retailing adoption. Although research on mobile channel utilization has increased significantly in recent years and many new studies on this topic have been published, research has not yet provided a clear structure regarding how consumers' expectations have advanced in relation to mobile retailing adoption. Thus, this study synthesizes the mobile retail adoption literature and develops a framework for it. Our systematic literature review analyzed 94 scientific articles that were published between 2010 and 2018 to determine customers' different expectations and demands during different mobile channel adoption stages. Our findings enhance the understanding of how retailers can serve customers in each stage. In addition, our framework provides opportunities and provokes questions for further research as well as shifts the focus from technology adoption-oriented topics toward customer journeys.

Keywords: mobile shopping, smartphones, retailing, review article

Highlights:

- Customers' previous mobile shopping experience, their stage of mobile channel use, and the retailing context determine which features are the most valuable.
- In the initial stages of use, when customers are unfamiliar with mobile technologies and thus lack experience on mobile channels, they prefer utilitarian benefits.
- In later stages, when customers are familiar with mobile channels, they value more hedonic aspects.
- A mobile channel is not seen as a purchasing channel but rather as a searching channel. If retailers succeed in turning a mobile channel into a purchasing channel, they can provide deeper and more satisfying customer experiences.

1. Introduction

In 2017 web traffic from mobile devices peaked above traffic from computers (Qubit 2018).

Consequently, retailers must now react to this evolution and do business on the digital field. Today, customers' experiences depend on mobile channels as well as physical environments and web stores. Physical and virtual channels are interconnected, which makes serving consumers more complicated (Carvalho and Campomar, 2014). These channels should provide a seamless retail experience because both influence the retail customer experience, and each touchpoint influences both brand and retail performance (Verhoef et al., 2015). Thus, the in-store experience should be redefined as part of a larger and more connected customer experience (Blázquez, 2014).

Consumers are increasingly spending more time on smartphones relative to other devices (Sing and Swait, 2017). They are using retailers' online channels on their mobile devices via applications that provide integrated information for customers (Oh et al., 2012). By 2016, 81 of the 100 biggest retailers in the U.S. had their own mobile apps, which they can use to provide a better customer experience than mobile websites because functions and interfaces perform better in applications (Koo, 2016). While traditional retailing is based on a model in which consumers enter the retail environment, mobile channels are changing that by allowing retailers to enter a consumer's environment both anywhere and at any time, which eliminates dependency on a store's location (Shankar et al., 2010).

Mobile retail applications do not require large monetary investments (Pantano, 2014); rather, they are often developed as an add-on feature to already existing channels, which can limit a customer's shopping experience (Cook, 2014; Bang et al., 2013b). However, every channel should be similar in certain areas, such as price, product data, and promotions (Cook, 2014). In addition, perceived differences between mobile and online channel technologies and value can significantly affect a consumer's transfer between online and mobile channels. If a mobile channel has greater speed, consumers are more willing to choose it versus an online channel (Cao and Lu, 2015). Mobile applications also allow retailers to

utilize biometric technologies, such as fingerprint readers, to identify and profile potential customers through their mobile activities (Hino, 2015). Profiling allows retailers to personalize their marketing content, which strengthens customers' satisfaction (Trivedi and Trivedi, 2018).

The information searching process via mobile devices differs from computer searches because mobile screens are smaller, and consumers are reading content intermittently (Goh et al., 2015). Notably, smaller screen sizes may increase search costs (Chau et al. 2018). Consumers typically conduct searches on mobile devices, yet they tend to make purchases in physical stores (Sing and Swait, 2017). In addition, they often use their mobile devices in the store to compare prices online prior to making an in-store purchase (Piotrowicz and Cuthbertson, 2014). Wang et al. (2015) found that consumers tend to rely on previous choices when mobile shopping because screen size and functionality are limited. In addition, perceived quality of a retailer's e-service facilitates the belief that a mobile channel provides high-quality service (Lin, 2012).

Our research motivation derives from remarks that the mobile retailing field has developed rapidly since the conduction of previous literature reviews. Notably, there is no clear structure regarding how consumers' expectations have advanced in their journey toward mobile retailing adoption. Therefore, our research provides a deep analysis of past mobile retailing literature, with a specific focus on what have we learned from mobile retail adoption research.

In addition, no studies have presented a comprehensive review and analysis of mobile retailing adoption in recent years. Our article builds on and complements related research in important ways. Ström et al. (2014) noted a lack of studies about the value of mobile shopping for consumers. However, after 2014, several articles were published on that topic. The objective of this article is to synthesize the mobile retail adoption literature, develop a framework for it, and finally offer suggestions for future research opportunities.

The remainder of the article is organized as follows. We firstly present the utilized methodology of this systematic literature review and follow with the study's results. The main studies from both

hedonic and utilitarian views are presented in Tables 4 and 5. We conclude with theoretical contributions, managerial implications, and suggestions for future research directions.

2. Method

This study followed the systematic literature review model of Palmatier et al. (2017). During the topic formulation step, objectives and research questions for the review were set. Next, procedures and methods for evaluation of published works were developed. The main studies on the topic were analyzed, and relevant keywords for constructing search strings were identified. The objective was to define explicit criteria that could be used in the review. The search strings are presented in Table 1, and the inclusion/exclusion criteria are presented in Table 2.

Table 1 Search strings

Theme	Search String
Retailing	retail* OR shopping
Mobile	mobile OR smartphone
Adoption aspects	hedonic OR utilitarian

2.1 Searching and screening

The main objective of this review was to identify articles that had addressed mobile retailing adoption, including recent reviews of the mobile commerce (m-commerce) literature (Groß, 2015b; Ström et al., 2014; Thus et al., 2007). The reviewed articles were extracted from many different scientific peer-reviewed journals (Table 3). The aim of this step was to locate all relevant studies for this research (Palmatier et al., 2017). The examination began with a detailed search of previous reviews. Three electronic databases—Elsevier, Taylor and Francis, and Emerald Insight—were searched for articles whose titles, keywords, or abstracts contained at least one of the search terms from the retailing and mobile themes. In addition, full texts were searched for the adoption aspect theme. This search returned 212 articles.

The next task was determining which studies met the eligibility requirements (Palmatier et al., 2017). A preliminary screening of article titles and abstracts led to the retention of 61 articles that were

relevant to the topic. In addition, 20 articles from ResearchGate, 14 other articles, and 2 conference papers, which might not have been accessible in the online databases, were added from the authors' prior reading and the snowballing of database-sourced articles. These 97 articles were scored per the quality assessment criteria (which are presented in the appendix) of Pittaway et al. (2004). The 94 articles that scored 8 (of a possible 15) or more were selected for the final sample.

Table 2 Inclusion and exclusion criteria

Criterion	Inclusion	Exclusion
Study type	Peer-reviewed empirical and theoretical studies	All others
Language	English	Other languages
Source	Articles from scholarly journals	Other sources
Date	2010–2018	<2010
Relevance	Mobile retailing	-Not relevant to the research question -Poor level of analysis

2.2 Extraction and synthesis

Per Palmatier et al. (2017), descriptive analysis is useful as a starting point of review due to varying data. Therefore, key findings, methodological decisions, and implications were summarized on an Excel spreadsheet. The dataset contained quantitative, qualitative, and review articles. Because of the varied data, the cross-case analysis method was used to synthesize each article (Mays et al., 2005). The analysis process, wherein articles were analyzed one by one, formulated constructs around the mobile retailing topic. The literature was scoped to confirm existing terms and theories as well as define new ones (Gioia et al., 2012).

3. Results

Table 3 Journals with two or more articles in the review

Journal title	Number of articles
Journal of Retailing and Consumer Services	11
Journal of Retailing	7
Journal of Interactive Marketing	6
International Journal of Electronic Commerce	5
Computers in Human Behavior	4
Journal of Internet Commerce	4
International Journal of Mobile Communications	3
The Journal of Computer information Systems	3

Telematics and Informatics	3
Advances in Consumer Research	2
European Journal of Marketing	2
Information & Management	2
Journal of Business Research	2
Journal of Marketing	2
Psychology & Marketing	2
The International Review of Retail, Distribution and Consumer Research	2
Other journals (have published only one article)	34
Total	94

3.1 A mobile channel's value for the customer

The goal of increasing the motivation of customers who are using digital technologies and mobile phones is to improve their shopping experiences (Rosenblum and Rowen, 2012). Customers' interactions with available technologies and salespersons together influence overall service quality perception (Pantano and Viassone, 2015). Technologies, such as mobile applications, in-store technologies, social media and Web sites, have enabled omnichannel retailing dynamics that influence both the consumer and the business (Lazaris and Vrechopoulos, 2014). With mobile technologies, retailers can increase perceived value, which increases both loyalty and sales results (Ström et al., 2014). In addition, mobile shopping has strong emotional significance to customers because mobile shopping sites are a source of entertainment (Thakur, 2016). Dennis et al. (2016) noted that shopping positively influences happiness and well-being, and cellphone shopping in particular provides the opportunity to escape reality. Online shopping with computers has a similar effect. In addition, Brasel and Gips (2014) found that touchscreen purchasing generates higher levels of endorsement when compared to laptop touchpads because there is a relationship between the touchscreen and perceived psychological ownership.

Mobile phones increase customers' feelings of control. If consumers search more with their mobile devices, their perceived control over the situation increases, which influences their purchase intentions. Retailers should provide consumers with Wi-Fi in stores to facilitate mobile shopping (Rippé et al., 2017).

Mobile platforms are often developed as an add-on to already existing channels, which limits product range. However, the product range in every channel should be the same regarding prices, product

data, and promotions (Cook, 2014). In-store marketing stimuli has less of an influence on shoppers using mobile devices in stores because they often pay less attention to it, which causes them to make fewer unplanned purchases. In-store mobile users even forget to purchase some products that they had planned to buy (Bellini and Aiolfi, 2017). Behaviors unrelated to shopping, such as texting, talking, or surfing on the web, can have negative outcomes regarding customers purchasing unplanned products, and those factors might result in a failure to purchase planned items. Related behaviors result in better purchasing decisions and staying on track during shopping (Sciandra and Inman, 2015).

Various authors have concentrated on explaining a customer's motivation to adopt a mobile channel. The literature emphasizes two determinants for mobile channel adoption: hedonic and utilitarian aspects (Iyer et al., 2018; San-Martin et al., 2013; Spaid and Flint, 2014; Yang, 2010). Both hedonic and utilitarian values positively influence the intention of using mobile services (Ltifi, 2018). Previous studies have highlighted that customers' expectations and demands for mobile channels vary per their stage of adoption and the type of products purchased (Yang, 2010, 2012). Different customers have different channel preferences in different shopping, service, and purchase contexts. For example, consumers differ in how they search for, purchase, and use interactive retail services (Berry et al., 2010). Customers' opinions toward mobile retailing vary, and they have different preferences in the types of products purchased (Chou et al., 2016). When they first utilize mobile shopping, usefulness of functions and features is more important; however, in later stages, customers regard enjoyment as more important (Yang, 2010). San-Martin et al. (2013) divided mobile shoppers into three groups: Utilitarian group respects advantages, such as utility; hedonic group prefers more hedonic aspects, and it is important that they are satisfied with their experience; group three sees no advantages in mobile shopping compared to other forms of shopping.

The stage of adoption can influence a customer's behavior. Early adopters can spread their opinions to non-users, and the role of early adopters has been shown to significantly influence mobile shopping adoption among others (Natarajan et al. 2017). Becoming confident in mobile shopping allows customers to explore more functions and features, which enriches their mobile shopping experience

(Yang, 2012). Ono et al. (2012) divided customers' motivation to browse stores into two categories: utilitarian motivation to follow information about prices, trends, and fashion and hedonic adventure motivation, such as motivation to follow exciting and stimulating content in mobile stores. Lai et al. (2012) presented a different viewpoint for consumer preferences when they stated that hedonic consumers are heavy shoppers, and utilitarian consumers are light users. They stated that, instead of targeting marketing communications based on the stage of mobile channel adoption or product categories, retailers should target communications based on types of consumers.

3.2 Utilitarian aspects of mobile shopping adoption

Mobile devices are changing the shopping journey from one in which consumers enter retail stores to one in which retailers enter the consumer's environment anytime and anywhere. Mobile consumer activities that satisfy customer needs include mobile websites, mobile emailing and messaging, mobile advertising and couponing, mobile customer service, and mobile social network management. Per the technology acceptance model (TAM), perceived usefulness and ease of use are key factors in determining the adoption of mobile technology (Shankar et al., 2010). Hung et al. (2012) perceived usefulness as an insignificant variable of mobile shopping continuance. However, it is significant to consumers' intention to adopt mobile shopping. Retailers should provide additional advantages compared to traditional offline stores to create the impression of usefulness. "Always available" and "portable" are features of mobile shopping that retailers should promote to increase the impression of usefulness. Perceived ease of use is a significant variable in the prediction of consumers' intention to adopt mobile shopping. Screen size, visual displays, and keyboard interfaces help create a favorable shopping environment.

3.2.1 Information sharing

Previous mobile retailing research has shown that information sharing is an essential feature of mobile channels. Retailers can facilitate a customer's purchase process with these informative technology solutions (Fuentes and Svingsted, 2017; Kowatsch et al., 2011; Kowatsch and Maas, 2010; Pousttchi and Hufenbach, 2014; Varadarajan et al., 2010; Zhang et al., 2013). Retailers can offer plentiful information

via a mobile service because product information systems can be combined with advertising (Pousttchi and Hufenbach, 2014), and interactive product information is seen as useful for in-store purchase decisions (Kowatch et al., 2011). Having mobile recommendation agents available for product information regarding in-store purchases increases sales volume through an increase in purchase frequency (Kowatsch and Maas, 2010). In addition, third-party technologies and applications are facilitating product comparison and research with mobile devices. This is both a threat and an opportunity because technology diminishes information asymmetry between the retailer and the customer. If a customer is not satisfied after comparing prices on a mobile device, he/she may walk away from the retail store. However, retailers are now able to compete more effectively with interactive technologies (Varadarajan et al., 2010). Notably, the findings of Fuentes and Svingsted (2017) support these results. They found that mobile customers are better informed about prices, technical properties, product availability, and environmental consequences, which has created a challenge for servicepersons. Retailers are trying to serve customers for example with Quick Response Codes (QR codes) and web links in stores.

Smartphones reveal a significant amount of personal information about customers, such as their location, device serial numbers, internal mobile equipment identity, Subscriber Identity Module (SIM) card identifiers, social relationships, lifestyle, preferences, and behavior patterns. Thus, customers are afraid of exposing their personal information (Zhang et al., 2013).

3.2.2 Marketing communication personalization

Previous studies have revealed that mobile technologies allow retailers to personalize their marketing activities and services (Morosan and Agnes, 2016) by sending targeted promotional offers and coupons based on a customer's location (Cao, 2014; Grewal et al., 2011; Hui et al., 2013; Izquierdo-Yusta et al., 2015; Khajehzadeh, 2015; Rigby, 2011; Taylor and Levin, 2014; Zubcsek et al., 2015). However, mobile advertising on a large scale and without any segmentation can cause consumers to not open messages (Izquierdo-Yusta et al., 2015). Zubcsek, Katona, and Sarvary (2015) stated that location history reveals

consumer preferences effectively. In addition, location data allows retailers to send offers when a customer enters their physical store (Rigby, 2011). Kim and Han (2014) noted that demographic-based data helps retailers personalize mobile advertisements, which helps them avoid presenting unwanted marketing communication. Per Bart et al. (2014), mobile display advertising could be effective for certain products (high involvement and utilitarian products). Hedonic and lower involvement products could be positioned as utilitarian and higher involvement products in mobile channel advertising.

Smartphone-generated content helps retailers measure consumers' opinions, which facilitates marketing personalization (Melumad et al., 2015). Mobile promotions that are targeted at increasing travel distance increase unplanned spending. Therefore, shopping basket data should be analyzed to identify product combinations that are not normally purchased together. With this data, these products can be offered at the locations of both products (Hui et al., 2013). Subjective norm, perceived usefulness, and perceived ease of use support customers' mobile coupon usage intentions; therefore, retailers need to promote both usefulness and ease of use to encourage customers to use mobile coupons (Im and Ha, 2013).

Morosan and Agnes (2016) stated that mobile service personalization results in higher satisfaction, reduced costs, and direct distribution. Per Andrews et al. (2012), while customers do perceive value when they receive personalized mobile marketing communications, more research should be done to identify the sources, elements, and degrees of this value because different consumers find different kinds of value through different avenues. Some are expecting functional value, and they want to have control over this activity, while others are expecting conditional value, such as how much and what kind of marketing they receive.

Importantly, mobile adoption may rise in the future because opportunities to receive coupons and promotions, search for prices and reviews, and compare products play significant roles in retail commerce (Einav et al., 2014). More than 50% of cell phone owners had smartphones in 2015, and over 70% of those smartphone owners used their mobile devices for shopping (Brynjolfsson et al., 2015); therefore, it is obvious that mobile usage will continue grow in the future.

3.2.3 Ease of use

One feature of mobile channels that has great potential compared to other retailing channels is ease of use. From this utilitarian perspective, consumers will adopt mobile shopping if they believe that it will increase their shopping performance (Yang, 2010). Consumers are able to shop anytime and anywhere with mobile devices (Bang et al., 2013a; Blázquez, 2014; Huang, 2016; Shankar et al., 2010), and the ability to save time and money are core benefits of mobile channel use (Dmour et al., 2014; Groß, 2015a; Pantano and Priporas, 2016; Yang, 2010). Motivations for mobile shopping include savings of time and money and customized services (Dmour et al., 2014; Pantano and Priporas, 2016). Customers' habits and cost-benefit calculations can influence m-commerce adoption. The benefit is ease of use, while the costs are the limited user interface of mobile devices (Bang et al., 2013a). In addition, search cost is a significant determinant for m-commerce adoption (Bang et al., 2013b). When customers believe that mobile shopping will help them save time, obtain promotion information, and/or receive customized product information, it helps them adopt the technology (Yang 2010). Consumers are willing to adopt mobile shopping to avoid queues in offline stores (Pantano and Priporas, 2016). Groß (2015a) highlighted the importance of ease of use in mobile shopping services as it relates to an enjoyable mobile shopping experience. Per his results, utilitarian aspects are more important than hedonic aspects in the creation of positive attitudes toward mobile shopping, with the main aspect being the ability to save time and money. However, other existing studies have shown different results. For example, Yang (2012) showed that, in the beginning of mobile channel adoption, customers prefer utilitarian benefits, but when they become familiar with mobile shopping, they take on a more hedonistic perspective.

Table 4 The main studies related to the utilitarian aspects of mobile shopping adoption

Study and context	Method	Key takeaways
Andrews et al., 2012	15 qualitative customer interviews	Customers perceive value when they are receiving mobile marketing communications. Different consumers find value in different ways; some expect functional value, and they want to have control over this activity, while others expect conditional value, such as how much and what kind of marketing they receive.
Bang et al., 2013b	1,454,803 transactions of 30,000 users	Customers' habits and cost-benefit calculation influence m-commerce adoption. A benefit is the ability to use mobile technologies anywhere and at any time, while the costs include the limited user interfaces of mobile devices. In addition, search cost is a significant determinant for m-commerce adoption.
Bart et al., 2014	39946 participants in field tests	Mobile display advertising could be effective for high involvement and utilitarian products. Hedonic and lower involvement products could be positioned as utilitarian and higher involvement products in mobile channel advertising.
Blázquez, 2014	14 interviews with managers of a case company	Customers value the ability to shop anywhere and at any time with mobile devices.
Brynjolfson et al., 2015	Customer data of a medium-sized retail company	More than 50% of cell phone owners in the U.S. have smartphones, and over 70% of those users have used their mobile devices for making comparisons in shopping.
Cao, 2014	14 interviews with managers of the case company	Retailers can provide a more customized offering and greater convenience for customers with mobile applications.
Dmour et al., 2014	250 responses to a survey	Users' perceived mobile application quality has a significant effect on mobile shopping continuance. The benefits of mobile shopping include savings of time and money and easy facilitation of the purchasing process.
Einay et al., 2014	Random 1% sample of eBay users	Mobile adoption may rise in the future due to e-commerce. Opportunities to receive coupons and promotions, search for prices and reviews, and compare products play significant roles in retail commerce.
Fuentes and Svigsted, 2017	51 interviews with customers	Mobile customers are better informed about prices, technical properties, product availability, and environmental consequences.
Grewal et al., 2011	Literature review	Mobile applications offer opportunities for location-based price promotions, such as coupons and direct messages to customers' mobile devices when they are near a store.
Groß, 2015a	128 smartphone users with previous experience in m-purchasing	Groß highlighted the importance of ease of use regarding mobile shopping services and enjoyment. Utilitarian aspects are more important than hedonic aspects in the creation of positive attitudes toward mobile shopping due to savings in both time and money.

Hui et al., 2013	An initial survey with 275 consumers, and a second with 81	Mobile promotions that are targeted at increasing travel distance increase unplanned spending.
Im and Ha, 2013	611 responses to a survey	Subjective norm, perceived usefulness, and perceived ease of use are behind customers' mobile coupon usage intentions. For the first time, mobile coupon users' perceived risk is related to intention to disclose personal information.
Izquierdo-Yusta et al., 2015	612 responses to a survey	Mobile advertising on a large scale without segmentation leads consumers to decline to open messages.
Khajehzadeh et al., 2015	288 responses to a survey	Location-based technologies, such as mobile devices, facilitate the targeting of offers to the right customers. Personalization is important for utilitarian consumers, but it is less effective for hedonic consumers.
Kim et al., 2015	403 responses to a survey	Personalization, simplicity (access to shops anywhere and anytime), and connectivity significantly affect the utilitarian value of mobile shopping
Kim and Han, 2014	256 responses to a survey	Mobile advertisement should be pleasant, credible, and informative to attract customers. With demographic-based data, retailers are able to personalize mobile advertisements, which helps them avoid sending unwanted messages.
Kowatsch and Maas, 2010	47 students in a lab experiment	Having mobile recommendation agents available to offer product information for in-store purchase situations increases sales volume through an increase in consumer frequency.
Kowatsch et al., 2011	116 subjects in an experiment	Interactive product information on mobile devices is perceived as more useful for in-store purchase decisions than static information.
Lemon and Verhoef, 2016	Literature review	Mobile channels are better for searching than for making purchases.
Melumad, Inman, and Pham, 2015	367 participants writing a restaurant review	Smartphone-generated content helps retailers measure consumers' opinions. It is more emotional and appealing for consumers and received more votes than PC-generated posts.
Morosan and Agnes, 2016	421 responses to a survey	Mobile apps allow service personalization, which results in higher satisfaction, reduced costs, and direct distribution in the hotel context.
Pantano and Priporas, 2016	29 consumer interviews	Consumers are willing to adopt mobile shopping to avoid queues at offline stores.
Pousttchi and Hufenbach, 2014	Interviews with four m-commerce and retail experts (two from	Retailers can offer information via a mobile service. Product information systems can be combined with advertising.

Rigby, 2011	academia and two from industry)	Marketers are able to send offers to customer's mobile devices with location-based platforms when customers check in at stores.
Shankar et al., 2010	Literature review	Traditional retailing is based on consumers entering the retail environment, but mobile devices are changing this situation to one in which retailers are entering the consumer's environment anytime and anywhere. Per the TAM, perceived usefulness and ease of use are the key factors in determining the adoption of mobile technology.
Tarute et al., 2017	246 responses to a survey	Mobile application usability and visuals influence emotional consumer engagement.
Taylor and Levin, 2014	345 responses to a survey	Customers' interest in a retailer's mobile app correlates with the intention to engage in purchasing and information-sharing activities. Customers are seeking mobile apps that help them complete a transaction.
Varadarajan et al., 2010	Literature review	Third-party technologies and applications facilitate product comparison and research with mobile devices. This is both a threat and an opportunity because technology diminishes information asymmetry between the retailer and the customer. If the customer is not satisfied with the price after checking it via the mobile app, he/she may walk away from the retail store.
Verkijika, 2018	372 responses to a survey	Perceived risk and perceived trust significantly affect behavioral intention toward mobile shopping adoption.
Wong et al., 2014	190 responses to a survey	Perceived usefulness significantly affects consumers' intention to adopt mobile shopping. Perceived ease of use is a significant variable for predicting consumers' intention to adopt mobile shopping. Conversely, perceived risk is insignificant regarding consumers' intentions to adopt mobile shopping.
Yang, 2010	400 mobile service users' responses to an online survey	A customer's belief that mobile shopping will help save them time, obtain promotion information, and/or receive customized product information increases his/her adoption of mobile shopping.
Zhang et al., 2013	278 responses to a survey	Smartphones reveal personal information about customers, such as their location, device serial numbers, internal mobile equipment identity, SIM card ID, social relationships, lifestyle, preferences, and behavior patterns. This aspect provides opportunities as well as challenges for retailers because customers fear exposing their personal information.
Zubcsek et al., 2015	217 participants using location apps during the research	Consumers' location history reveals consumer preferences effectively. Personal advertising can be done based on location history.
Yang and Kim, 2012	400 mobile service users' responses to an online survey	Mobile shopping saves search time by providing quick access to store locations and the ability to browse products at many retailers. For example, GPS on mobile phones helps customers locate the nearest stores, and mobile coupons help save money and make price comparisons both faster and easier.

3.3 Hedonic aspects of mobile shopping adoption

The emotional aspect plays a significant role in mobile channel adoption because mobile shopping is a source of entertainment for customers (Thakur, 2016). Entertainment is the most important determinant of adoption, per Yang (2010), and mobile channels have created a new way to explore products (Yang and Kim, 2012).

The findings of Kang et al. (2015) revealed that the intention to download and use mobile retailing apps is a result of the hedonic motives and positive feelings being evoked by mobile retail apps. In addition, Lee (2017) noted that hedonic motives guide consumers toward mobile channels and lead to the continuance of mobile shopping (Lee and Kim, 2018; Shang and Wu, 2017). When consumers are familiar with mobile shopping, they prefer values like fun (Spaid and Flint, 2014). Agrebi and Jallais (2015) noted that perceived enjoyment in mobile shopping leads to intention to use it. Therefore, from a hedonic perspective, it is important to develop enjoyable habituation to mobile shopping (Hubert, 2017).

Mobile website interactivity is a predictor of enjoyment of the site (Kang, 2015). Usability and visuals of mobile applications influence emotional customer engagement (Tarute et al., 2017), and customer's feeling of control of mobile marketing results in deepening their involvement (Persaud and Azhar, 2012). Yang (2010) stated that entertainment aspects are the most salient determinants of mobile shopping adoption. These hedonic aspects increase a customer's interaction with other customers. In addition, Yang and Forney (2013) found that hedonic performance expectancy was the most important predictor of intention to adopt mobile shopping.

Mobile shopping has been found to improve customers' quality of life; it is a great source of happiness and well-being, and it even provides the opportunity to escape reality (Dennis et al., 2016). Touchscreen purchasing generates higher levels of endorsement than purchases with laptop touchpads, which influence perceived psychological ownership (Brasel and Gips, 2014). Voropanova (2015) stated that retailers can improve consumer productivity by increasing shopping's emotional benefits. Per Blázquez (2014), the entire store experience should be redefined because, thanks to mobile technologies,

it is becoming part of a larger and more connected experience. In the future, mobile experiences will become more entertaining and satisfying because of the new developing functions of mobile applications - better usage of mobile apps results in higher satisfaction (Pantano and Priporas, 2016).

3.3.1 Trust

Trust is also an important factor in mobile shopping adoption (Blaise et al., 2018; Chong, 2013; Hung et al., 2012; Suki, 2011; Verkijika, 2018; Yang et al., 2015). It directly influences behavior toward mobile shopping extension and indirectly influences it via perceived benefits and risks. Thus, enhancing trust reduces perceived risk toward mobile shopping services (Blaise et al., 2018; Yang et al., 2015).

Chong (2013) stated that, for retailers, it is critical to ensure that consumers are satisfied with and have had their expectations for m-commerce met. Chong also noted that customer satisfaction leads to trust in the mobile retailing context, which motivates customers to continue their m-commerce usage. Retailers can make customers aware of security precautions to reduce perceived security risks. Hung et al. (2012) also noted that trust and satisfaction are the most important factors of mobile shopping continuance, and trust is a result of satisfaction. In addition, the results of Suki (2011) support the strong relationship between satisfaction and trust.

Perceived integration between channels has a strong positive effect on trust in mobile retailing (Yang et al., 2015). Customers choose channels depending on their current situation, making easy movement between channels critical (Piotrowicz and Cuthbertson, 2014). Channel integration increases perceived service quality, which increases overall outcomes (Herhausen et al., 2015). It has a positive influence on retailers' performance and competencies (Oh et al., 2012).

Table 5 The main studies related to the hedonic aspects of mobile shopping adoption

Study and context	Method	Key takeaways
Agrebi and Jallais, 2015	Survey of 400 French purchasers and non-purchasers	Perceived enjoyment positively influences the intention of purchasers to use mobile channels only. Non-purchasers' actions are based on utilitarian factors because they are more task-oriented.
Blaise et al., 2018	Survey of 165 North American adults	Trust reduces perceived risk, and thus facilitates mobile shopping adoption.
Blázquez, 2014	14 interviews with managers of a case company	Consumers can shop anytime and anywhere with mobile devices. Thus, the store experience should be redefined; it is becoming part of a larger and more connected customer experience.
Brasel and Gips, 2013	175 Amazon MTurk users	Touchscreen purchasing generates higher levels of endorsement when compared to laptop touchpads. There is a relationship between a touchpad and perceived psychological ownership.
Chong, 2013	Survey of 410 respondents	Trust is one of the most important factors in m-commerce usage; retailers can make customers aware of security issues to reduce perceived security risks.
Dennis et al., 2016	Survey with 1,386 respondents	Shopping has a positive influence on happiness and well-being. Cellphone shopping in particular provides an opportunity to escape reality. Online shopping on a computer produces a similar effect.
Hubert et al., 2017	410 responses to a survey	From a hedonic perspective, enjoyment of mobile shopping is less important than developing habituation. With temporary discounts, retailers are able to ensure customers' repeated purchases.
Hung et al., 2012	244 responses to a survey	Perceived usefulness is not a significant variable of mobile shopping continuance, but trust and satisfaction are the most important factors.
Kang, 2015	Survey of 853 women using mobile internet in the U.S.	The intention to download and use mobile retailing apps is a result of consumers' hedonic motives and the positive feelings that are evoked by mobile retail apps. Mobile website interactivity is a predictor of enjoyment of a mobile website.
Lee and Kim, 2018	216 responses to a survey	Hedonic shopping orientation correlates with the need for mobile app atmospherics, which are important to the reuse of applications.
Lee, 2017	635 consumers' with online or mobile shopping experience	Hedonic motives guide customers toward mobile channel use, whereas utilitarian motives lead to the use of online channels.

McLean et al., 2018	responses to a survey 1024 responses to a survey	Utilitarian factors, such as ease of use, convenience and customization, are behind hedonic experience. These are driving a customer's level of enjoyment during mobile app usage.
Pantano and Priporas, 2016	29 consumer interviews	In the future, mobile experiences will become more entertaining and satisfying because functions of mobile applications are developing and satisfying more customer's needs.
Persaud and Azhar, 2012	Survey of 350 young educated Canadians	When consumers have more control over mobile shopping, they are more willing to deepen their involvement. Engagement is important in this kind of customer relationship.
Shang and Wu, 2017	203 responses to a survey	Enjoyment of shopping increases customers' intentions to continue the use of mobile shopping
Spaid and Flint, 2014	32 customer interviews	Customers use mobile internet devices for different reasons: hedonic and utilitarian. Mobile internet devices create both challenges and new tools. When customers are familiar with technologies, they prefer values such as "fun."
Suki, 2011	200 responses to a survey	Trust, responsiveness, and brand image influence customer relationships in m-commerce.
Thakur, 2016	Three studies: 10 customer interviews, a survey of 304 respondents, and a survey of 433 respondents	Mobile shopping has a strong emotional significance for customers because mobile sites are a source of entertainment.
Voropanova, 2015	Literature review	Retailers can improve consumer productivity by increasing shopping's emotional benefits.
Yang and Forney, 2013	400 responses to a survey	Hedonic performance expectancy is the most important predictor of the intention to adopt mobile shopping.
Yang and Kim, 2012	400 mobile service users' responses to a survey	Adventure shopping via mobile sites entertains customers because they are able to explore stores and product reviews in a new way.
Yang et al., 2015	309 responses to a survey	Trust indirectly influences behaviors toward mobile shopping extension. Enhancing trust reduces perceived risk toward mobile shopping services. In addition, the relationship between mobile and web shopping platforms is important because perceived integration indirectly affects behaviors toward mobile channels.

4. Discussion

4.1 Theoretical contributions

This study contributes to an understanding of the mobile channel adoption. The recent literature on mobile retailing underlines the role of both the utilitarian and the hedonic value of mobile channels for customers. A customer's previous experience, stage of channel use, and the retailing context determine which features are the most valuable for mobile channel adoption in different stages (Figure 1).

In the initial stages, when customers are not familiar with mobile technologies and/or they lack experience in using them, they prefer utilitarian benefits (Yang, 2012), such as savings of time (Dmour et al., 2014; Pantano and Priporas, 2016) and personalized offerings (Melumad et al., 2015; Morosan and Agnes, 2016). In these stages, consumers perceive security risks (Chong 2013); however, trust reduces perceived risk toward mobile shopping services (Yang et al., 2015).

At the adoption stage, customers are comparing the costs of mobile channel use, such as limited user interfaces (Bang et al., 2013b), as well as benefits, such as easy shopping anytime and anywhere (Blázquez, 2014; Shankar et al., 2010; Bang et al., 2013b; Huang, 2016). Customers expect highly personalized mobile marketing communications (Andrews et al., 2012), but they are afraid of losing their personal information. Retailers can use customers' location data to personalize offers (Cao, 2014; Grewal et al., 2011; Hui et al., 2013; Khajehzadeh, 2015; Rigby, 2011; Taylor and Levin, 2014; Zubcsek, Katona, and Sarvary, 2015).

Our analysis also provides several insights into the later stages of adoption, when customers are accustomed to the technology. In these stages, customers start to value more hedonic aspects (Yang, 2012), such as enjoyment (Yang, 2010). This study shows that the purchase itself is commonly linked with hedonic value. The literature also shows that touchscreen purchasing generates higher levels of endorsement compared to laptops (Brasel and Gips, 2014), and mobile shopping continuance and hedonic benefits have a strong relationship (Lee and Kim, 2018; Shang and Wu, 2017).

Nevertheless, it was found that mobile shopping is used more for searching than actual purchases (Lemon and Verhoef, 2016). From a hedonic perspective, mobile shopping is seen as an adventure—a possibility to escape the real world (Dennis et al., 2016). Mobile shopping engrosses customers and deepens their involvement because they feel that they have more control over their shopping (Persaud and Azhar, 2012).

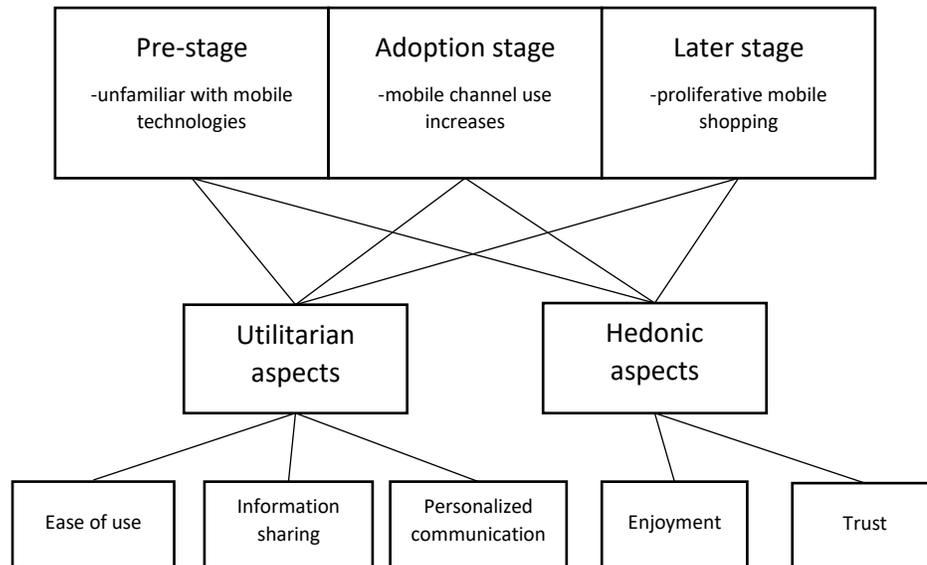


Figure 1. Mobile shopping adoption aspects per adoption stage

4.2 Managerial implications

Because customers have different preferences in different stages of mobile channel adoption, retailers should personalize marketing communications based on a customer's current stage. As Kim et al. (2017) suggested, instead of a single-app strategy, retailers are launching a collection of both shopping and non-shopping apps, which enable them to collect significant amounts of data about digital experiences and browsing behavior. The key factor in mobile success was found to be well-timed utilization of this data. Bilgicer et al. (2015) noted that retailers can influence channel adoption with marketing activities.

A mobile channel is not seen as a purchasing channel but rather as a searching channel. Because mobile purchasing generates high levels of endorsement, opportunities abound for retailers. If they can successfully utilize it in their business, they can provide deeper and more satisfying customer experiences.

Because of the growing popularity of mobile shopping, in-store experiences are also in transition. The ability to reach a mobile channel anywhere and anytime leads to an increase in in-store mobile use, which creates a demand for new mobile solutions that facilitate searching, locating, comparing, and purchasing products in stores.

4.3 Limitations of the study and future research directions

The taken review approach resulted in certain limitations. The number of articles published and searched were limited. The data were collected from articles published between the years 2010 and 2018. Because of the exponential growth of mobile shopping, the context changed significantly between those years. Consequently, newer publications should be given more importance. In addition, the chosen classification framework for articles can be criticized because the scoring was also guided by the authors' own subjective process.

We hope that this research has provided convincing answers to questions about the significance of the mobile adoption stage regarding customers' preferences. Future research can provide interesting insights with both new research methods and research topics. One interesting viewpoint would be a longitudinal study. Because the previous literature and our framework for mobile channel adoption aspects (Figure 1) clearly show that customers in different stages of mobile channel adoption have different preferences in terms of value, it would be beneficial to examine how their behavior and preferences change during their customer journey.

One future research topic would be the examination of the influence of mobile word-of-mouth (WOM). Bilgicer et al. (2015) showed that neighboring and peer customers accelerate the diffusion of the new retail channel. In addition, Riquelme et al. (2015) examined the effects of satisfaction and their

influence on WOM in the online context. Therefore, future research might shed more light on how satisfaction toward mobile channels has a similar positive influence on mobile WOM.

Per Lemon and Verhoef (2016), mobile channels are used more for searching than for making purchases. From a retailer's perspective, it would be beneficial to have the ability to remove all barriers to mobile purchases.

Our model investigated customer behavior in which only one retailer was considered. However, that is not the circumstance in retail markets. Melis et al. (2015) noted that, when customers had more experience with online shopping, they made comparisons within the online channel across different retail chains. It would be interesting to determine whether the situation is the same in mobile channels.

Finally, future research could consider the relationship between online and mobile channels. Do mobile channels cannibalize the web channel? Although some evidence exists on that topic (Huang et al., 2016), more research is required. Pauwels and Neslin (2015) showed that online and offline stores are complements instead of substitutes. Because all omnichannel literature highlights the positive effect of channel integration, how this should be seen via Huang's (2016) results, that mobile channel cannibalizes online channel, should be explored.

4.4 Conclusion

Mobile retailing adoption has been relatively actively discussed during the last decade. The purpose of this study is to provide a comprehensive updated review and analysis of mobile retailing adoption. Although research on mobile channel utilization has increased significantly in recent years and many new studies on this topic have been published, research has not yet provided a clear structure regarding how consumers' expectations have advanced in relation to mobile retailing adoption. Thus, this study synthesizes the mobile retail adoption literature and develops a framework for it. This study provides a systematic review of literature on mobile retailing adoption published from January 2010 to December 2018. The analyzed 94 relevant studies present wide view of existing mobile retailing adoption literature. The analysis of the literature highlights hedonic and utilitarian viewpoints behind mobile retailing

adoption. Our study develops a theoretical framework (Figure 1) of the adoption that highlights how hedonic and utilitarian aspects are related in different stages of mobile retailing adoption. Our findings enhance the understanding of how retailers can serve customers in each stage. In addition, our framework provides opportunities and provokes questions for further research as well as shifts the focus from technology adoption-oriented topics toward customer journeys.

References

- Agrebi, S., and J. Jallais. 2015. Explain the intention to use smartphones for mobile shopping. *Journal of Retailing and Consumer Services* 22(1): 16-23.
- Andrews, L., Drennan, J., and R. Russell-Bennett. 2012. Linking perceived value of mobile marketing with the experiential consumption of mobile phones. *European Journal of Marketing* 46(3): 357-386.
- Bang, Y., Lee, D. Han, K. Hwang, M., and J. Ahn. 2013a. Channel Capabilities, Product Characteristics, and the Impacts of Mobile Channel Introduction. *Journal of Management Information Systems* 30(2): 101-125.
- Bang, Y., Han, K., Animesh, A., and M. Hwang. 2013b. From Online to Mobile: Linking Consumers' Online Purchase Behaviors with Mobile Commerce Adoption. *PACIS 2013 Proceedings*. 128.
- Bart, Y., Stephen, A., and M. Sarvary. 2014. Which Products Are Best Suited to Mobile Advertising? A Field Study of Mobile Display Advertising Effects on Consumer Attitudes and Intentions. *Journal of Marketing Research* 51(3): 270-285.
- Bellini, S., and S. Aiolfi. 2017. The Impact of Mobile Device Use on Shopper Behaviour in Store: An empirical Research on Grocery Retailing. *International Business Research* 10(4): 58-68.
- Berry, L., Bolton, R., Bridges, C., Meyer, J., Parsuraman, A., and K. Seiders. 2010. Opportunities for Innovation in the Delivery of Interactive Retail Services. *Journal of Interactive Marketing* 24(2): 155-167.
- Bilgicer, T., Jedidi, K., Lehmann, D., and S. Neslin. 2015. Social Contagion and Customer Adoption of New Sales Channels. *Journal of Retailing* 91(2): 254-271.
- Blaise, R., Halloran, M., and M. Muchnick. 2018. Mobile Commerce Competitive Advantage: A Quantitative Study of Variables that Predict M-Commerce Purchase Intentions. *Journal of Internet Commerce* 17(2): 96-114.
- Blázquez, M. 2014. Fashion Shopping in Multichannel Retail: The Role of Technology in Enhancing the Customer Experience. *International Journal of Electronic Commerce* 18(4): 97-116.
- Brasel, S., and J. Gips. 2014. Tablets, touchscreens, and touchpads: How varying touch interfaces trigger psychological ownership and endowment. *Journal of Consumer Psychology* 24(2): 226-233.
- Brynjolfsson, E., Hu, Y., and M. Rahman. 2015. Competing in the age of omnichannel retailing. *MIT Sloan Management Review* 54(4): 23-29.
- Cao, L. 2014. Business Model Transformation in Moving to a Cross-Channel Retail Strategy: A Case Study. *International Journal of Electronic Commerce* 18(4): 69-96.
- Cao, Y., and Y. Lu. 2015. The effects of differences between e-commerce and m-commerce on the consumer's usage transfer from online to mobile channel. *International Journal of Mobile Communications* 13(1): 51-70.
- Carvalho, J. and M. Campomar. 2014. Multichannel at Retail and Omni-channel: Challenges for Marketing and Logistics. *Business and Management Review* 4(3): 103-113.
- Chau, N., Seashadri, S., Broekemier, G., and S. Pamarnpathomkul. 2018. An Exploratory Study of Mobile Behaviors of Young Adults in Thailand. *Journal of Internet Commerce* 17(4): 339.-355.
- Chong, A. 2013. Understanding mobile commerce continuance intentions: An empirical analysis of Chinese consumers. *The Journal of Computer Information Systems* Summer 2013: 22-30.
- Chou, Y.-C., Chuang, H., and B. Shao. 2016. The impact of e-retail characteristics on initiating mobile retail services: A modular innovation perspective. *Information & Management* 53(4): 481-491
- Cook, G. 2014. Customer experience in the omni-channel world and the challenges and opportunities this presents. *Journal of Direct, Data and Digital Marketing Practice* 15(4): 262-266.
- Dmour, H., Alshurideh, M., and F. Shishan. 2014. The Influence of Mobile Application Quality and Attributes on the Continuance Intention of Mobile Shopping. *Life Science Journal* 11(10): 172-181.

- Dennis, C., Alamanos, E., Papagiannidis, S., and M. Bourlakis. 2016. Does social exclusion influence multiple channel use? The interconnections with community, happiness, and well-being. *Journal of Business Research* 60(3): 1061-1070.
- Einav, L., Levin, J., Popov, I., and N. Sundaresan. 2014. Growth, Adoption and Use of Mobile E-Commerce. *American Economic Review* 104(5): 489-494.
- Fuentes, C., and A. Svingstedt. 2017. Mobile phones and the practice of shopping: A study of how young adults use smartphones to shop. *Journal of Retailing and Consumer Services* 38(1): 137-146.
- Gioia, D. A., Corley, K. G., and A. L. Hamilton. 2012. Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods* 16(1): 15-31.
- Goh, K., Chu, J., and J. Wu. 2015. Mobile Advertising: An Empirical Study of Temporal and Spatial Differences in Search Behavior and Advertising Response. *Journal of Interactive Marketing* 30(1): 34-35.
- Grewal, D., Ailawadi, K., Gauri, D., Hall, K., Kopalle, P., and J. Robertson. 2011. Innovations in Retail Pricing and Promotions. *Journal of Retailing* 87S(1): S43-S52.
- Groß, M. 2015a. Exploring the acceptance of technology for mobile shopping: an empirical investigation among Smartphone users. *The International Review of Retail, Distribution and Consumer Research* 25(3): 215-235.
- Groß, M. 2015b. Mobile shopping: a classification framework and literature review. *International Journal of Retail & Distribution Management* 43(3): 221-241.
- Herhausen, D., Binder, J., Schoegel, M., and A. Hermann. 2015. Integrating Bricks with Clicks: Retailer-Level and Channel-Level Outcomes of Online-Offline Channel Integration. *Journal of Retailing* 91(2): 309-325.
- Hino, H. 2015. Assessing Factors Affecting Consumer's Intentions to Adopt Biometric Authentication Technologies in E-Shopping. *Journal of Internet Commerce* 14(1): 1-20.
- Hubert, M., Blut, M., Brock, C., Backhaus, C., and T. Eberhard. 2017. Acceptance of Smartphone-Based Mobile Shopping: Mobile Benefits, Customer Characteristics, Perceived Risks, and the Impact of Application Context. *Psychology & Marketing* 34(2): 175-194.
- Hui, S. 2013. The Effect of In-Store Travel Distance on Unplanned Spending: Applications to Mobile Promotion Strategies. *Journal of Marketing* 77(2): 1-16.
- Huang, L., Lu, X., and S. Ba. 2016. An empirical study of the cross-channel effects between web and mobile shopping channels. *Information & Management* 53(2): 265-278.
- Hung, M., Yang, S., and T. Hsieh. 2012. An examination of the determinants of mobile shopping continuance. *International Journal of Electronic Business Management* 10(1): 29-37,
- Im, H., and Y. Ha. 2013. Enablers and inhibitors of permission-based marketing: A case of mobile coupons. *Journal of Retailing and Consumer Services* 20(5): 495-503
- Iyer, P., Davari, A., and A. Mukherjee. 2018. Investigating the effectiveness of retailer's mobile applications in determining customer satisfaction and repatronage intentions? A congruency perspective. *Journal of Retailing and Consumer Services* 44(1): 235-243.
- Izquierdo-Yusta, A., Olarte-Pascual, C., and E. Reinares-Lara. 2015: Attitudes toward mobile advertising among users versus non-users of the mobile Internet. *Telematics and Informatics* 32(2): 255-266.
- Kang, J-Y., Mun, J., and K. Johnson. 2015. In-store mobile usage: Downloading and usage intention toward mobile location-based retail apps. *Computers in Human Behavior*, 46(1): 210-217.
- Khajezadeh, S., Oppewal, H., and D. Tojib. 2015. Mobile coupons: what to offer, to whom, and where? *European Journal of Marketing* 49(5): 851-873.
- Kim, C., Li, W., and D. Kim. 2015. An Empirical Analysis of Factors Influencing M-Shopping Use. *International Journal of Human-Computer Interaction* 31(12): 974-994.
- Kim, M., Kim, J., Choi, J., and M. Trivedi. 2017. Mobile Shopping Through Applications: Understanding Application Possession and Mobile Purchase. *Journal of Interactive Marketing* 39(1): 55-68.

- Kim, Y., and J. Han. 2014. Why smartphone advertising attracts customers: A model of Web advertising, flow and personalization. *Computers in Human Behavior* 33(1): 256-269.
- Koo, W. 2016. Usage of Smartphone Applications: A Descriptive Study of Top 100 U.S. Retailers. *International Journal of Interactive Mobile Technologies* 10(3):. 54.-58.
- Kowatsch, T., and W. Maas. 2010. In-store consumer behavior: How mobile recommendation agents influence usage intentions, product purchases and store preferences. *Computers in Human Behavior* 26(4): 697-704.
- Kowatsch, T., Maas, W., and E. Fleisch. 2011. The role of product reviews on mobile devices for in-store purchases: consumers' usage intentions, costs and store preferences. *International Journal of Internet Marketing and Advertising* 6(3): 226-243.
- Lai, J., Debberma, S., and K. Ulhas. 2012. An empirical study of consumer switching behavior towards mobile shopping: a Push-Pull-Mooring model. *International Journal of Mobile Communications* 10(4): 386-404.
- Lazaris, C., and A. Vrechopoulos. 2014. From Multichannel to "Omnichannel" Retailing: Review of the Literature and Calls for Research. 2nd International Conference on Contemporary Marketing Issues
- Lee, H.-J. 2017. The Differential Factors Influencing Online and Mobile Shopping Behavior. *Journal of Distribution Science* 15(9): 27-36.
- Lee, Y., and H.-Y. Kim. 2018. Consumer need for mobile app atmospherics and its relationships to shopper responses. *Journal of Retailing and Consumer Services* (in press)
- Lemon, K., and P. Verhoef. 2016. Understanding customer experience throughout the customer journey. *Journal of Marketing* 80(6): 69-96.
- Lin, H. 2012. The effect of multi-channel service quality on mobile customer loyalty in an online-and-mobile retail context. *The Service Industries Journal* 32(11): 1865-1882.
- Ltifi, M. 2018. Determinants of the intention of smartphone usage by mobile internet users for m-services. *Management Decision* 56(11): 2291-2307.
- Mays, N., Pope, C., and J. Popay. 2005. Systematically reviewing qualitative and quantitative evidence to inform management and policy-making in the health field. *Journal of Health Services Research & Policy* 10(1): 6-20.
- McLean, G., Al-Nabhani, K., and A. Wilson. 2018. Developing a Mobile Applications Customer Experience Model (MACE) – Implications for Retailers. *Journal of Business Research* 85(1): 325-336.
- Melis, K., Campo, K., Breugelmans, E., and L. Lamey. 2015. The Impact of the Multi-channel Retail Mix on Online Store Choice: Does Online Experience Matter? *Journal of Retailing* 91(2): 272-288.
- Melumad, S., Inman, J., and M. Pham. 2015. The Distinct Psychology of Smartphone Use: Smartphone-Generated Content as Emotional Expression. *Advances in Consumer Research* 43(1): 117-118.
- Morosan, C., and F. Agnes. 2016. Modeling guests' intentions to use mobile apps in hotels: The roles of personalization, privacy and involvement. *Journal of Contemporary Hospitality Management* 28(9): 1961-1991.
- Natarajan, T., Balasubramanian, S., and D. Kasilingam. 2017. Understanding the intention to use mobile shopping applications and its influence on price sensitivity. *Journal of Retailing and Consumer Services* 37(1): 8-11.
- Oh, L., Teo, H., and V. Sambamurthy. 2012. The effects of retail channel integration through the use of information technologies on firm performance. *Journal of Operations Management* 30(5): 368-381.
- Ono, A., Nakamura, A., Okuno, A., and M. Sumikawa. 2016. Consumer Motivations in Browsing Online Stores with Mobile Devices. *International Journal of Electronic Commerce* 16(4): 152-177.
- Palmatier, R., Houston, M., and J. Hulland. 2017. Review articles: purpose, process and structure. *Journal of the Academic Marketing Science* 46(1): 1-5.

- Pantano, E. 2014. Innovation drivers in retail industry. *International Journal of Information Management* 34(3): 344-350.
- Pantano, E., and C.-V. Priporas. 2016. The effect of mobile retailing on consumers' purchasing experiences: A dynamic perspective. *Computers in Human Behavior* 61(1): 548-555
- Pantano, E., and M. Viassone. 2015. Engaging consumers on new integrated multichannel retail settings: Challenges for retailers. *Journal of Retailing and Consumer Services* 25(1): 106-114
- Pauwels, K., and S. Neslin. 2015. Building with Bricks and Mortar: The Revenue Impact of Opening Physical Stores in a Multichannel Environment. *Journal of Retailing* 91(2): 182-197.
- Persaud, A., and I. Azhar. 2012. Innovative mobile marketing via smartphones: Are consumers ready? *Marketing Intelligence & Planning* 30(4): 418-443.
- Piotrowicz, W., and R. Cuthbertson. 2014. Introduction to the special issue information technology in retail. Toward omnichannel retailing. *International Journal of Electronic Commerce* 18(4): 5-16.
- Pittaway, L., Robertson, M., Munir, K., Denyer, D., and A. Neely. 2004. Networking and innovation: A systematic review of the evidence. *International Journal of Management Reviews* 5-6 (3-4): 137-168.
- Pousttchi, K., and Y. Hufenbach. 2014. Engineering the Value Network of the Customer Interface and Marketing in the Data-Rich Retail Environment. *International Journal of Electronic Commerce* 18(4): 17-42.
- Qubit, 2018. The growing influence of mobile discovery on ecommerce revenue. Available at: https://www.qubit.com/research/mobile-product-discovery-ecommerce-revenue/?utm_source=press-release&utm_medium=press%20release&utm_campaign=2018-Q1-Mobile-Product-Discovery#
- Rigby, D. 2011. The Future of Shopping. *Harvard Business Review* 89(12): 64-75.
- Rippé, C., Weisfeld-Spolter, S., Yurova, Y., Dubinsky, A., and D. Hale. 2017. Under the sway of a mobile device during an in-store shopping experience. *Psychology & Marketing* 34(7): 733-752.
- Riquelme, I., Román, S., and D. Iacobucci. 2016. Consumers' Perceptions of Online and Offline Retailer Deception: A Moderated Mediation Analysis. *Journal of Interactive Marketing* 35(1): 16-26.
- Rosenblum, P., and S. Rowen. 2012. The 2012 retail store: In transition. Benchmark Report, Retail Systems Research, Miami, May 2012 (available at http://rsrresearch.com/wp-content/uploads/2012/05/RSR_Store_Report_2012.pdf).
- Sciandra, M., and J. Inman. 2015. Smart Phones, Bad Calls? In-Store Mobile Technology Use and Consumer Purchase Behavior. *Advances in Mobile Consumer Behavior* 43(1): 117-121.
- San-Martin, S., Lopez-Catalan, B., and M. Ramon-Jeronimo. 2013. Mobile Shoppers: Types, Drivers, and Impediments. *Journal of Organizational Computing and Electronic Commerce* 23(4): 350-371.
- Shang, D., and W. Wu. 2017. Understanding mobile shopping consumers' continuance intention. *Industrial Management & Data Systems* 117(1): 213-227.
- Shankar, V., Venkatesh, A., Hofacker, C., and P. Naik. 2010. Mobile marketing in the retailing environment: current insights and future research avenues. *Journal of Interactive Marketing* 24(2): 1-28.
- Singh, S., and J. Swait. 2017. Channels for search and purchase: Does mobile Internet matter? *Journal of Retailing and Consumer Services* 39(6): 123-134.
- Spaid, B., and D. Flint. 2014. The Meaning of Shopping Experiences augmented By Mobile Internet Devices. *Journal of Marketing Theory and Practice* 22(1): 73-90.
- Ström, R., Vendel, M., and J. Bredican. 2014. Mobile marketing: A literature review on its value for consumers and retailers. *Journal of Retailing and Consumer Services* 21(6): 1001-1012.
- Suki, N. 2011. A structural model of customer satisfaction and trust in vendors involved in mobile commerce. *International Journal of Business Science and Applied Management* 6(2): 17-30.
- Tarute, A., Nikou, S., and R. Gautis. 2017. Mobile application driven consumer engagement. *Telematics and Informatics* 24(4): 145-156.

- Taylor, D., and M. Levin. 2014. Predicting mobile app usage for purchasing and information-sharing. *International Journal of Retail & Distribution Management* 42(8): 759-774.
- Thakur, R. 2016. Understanding customer engagement and loyalty: A case of mobile devices for shopping. *Journal of Retailing and Consumer Services* 32(5): 151-163.
- Trivedi, J., and J. Trivedi. 2018. Investigating the Factors That Make a Fashion App Successful: The Moderating Role of Personalization. *Journal of Internet Commerce* 17(2): 170-187.
- Varadarajan, R., Srinivasan, R., Vadakkepatt, G., Yadav, M., Pavlou, P., Krisnamurthy, S., and T. Krause. 2010. Interactive Technologies and Retailing Strategy: A Review, Conceptual Framework and Future Research Directions. *Journal of Interactive Marketing* 24(2): 96-110.
- Verhoef, P., Kannan, P.K., and J. Inman. 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.
- Verkijika, S. F. 2018. Factors influencing the adoption of mobile commerce applications in Cameroon. *Telematics and Informatics* (article in press)
- Voropanova, E. 2015. Conceptualizing smart shopping with a smartphone: implications of the use of mobile devices for shopping productivity and value. *The International Review of Retail, Distribution and Consumer Research* 25(5): 529-550.
- Wang, R., Malthouse, E., and L. Krisnamurthi. 2015. On the Go: How Mobile Shopping Affects Customer Purchase Behavior. *Journal of Retailing* 91(2): 217-234.
- Wong, C., Tan, G., Ooi, K., and B. Lin. 2014. Mobile shopping: the next frontier of the shopping industry? An emerging market perspective. *International Journal of Mobile Communications* 13(1): 1050-1067.
- Yang, S., Chen, Y., and J. Wei. 2015. Understanding consumer's web-mobile shopping extension behavior: a trust transfer perspective. *The Journal of Computer Information Systems* 55(2): 79-87.
- Yang, K. 2010. Determinants of US consumer mobile shopping services adoption: implications for designing mobile shopping services. *Journal of Consumer Marketing* 27(3): 262-270.
- Yang, K. 2012. Consumer technology traits in determining mobile shopping adoption: An application of the extended theory of planned behavior. *Journal of Retailing and Consumer Services* 19(5): 484-491.
- Yang, K. and J. Forney. 2013. The Moderating Role of Consumer Technology Anxiety in Mobile Shopping Adoption: Differential Effects of Facilitating Conditions and Social Influences. *Journal of Electronic Commerce Research* 14(4): 334-347
- Yang, K., and H.-Y. Kim. 2012. Mobile shopping motivation: an application of multiple discriminant analysis. *International Journal of Retail & Distribution Management* 40(10): 778-789.
- Zhang, R., Chen, J., and C. Lee. 2013. Mobile Commerce and Consumer Privacy Concerns. *The Journal of Computer Information Systems* 53(4): 31-38.
- Zubcsek, P., Katona, Z., and M. Sarvary. 2015. Smart Phones, Bad Calls? In-store Mobile Technology Use and consumer Purchase Behavior. *Advances in Consumer Research* 43(1): 120.-121.

Appendix: Quality Assessment Criteria for Review Articles, Pittaway et al. (2004)

Element	Level					Not applicable
	0 Absence	1 Low	2 Medium	3 High		
1. Theory robustness	The article does not provide enough information to assess this criterion	Poor awareness of existing literature and debates. Under- or overreferenced. Low validity of theory	Basic understanding of the issues around the topic being discussed. The theory is weakly related to data	Deep and broad knowledge of relevant literature and theory relevant for addressing the research. Good relations theory-data		This element is not applicable to the document or study
2. Methodology, data and supporting arguments	As above	Data inaccuracy and not related to theory. Flawed research design	Data are related to arguments, though there are some gaps. Research design may be improved	Data strongly supports arguments. Besides, the research design is robust: sampling, data gathering, data analysis is rigorous		As above
3. Implication for practice	As above	Very difficult to implement the concepts and ideas presented. Not relevant for practitioners or professionals	There is potential for implementing the proposed ideas, with minor revisions or adjustments	Significant benefit may be obtained if the ideas being discussed are put into practice		As above
4. Generalizability	As above	Only to the population studied	Generalizable to organizations of similar characteristics	High level of generalizability		As above
5. Contribution	As above	Does not make an important contribution. It is not clear the advances it makes	Although using others' ideas, builds upon the existing theory	Further develops existing knowledge, expanding the way the issue was explained so far		As above