UNIVERSIDAD
DE LA RIOJA

TESIS DOCTORAL

Título

Omnichannel Retailing and Changing Habits in Consumer Shopping Behavior

Autor/es

Ana María Mosquera de la Fuente

Director/es

Cristina Olarte Pascual, Yolanda Sierra Murillo y Emma Juaneda Ayensa

Facultad

Facultad de Ciencias Empresariales

Titulación

Departamento

Economía y Empresa

Curso Académico

Omnichannel Retailing and Changing Habits in Consumer Shopping Behavior, tesis doctoral de Ana María Mosquera de la Fuente, dirigida por Cristina Olarte Pascual, Yolanda Sierra Murillo y Emma Juaneda Ayensa (publicada por la Universidad de La Rioja), se difunde bajo una Licencia Creative Commons Reconocimiento-NoComercial-SinObraDerivada 3.0 Unported.
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Escuela de Máster y Doctorado

Departamento de Economía y Empresa

DOCTORAL THESIS

OMNICHANNEL RETAILING AND CHANGING HABITS IN CONSUMER SHOPPING BEHAVIOR

PhD. Candidate:

Ana Mosquera de la Fuente

Supervised by:

Dra. Cristina Olarte Pascual, Dra. Yolanda Sierra Murillo
y Dra. Emma Juaneda Ayensa

Logroño, 2019

A David, mi familia y mis amigos,
por todo el tiempo que esta Tesis les robó
y no pude dedicarles.

Si he llegado a ver más lejos que otros
es porque me subí a hombros de gigantes
Isaac Newton

Agradecimientos

Al finalizar un trabajo tan duro y a veces lleno de dificultades como el desarrollo de una tesis doctoral es inevitable acordarse de todas las personas que han estado presentes a lo largo de estos años de investigación. Estas líneas son una sincera muestra de mi agradecimiento hacia ellas.

A mis directoras de Tesis, Cristina Olarte, Yolanda Sierra y Emma Juaneda por haberme brindado la posibilidad de trabajar estos cuatro años con ellas, por haberme enseñado tanto, no solo a nivel profesional sino también personal, pero sobre todo por la confianza depositada en mí y su apoyo constante.

A Jorge Pelegrín, quien, aun no siendo director de esta Tesis, se ha comportado como tal ofreciéndome su incondicional ayuda en los temas estadísticos. Gracias a él, el paquete PLS fue algo más amigable.

A Natalia Medrano, porque gracias a ella comencé en este mundo de la investigación, por su incondicional ayuda en todas "mis primeras veces", por compartir conmigo esos malos momentos de la investigación, y, sobre todo, por su generosa y verdadera amistad.

A Álvaro Melón, por los buenos momentos vividos en el despacho, los zumitos de desconexión en los momentos más complicados y por estar siempre dispuesto a echarme una mano.

Para mis compañeros del Área de Comercialización e Investigación de Mercados solo tengo palabras de agradecimiento por su ayuda durante todos los años que he formado parte de área. A todos mis compañeros del Departamento de Economía y Empresa, por haberme tratado tan bien estos años.

A la Cátedra de Comercio, por haber financiado gran parte de mis investigaciones y ofrecerme la posibilidad de comenzar mi carrera investigadora. Y a la Universidad de La Rioja, por el Contrato Predoctoral que ha hecho posible la realización de esta Tesis.

A mis amig@s, porque, aunque no entiendan muy bien en qué consiste mi trabajo siempre me preguntan por mis avances. En especial a Ana y Manu por sus ánimos constantes y su visita a Bari para hacerme mi estancia más agradable; y a Nuria, por estar siempre ahí, por las risas y los llantos juntas, pero sobre todo por ser mi amiga y no dejar que me hundiera en los momentos más complicados.

A mis padres, Daniel y Mary, porque todo lo que tengo y soy es gracias a ellos. Han sido y serán siempre el espejo donde mirarme. A mi hermana Laura y a mi sobrina Martina, por ayudarme a desconectar en los momentos complicados de la investigación y sacarme una sonrisa jugando a las “palmitas”. Y al resto de mi familia por su incondicional apoyo.

Por último, a David, mi compañero de vida, por ser mi gran apoyo, por estar siempre a mi lado, hacerme feliz y demostrarme que puedo contar con él siempre, por su paciencia y comprensión. Esta Tesis no hubiera visto la luz sino es por sus constantes impulsos a seguir cuando más cansada estaba.

Y a todos los que me han ayudado de una u otra manera en la elaboración de esta Tesis y que no he nombrado anteriormente.

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RESUMEN

El desarrollo de Internet, la incorporación de nuevos canales de comunicación y distribución (canal móvil, redes sociales o chat) y la disponibilidad de nuevos dispositivos (*tablets,* teléfonos o *wearables*) están cambiando los hábitos de compra de los consumidores, propiciando que las empresas desarrollen nuevas estrategias para afrontar dichos cambios. Se ha pasado de vender solo en la tienda física a vender desde múltiples plataformas dando lugar al nuevo comercio omnicanal. La omnicanalidad hace referencia a la estrategia centrada en el cliente que integra todos los canales disponibles para crear una experiencia de compra sin fisuras aumentando así la conveniencia para el usuario durante todo el proceso de compra. Esta eliminación de las fronteras entre la tienda física y el entorno *online* para el cliente exige a los responsables del comercio minorista un diseño adecuado de la estrategia que optimice la generación de valor añadido de la inversión tecnológica. Por ello, el objetivo principal de esta tesis doctoral es analizar cómo influye la tecnología en el comportamiento de compra de los consumidores en un entorno omnicanal.

Para lograr este objetivo se han realizado cuatro estudios. En los tres primeros se ha utilizado una muestra de 628 consumidores españoles que han utilizado al menos dos canales durante su último proceso de compra en la tienda Zara. En el último estudio, la muestra consta de 1043 consumidores españoles que han utilizado su *smartphone* dentro de la tienda física.

En la primera investigación se plantea un modelo a partir del modelo UTAUT2 con el fin de identificar los principales factores que influyen en la aceptación y uso del comercio omnicanal por parte de los consumidores. Los resultados de la aplicación de modelos de ecuaciones estructurales muestran que el perfil innovador del cliente, el esfuerzo esperado de poder usar distintos canales de comunicación a lo largo del proceso de compra y las expectativas de rendimiento son los factores que más influyen en la intención de compra en una tienda de moda omnicanal.

En la segunda investigación se identifican distintos perfiles de clientes omnicanal a través de un análisis clúster. Para ello, se utilizan como criterios de segmentación sus motivaciones hedónicas, utilitarias y la norma social. De los resultados se desprenden y

se caracterizan tres perfiles de clientes omnicanal: los que rechazan, los indiferentes y los entusiastas.

En la tercera investigación se analiza la influencia de las nuevas tecnologías integradas dentro de la tienda física en la intención de compra del consumidor, valorando cuáles son las más interesantes para el consumidor y analizando los datos obtenidos desde la perspectiva de género. Los resultados muestran que las tecnologías dentro de la tienda, en general, las instaladas en el probador y el uso del *smartphone* del cliente dentro de la tienda afectan positivamente a la intención de compra en una tienda omnicanal. Asimismo, no se han encontrado diferencias estadísticamente significativas en la intención de compra entre hombres y mujeres.

En la cuarta investigación se identifican los factores clave que influyen en la intención de uso y uso real del smartphone dentro de la tienda física. La muestra se subdivide por edad, diferenciando entre consumidores *millennials* y no *millennials* para comprobar si existen diferencias estadísticamente significativas en sus comportamientos. Los resultados de los modelos estructurales ponen de manifiesto que el hábito, las expectativas de rendimiento y las motivaciones hedónicas son las variables que más influyen en la intención de uso del móvil dentro de la tienda física para ambos grupos. Por otra parte, cuando se analiza el efecto de la intención de uso y del hábito en el comportamiento real del consumidor se encuentran diferencias estadísticamente significativas entre *millennials* y no *millennials*.

La tesis concluye con las principales contribuciones de este trabajo, implicaciones teóricas y prácticas, así como futuras líneas de investigación. Los resultados obtenidos de este trabajo pueden ser especialmente interesantes para el comercio minorista y ayudarle en su proceso de adaptación a las exigentes demandas de estos nuevos consumidores conectados.

ABSTRACT

The advance of the Internet and the emergence of new communication and distribution channels (mobile, social media, chats) and devices (tablets, smartphones, wearables) are changing consumers’ shopping habits and behavior, prompting retailers to develop new strategies. As a result, retailers have gone from selling only in the physical store to selling from multiple platforms, giving rise to the new phenomenon of omnichannel retailing. Omnichannel refers to the customer-centric strategy that integrates all available channels to create a seamless shopping experience that increases the convenience for the customer throughout the shopping process. This blurring of the boundaries between the offline and online channels for customers requires retailers to design strategies that optimize the generation of added value by the technological investment. This doctoral thesis thus sought to analyze how technology influences consumers’ purchasing behavior in an omnichannel environment

To achieve this objective, four studies were carried out. For the first three, the sample consisted of 628 Spanish customers of the store Zara who had used at least two of the store’s channels in their most recent customer journey. In the fourth, the sample consisted of 1,043 Spanish customers who had used their smartphones in-store.

In the first study, a UTAUT2-based model is developed to identify the main factors influencing the acceptance and use of omnichannel retailing by consumers. The results of the structural equation modelling show that personal innovativeness, effort expectancy with regard to the use of different communication channels throughout the customer journey, and performance expectancy are the main factors influencing purchase intention in an omnichannel clothing store.

The second study identifies omnichannel customer profiles by means of cluster analysis, focusing on hedonic motivations, utilitarian motivations, and the social norm. Based on the results, three omnichannel customer profiles are identified: reluctant omnishoppers, indifferent omnishoppers, and omnichannel enthusiasts. Their respective characteristics are described.

The third study looks at the influence of the integration of new technologies on customers’ purchase intention in physical stores, examining which are the most

interesting technologies for the customer and analyzing them from a gender perspective. The results show that in-store technology, fitting-room technology, and the in-store use of customers' own smartphones all positively affect purchase intention in an omnichannel store. Moreover, no significant differences were found in purchase intention between men and women.

The fourth study identifies the key factors influencing customers' intention to use their smartphone in-store and their actual behavior. The sample is subdivided by age, differentiating between millennial and non-millennial consumers to determine whether there are statistically significant differences in their behavior. The results of the structural models show that habit, performance expectancy, and hedonic motivations are the variables that most influence the intention to use one's smartphone in-store for both groups. The only statistically significant differences found between millennials and non-millennials had to do with the effect of the intention to use one's smartphone and habit on the customer's actual behavior.

The thesis concludes with a discussion of its main contributions, the theoretical and managerial implications, and recommendations for future lines of research. The findings of this research are especially interesting for retailers and could help them adapt their businesses to the demands of today's new connected consumers.

Chapter 1

Introduction

1.1. Research justification

The advance of the Internet and new technologies over the last decade has transformed the retailing panorama. More and more channels are emerging, causing consumers to change their habits and shopping behavior (Piotrowicz and Cuthbertson 2014; Chopra 2015). Omnichannel is one of the most important retail revolutions of recent years, impacting a variety of areas, such as marketing, retailing, communication, or information systems. An omnichannel strategy is a form of retailing that, by enabling real interaction, allows customers to shop across channels anywhere and at any time, thereby providing them with a unique, complete, and seamless shopping experience that breaks down the barriers between offline and online channels (Verhoef, Kannan, and Inman 2015).

Retail is currently undergoing multiple changes at dizzying speed. Until the 1990s, retail was synonymous with selling primarily in a physical store, whether it was a local business or a chain store at a mall. The arrival of e-commerce ushered in a new non-physical sales channel to join telephone, mail, and television sales, giving rise to the concept of multichannel retailing. In this form of retail, customers could use multiple channels, although they operated independently. It was not until the first decade of this century, with the democratization of the Internet and the emergence of smartphones, that consumers began to intensify their online shopping and, at the same time, perceive discrepancies resulting from the channels' independent management (e.g., different promotions for the same product at the physical and online stores). In response, businesses began to devise solutions to integrate their offline and online sales. This integration was the next step in the evolution of retail, and it resulted in omnichannel retailing, the stage of maximum integration and cooperation between and across channels that all businesses seek to achieve and, crucially, that consumers are demanding (Cummins, Peltier, and Dixon 2016; Yurova et al. 2017).

Consumers have also evolved, changing their habits and shopping behavior. Today's consumers are more informed, more demanding, and more rational in their purchases, as well as more likely to use multiple devices and screens (Cook 2014). They are also more active and likely to engage with brands. Omnichannel consumers not only have access to the channel, they are in it – and may even be in more than one channel at a time – thanks to the possibilities afforded by technology and mobility. These types of customers are characterized by their simultaneous use of multiple channels, devices, and platforms to browse and purchase products.

Given this state of affairs, the idea for this thesis arose from the need to study this new phenomenon in order to provide retailers with solutions to tackle the challenges posed by this new panorama with guarantees. The economic crisis of 2008 was exacerbated by the growing preference for online shopping and deep changes in consumer behavior. Many retailers do not have specialized marketing departments. It is thus of interest for academia to study their problems and provide solutions aimed at enhancing their adaptation to the new connected retail context and their ability to meet their customers' needs and demands.

As shown in Figure 1, when the research for this thesis was first begun, there was virtually no literature on omnichannel retail. It was thus of great interest to help fill that gap. The first papers on omnichannel retail were published in 2014, and they have grown exponentially over the four years during which this thesis has been written. This bears witness to its interest for the research community insofar as it deals with a topic that represents the present and future of retail.

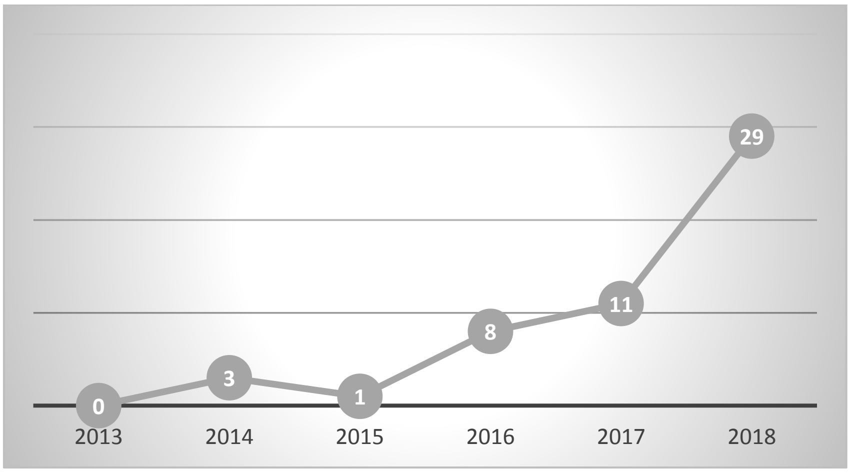

Figure 1. Evolution of research articles

Source: Scopus

Overall, this dissertation tries to shed light on this issue by providing new insights into omnichannel retailing, the different kinds of omnishoppers, and how in-store technologies, in general, and smartphones, in particular, influence customers' purchase intention.

1.2. Structure of the thesis

This dissertation aims to provide an overview of the state of the art of the new omnichannel phenomenon. To this end, the following chapters address several issues regarding omnichannel retailing and customer behavior. The first study aims to further understanding of the acceptance and simultaneous use of the various channels in an omnichannel environment. The second looks at the new omnichannel customers and their buying behavior, generating an omnishopper segmentation. The third delves deeper into the in-store use of technology and seeks to determine which technologies installed in the physical store most influence customers' purchase intention. The fourth and final study seeks to identify how in-store smartphone use influences customers' purchase intention and actual behavior in an omnichannel environment. To this end, it tests several hypotheses based on the unified theory of acceptance and use of technology (UTAUT) model. Finally, Chapter 6 summarizes the main conclusions and identifies limitations and future lines of research (Figure 2).

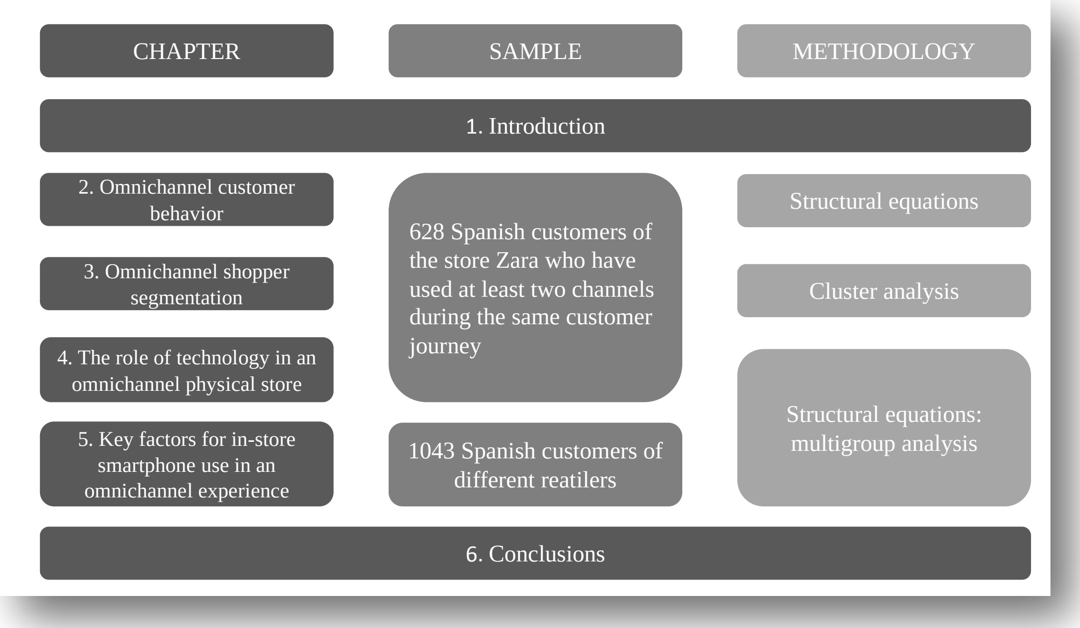
CHAPTER
SAMPLE
METHODOLOGY
1. Introduction
2. Omnichannel customer behavior
3. Omnichannel shopper segmentation
4. The role of technology in an omnichannel physical store
5. Key factors for in-store smartphone use in an omnichannel experience
628 Spanish customers of the store Zara who have used at least two channels during the same customer journey
1043 Spanish customers of different reatilers
Structural equations
Cluster analysis
Structural equations: multigroup analysis
6. Conclusions

Figure 2. Structure and contents of the dissertation

Chapter 2, entitled "Omnichannel Customer Behavior: Key Drivers of Technology Acceptance and Use and Their Effects on Purchase Intention," aims to identify the factors that influence omnichannel consumers' behavior through their acceptance of and intention to use new technologies during the shopping process. To this end, an original model was developed to explain omnichannel shopping behavior based on the variables used in the UTAUT2 model and two additional factors: personal innovativeness and perceived security. The model was tested with a sample of 628 Spanish customers of the store Zara who had used at least two channels during their most recent shopping journey. The results indicate that the key determinants of purchase intention in an omnichannel context are, in order of importance: personal innovativeness, effort expectancy, and performance expectancy. The theoretical and managerial implications are discussed.

Chapter 3, "Omnichannel shopper segmentation in the fashion industry," tries to identify groups of omnishoppers based on their main motivations (usefulness, enjoyment, and social influence) and to characterize the omnishopper clusters. To this end, a total of 628 customers of an omnichannel clothing store were surveyed, and the data were analyzed using cluster analysis. The results reveal three different segments – reluctant omnishoppers, omnichannel enthusiasts, and indifferent omnishoppers. They also point to significant differences in gender, age, income level, and omnichannel behavior among these segments. In contrast, no differences were found in the use of channels and devices.

Chapter 4, called “The role of technology in an omnichannel physical store,” takes a deeper look at the introduction of technologies in retail, but this time in the physical store. This chapter’s aim was twofold: first, to analyze how the intention to use different interactive technologies in a clothing store affects purchase intention; and, second, to test the moderating effect of gender on this relationship. For these purposes, an original model was developed and tested with 628 omnichannel customers. A multi-group analysis was performed to compare the results between two groups: men and women. The results show that the incorporation of new technologies in the physical store positively affects purchase intention, but no significant differences were found between the two groups. This chapter furthers understanding of the importance of the new connected retail system and offers new insights for both the theoretical framework and businesses.

Chapter 5, “Key Factors for In-store Smartphone Use in an Omnichannel Experience,” likewise has a twofold aim. First, it seeks to identify the key factors influencing customers’ intentions to use their smartphone in-store and their actual behavior. Second, it sets out to test the moderating effect of age, differentiating between millennials and non-millennials, as millennials are considered digital natives and early adopters of new technologies. The UTAUT2 model is applied to a sample of 1,043 Spanish customers and tested using structural equations. A multi-group analysis is performed to compare the results between the two groups. The results show that the model explains both the behavioral intention to use a smartphone in a brick-and-mortar store and use behavior. The UTAUT2 predictors found to be the most important were habit, performance expectancy, and hedonic motivation. The study shows that the only difference between millennials and non-millennials with regard to the use of smartphones in-store are the effects of behavioral intention and habit on use behavior. The chapter adds to the existing knowledge by providing evidence in support of the validity of UTAUT2 as an appropriate theoretical basis to effectively explain behavioral intention, specifically the in-store use of smartphones.

The results of the previous studies have been published in five research articles in high-impact international journals.

1.3 Theoretical Framework

The omni-channel concept is perhaps one of the most important revolutions in business strategy in recent years, with both practical and theoretical implications (Bell, Gallino, & Moreno, 2014; Brynjolfsson, Hu, & Rahman, 2013; Piotrowicz & Cuthbertson, 2014; Verhoef, Kannan, & Inman, 2015). Firms compete in global markets, and markets have been transformed by technology. Advances in information technology and communication have led to an increase in the number of retailing formats through which consumers can contact a company during their customer journey. In addition to traditional physical and online stores, new mobile channels (mobile devices, branded apps, social media, and connected objects) and touch-points have transformed the consumer buying process (Juaneda-Ayensa, Mosquera, & Sierra Murillo, 2016; Melero, Sese, & Verhoef, 2016; Picot-Coupey, Huré, & Piveteau, 2016; Piotrowicz & Cuthbertson, 2014; Verhoef et al., 2015).

Although the term omni-channel first appeared eight years ago (Rigby 2011), the concept remains unclear, due to the indistinct use of the concepts multi-, cross-, and omni-channel in the literature (Beck and Rygl 2015; Klaus 2013). While multi-channel refers to having a presence on several channels that then work separately, in an omni-channel environment, the channels work together, such that customers can use digital channels for research and experience the physical store in a single transaction process (Piotrowicz and Cuthbertson 2014). Because the channels are jointly managed, customers expect to have the same brand experience wherever and whenever they interact the company (Piotrowicz and Cuthbertson 2014).

This new term originated among business practitioners, but it has recently drawn attention in academia as well. The ways in which omni-channel retailing is changing consumer habits and shopping behavior have made it the third and current wave of retailing (Peltola, Vainio, and Nieminen 2015). Omni-channel management continues to be a big challenge for brands, because customers are more demanding and expect companies to provide them with a superior shopping experience during their customer journey. With the proliferation of mobile technologies and social media, this customer journey has become more complicated; the simultaneous use of different communication channels by customers is facilitating the emergence of new behaviors, such as showrooming (search offline, buy online) and webrooming (search online, buy offline).

1.3.1 What is, and is not, omni-channel? A conceptualization

As noted, the use of the concepts multi-, cross-, and omni-channel in academic articles is blurred (Beck and Rygl 2015; Klaus 2013). Many articles use multi-channel as an umbrella term to describe different strategies, regardless of how the channels are configured. To clarify this question, this section will offer a detailed review of the main literature on the omni-channel phenomenon.

Nowadays, customers tend to use more channels and touch-points during their shopping journey, whether in the search, purchase, or post-purchase stage (Weinberg, Parise, and Guinan 2007). Thus, channels are defined as the different touch-points through which the firm and the customer interact (Mehta, Dubinsky, & Anderson, 2002; Neslin et al., 2006). Channel management refers to the process by which a company analyzes, organizes, and controls its channels (Mehta, Dubinsky, and Anderson 2002). This channel management can range from the complete separation of channels to total integration with full coordination, with a wide range of gradations and strategies between the two extremes (Neslin et al., 2006). The main differences between these concepts are the different degrees to which the customer can trigger channel interaction and the retailer can control channel integration (Beck and Rygl 2015).

Thus, in multi-channel retailing, the retailer offers several channels as independent entities in order to align them with specific targeted customer segments (Zhang et al. 2010; Frazer and Stiehler 2014; Picot-Coupey, Huré, and Piveteau 2016). The next stage in the evolution of retailing is cross-channel, which includes the first attempts to integrate brick-and-mortar stores and web channels and enhance the cross-functionality between them (Cao 2014; Cao and Li 2015; Harris 2012). The final stage to date is omni-channel, which seeks to create a holistic shopping experience by merging various touch-points, allowing customers to use whichever channel is best for them at whatever stage of the customer journey they are in (Harris 2012). Table 1 shows the main differences between these three concepts (Table1).

Table 1. Differences between multi-, cross-, and omni-channel retailing. Source: Based on Rigby (2011), Piotrowicz and Cuthbertson (2014), Beck and Rygl (2015), Verhoef et al. (2015), Picot-Coupey et al. (2016) and Juaneda-Ayensa et al. (2016)

	Multi-channel	**Cross-channel**	**Omni-channel**
Concept	Division between the channels	Partial integration of some channels	Integration of all widespread channels
Degree of integration	None	Enables switching between certain channels and touch-points	Total
Channel scope	Retail channels: store, website, and mobile	Retail channels: store, website, mobile, social media, customer touch-points	Retail channels: store, website, mobile, social media, customer touch-points
Customer relationship focus: brand vs. channel	Customer-retail channel focus	Customer-retail channel focus	Customer-retail channel-brand focus
Objectives	Channel objectives (sales per channel, experience per channel)	By channel or connected channels and touch-points	All channels work together to offer a holistic customer experience
Channel management	Per channel	By channel or connected channels and touch-points	Cross-channel
	Management of channels and customer touch-points geared toward optimizing the experience with each one	Perceived partial interaction with the brand	Synergetic management of the channels and customer touch-points geared toward optimizing the holistic experience

	Perceived interaction with the channel		Perceived interaction with the brand
Customers	No possibility of triggering interaction	Can trigger partial interaction	Can trigger full interaction
	Use channels in parallel	Use channels in parallel	Use channels simultaneously
Retailers	No possibility of controlling integration of all channels	Control partial integration of all channels	Control full integration of all channels
Sales people	Do not adapt selling behavior	Adapt selling behavior using different arguments depending on the channel	Adapt selling behavior using different arguments depending on each customer’s needs and knowledge of the product
Data	Data are not shared across channels	Data are partially shared across channels	Data are shared across channels

Recently, Verhoef et al. defined omni-channel management as “the synergetic management of the numerous available channels and customer touch-points intended to optimize the customer experience and performance across channels” (Verhoef et al., 2015, p.176).

As can be seen in Figure 3, retailing is constantly evolving; the different concepts reflect this process and are connected. This evolution occurs as new communication channels and touch-points appear, in order to facilitate and personalize customers’ shopping experience.

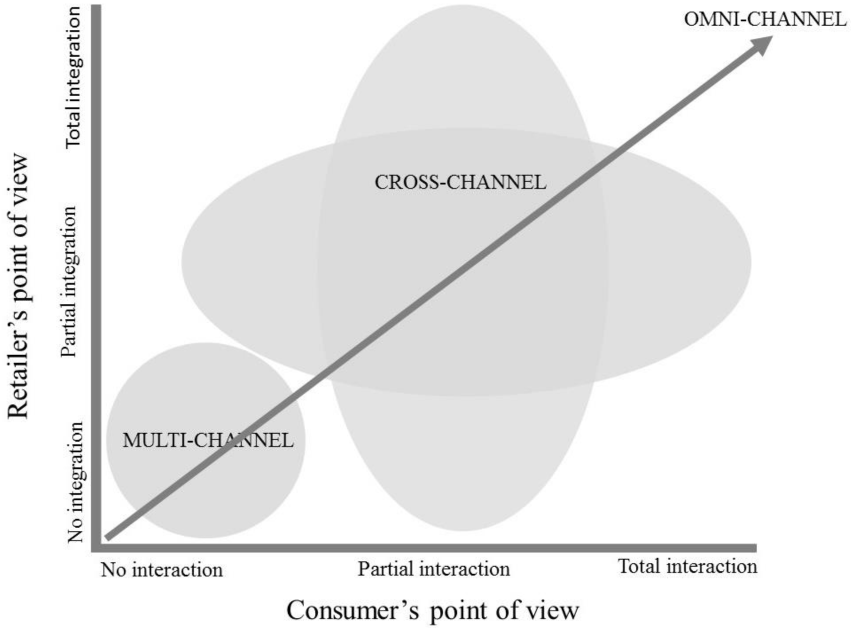
OMNI-CHANNEL
CROSS-CHANNEL
MULTI-CHANNEL
Retailer’s point of view
Total integration
Partial integration
No integration
No interaction
Partial interaction
Total interaction
Consumer’s point of view

Figure 3. Evolution of retailing: Different degrees of channel and touch-point interaction/integration

From the customer’s point of view, multi-channel retailing takes place when, for example, the customer cannot redeem an e-coupon at a physical store. From the retailer’s viewpoint, it occurs when the retailer cannot share data across channels or integrate the inventory of the different channels. The next step in the evolution of retailing is cross-channel retailing. In this case, there may be different relationships between channel integration and interaction. For instance, a customer may receive a coupon message from the mobile shop that can be used at a physical store. Finally, in an omni-channel environment, customers can combine different online channels and touch-points (e.g., the website, social media, and the mobile app) with the offline channel throughout their customer journey, thereby changing how they are served before, during, and after the purchase (Ostrom et al. 2015). For instance, shoppers might search for information on a product using the mobile app, buy the product on the website, and pick the product up or return it at a physical store. As this example illustrates, consumers can switch between channels without interrupting their transaction stage. From the retailer's viewpoint, if the retailer can share customer information, inventory, or pricing across all channels, then the channels are fully integrated, and the brand is carrying out a complete omni-channel strategy (Beck and Rygl 2015).

1.3.2 An integrative omni-channel framework

Omni-channel strategy refers to an ideal strategy that offers several channels in accordance with the latest technological developments and current consumer behavior (Verhoef et al., 2015; Zhang et al., 2010). Omni-channel marketing is characterized by the use of a customer-centric approach with a view to offering consumers a holistic shopping experience (Hansen and Sia 2015; Gupta, Lehmann, and Stuart 2004; Shah et al. 2006) by allowing them to use several consumer-store interaction channels simultaneously (e.g., use of mobile Internet access in a physical retail store to research products and/or compare prices) (Lazaris & Vrechopoulos, 2014; Verhoef et al., 2015).

Another difference with regard to multi-channel retailing is that the barriers between channels are blurred. If all channels are connected, customers can start their journey on one channel and complete it on another, resulting in a seamless experience that increases convenience and engagement and ensures a consistent brand experience (Eaglen 2013). Finally, omni-channel management is also related to data integration. It offers new potential data sources, particularly via mobile channels and social media. This provides an unprecedented opportunity to understand not just customer transactions but also customer interactions, such as store visits, Facebook likes, website searches, or check-ins at nearby establishments.

The limitation is no longer the lack of data, but the ability to analyze the data obtained (Brynjolfsson, Hu, and Rahman 2013). If a brand is able to integrate all the information on each customer, it can provide him or her with a personalized experience. Retailers need to understand who their customers are, know what they like, deliver what they need, and reach them through their preferred channels in order to achieve greater customer loyalty (Melero, Sese, and Verhoef 2016).

However, previous studies have identified negative aspects of multi-channel retailing, such as cannibalization and free-riding behavior (Heitz-Spahn 2013). According to Peltola et al. (2015), there are two keys to providing a good omni-channel experience that prevents such behavior: reducing the risk of losing customers during the customer journey by providing a unified, integrated service and customer experience; and encouraging customers to stay with the company as they proceed in their customer journey by providing seamless and intuitive transitions across channels at each touch-point to accommodate their preferences, needs, and behavior.

This new form of retailing is not equally developed in all industries. The fashion, travel, and financial service industries have begun to implement this strategy with good results (Gao & Yang, 2016; Harvey, 2016; Verhoef et al., 2015). The major challenge for retailers when it comes to implementing a good omni-channel strategy is to determine how to offer their customers a superior shopping experience throughout the shopping journey. To achieve this goal, companies should define an integrated strategy in accordance with their industry, determining what is required to embrace mobile technology, unify pricing and product information, unify customer communications, integrate supply chain management and make it more flexible, and ensure integrated data management.

1.3.3 Enhancing the customer experience in an omni-channel environment

We live in a customer-driven world, where the informed customer, not the retailer, dictates much of the desired content. Retailers can no longer passively stand by and hope their product content finds the right shopper. These new customers are connected customers, who want to have multiple possibilities for interacting with the company throughout the shopping journey and expect a superior shopping experience (Cook 2014). They want to use all channels simultaneously, not each channel in parallel (Lazaris and Vrechopoulos 2014), because they do not think of channels in isolation but rather combine them and make decisions based on their mood and lifestyle demands (Blázquez 2014).

They have specific characteristics that make them special: on average, they spend more money (Venkatesan, Kumar, & Ravishanker, 2007), buy more frequently (Kumar and Venkatesan 2005), and have a longer customer lifetime value (Neslin & Shankar, 2009) than conventional shoppers. However, they are also more demanding and expect more from their shopping experiences (Mathwick, Malhotra, and Rigdon 2002). Their shopping behavior is more exploratory, as they seek more variety than consumers who buy in a single channel (Rohm and Swaminathan 2004; Kumar and Venkatesan 2005). Thus, the customer journey for these new omni-shoppers is less linear or fixed and more fluid due to their use of different channels and touch-points to research, locate, and purchase products (Aubrey and Judge 2012). Furthermore, omni-channel customers do not use these different touch-points in any particular chronological order during the five-stage consumer decision-making process (need recognition, information search, evaluation of alternatives, purchase decision, and post-purchase behavior) (Engel, Blackwell, and Miniard 1985). In order to offer a superior experience, retailers should thus embrace new technologies that help deliver a holistic shopping process to customers, making it possible to personalize content and make special offers and recommendations to each customer in order to enhance the experience.

As already noted, technology has been a catalyst in changing consumer attitudes and behaviors (Aubrey and Judge 2012). Technological developments are the primary drivers for companies to adopt an omni-channel strategy (Ansari, Mela, and Neslin 2008), specifically: smart mobile devices (smartphones and tablets), related software and services (apps, mobile payments, e-coupons, digital flyers, and location-based services) (Aubrey & Judge, 2012; Brynjolfsson et al., 2013; Hansen & Sia, 2015; Piotrowicz & Cuthbertson, 2014; Verhoef et al., 2015), and social media (Piotrowicz and Cuthbertson 2014; Hansen and Sia 2015). In this sense, Bodhani investigated how digital technologies can reinvent retail shopping and concluded that stores will become a place for brand and consumer experiences and new technologies (Bodhani 2012). In an omni-channel environment, mobile technologies are crucial due to the gap between offline and online channels. Mobile devices can bridge that gap by bringing the online experience into the brick-and-mortar store. In addition, the combination of interactive and entertaining technologies attracts more consumers and improves the shopping experience (Demirkan and Spohrer 2014; Pantano and Viassone 2015; Papagiannidis et al. 2013; Poncin and Ben Mimoun 2014). The growing role of in-store technologies also creates an additional dimension. This includes technologies for customers such as free WiFi, interactive screens, augmented reality, virtual mirrors/fitting rooms, digital signage, beacons, intelligent self-service kiosks, and QR codes, in addition to customers' own mobile devices. There are also technologies for staff, such as tablets or touch screens to help sellers in different ways during the buying process (Piotrowicz and Cuthbertson 2014), e.g., by enabling them to answer customers' questions by showing them videos, reviews, or previous customers' opinions or to track inventory in all stores in real time through RFID tags. However, due to the growth of new technologies and the potential for customer saturation, retailers must focus on technology that is relevant for consumers and that really provides value (Blázquez 2014). In this regard, retailers should aim to unify customer information, product availability, product information, and pricing at all touch-points across all channels.

These technological developments have helped change the nature of customer-retailer interactions, giving rise to new shopping behaviors. Two of the most common omni-channel behaviors are showrooming and webrooming. The first is defined by Rapp et al. as the practice of "using mobile technology while in-store to compare products for potential purchase via any number of channels" (Rapp et al., 2015, p.360). It usually takes place during the product evaluation stage, when the product's physical attributes are important and an in-person evaluation can reduce the perceived risk of purchase, even if the purchase itself is ultimately made online (Wolny and Charoensuksai 2014). At the other end of the spectrum, webrooming occurs when shoppers compare prices, features, opinions, and guarantees online, but ultimately make the purchase offline (Wolny and Charoensuksai 2014). This behavior occurs mainly once the initial product selection has been made.

In order to mitigate such behaviors, brands are starting to offer their customers solutions that combine the best of both online and offline shopping. Retailers are redefining the brand experience through new formats such as "click-and-collect," "delivery in 24 hours," "in-store ordering, home delivery," "order online, return to store," "click in store," and other combinations of online and traditional retail activities that facilitate and improve the shopping process and the customer experience (Bell, Gallino, and Moreno 2014).

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Chapter 2

Omnichannel Customer Behavior: Key Drivers of Technology Acceptance and Use and Their Effects on Purchase Intention

2.1 Introduction

In recent years, advances in technology have enabled further digitalization in retailing, while also posing certain challenges. More specifically, the evolution of interactive media has made selling to consumers truly complex (Crittenden et al., 2010; Medrano et al., 2016). With the advent of the mobile channel, tablets, social media, and the integration of these new channels and devices in online and offline retailing, the landscape has continued to evolve, leading to profound changes in customer behavior (Verhoef et al., 2015).

A growing number of customers use multiple channels during their shopping journey. These kinds of shoppers are known as *omnishoppers*, and they expect a seamless experience across channels (Yurova et al., 2016). For example, an omnishopper might research the characteristics of a product using a mobile app, compare prices on several websites from their laptop, and, finally, buy the product at a physical store. This consumer 3.0 uses new technology to search for information, offer opinions, explain experiences, make purchases, and talk to the brand. In an omnichannel environment, channels are used seamlessly and interchangeably during the search and purchase process, and it is difficult if not virtually impossible for retailers to control this use (Neslin et al., 2014; Verhoef et al., 2015).

Lu et al. (2005) consider mobile commerce to be the second wave of e-commerce. We believe that omnichannel commerce could be the third wave. Most studies on end-user beliefs and attitudes are conducted long after the systems have been adopted; while initial adoption is the first step in long-term usage, the factors affecting usage may not be the same as those influencing the initial adoption, or the degree of their effect may vary (Lu et al., 2005). Few papers have addressed the issue of pre-adoption criteria for omnishoppers, and explanations of why users behave in a particular way toward information technologies have predominantly focused on instrumental beliefs, such as perceived usefulness and perceived ease of use, as the drivers of usage intention. Previous papers in behavioral science and psychology suggest that holistic experiences (Schmitt, 1999) with technology, as captured in constructs such as enjoyment, flow, and social image, are potentially important explanatory variables in technology acceptance.

This paper aims to advance the theoretical understanding of the antecedents of omnishoppers' technology acceptance and use in relation to early adoption of omnichannel stores. To this end, it focuses on the acceptance and use of the technology that customers use in the "information prior to purchase" and "purchase" stages. We carried out this research in the fashion word, because it is one of the earliest industries to adopt this new strategy (PwC et al., 2016). This paper presents a new model of technology acceptance and use based on UTAUT2 (Venkatesh et al., 2012), extended to include two new dimensions – *personal innovativeness* and *perceived security* – and adapted to a specific context, i.e. the omnichannel environment.

Our research has important theoretical and managerial implications since studying the drivers of omnishoppers' shopping behavior would allow firms to follow different strategies in omnichannel customer management aimed at increasing customer satisfaction by offering an integrated shopping experience (Lazaris & Vrechopoulos, 2014; Neslin et al., 2014; Lazaris et al., 2015; Verhoef et al., 2015).

To achieve this goal, this paper proceeds as follows: first, we review the literature on the topic of omnichannel consumer behavior and the drivers of omnichannel shopping. Second, we develop a new theoretical model. Third, we describe and explain the empirical study. Fourth, we examine the results and implications of the findings and derive our conclusions. Fifth and finally, we address the limitations of the research and offer further research proposals.

2.2 Literature review and hypotheses

2.2.1 Omnichannel retailing context

Recent years have witnessed the emergence of new retailing channels. Thanks to new technologies, retailers can integrate all the information these channels provide, a phenomenon known as omnichannel retailing (Brynjolfsson et al., 2013).

The omnichannel concept is perceived as an evolution of multichannel retailing (Table 1). While multichannel retailing implies a division between the physical and online store, in the omnichannel environment, customers move freely among channels (online, mobile devices, and physical store), all within a single transaction process (Melero et al., 2016). Omnis is a Latin word meaning “all” or “universal,” so omnichannel means “all channels together” (Lazaris & Vrechopoulos, 2014.). Because the channels are managed together, the perceived interaction is not with the channel, but rather the brand (Piotrowicz & Cuthbertson, 2014).

Table 1. Multichannel vs. omnichannel

	Multichannel strategy	Omnichannel strategy
Concept	Division between the channels	Integration of all widespread channels
Degree of integration	Partial	Total
Channel scope	Retail channels: store, website, and mobile channel	Retail channels: store, website, mobile channel, social media, customer touchpoints
Customer relationship focus: brand vs. channel	Customer-retail channel focus	Customer-retail channel-brand focus
Objectives	Channel objectives (sales per channel, experience per channel)	All channels work together to offer a holistic customer experience
Channel management	Per channel Management of channels and customer touchpoints geared toward optimizing the experience with each one Perceived interaction with the channel	Cross-channel Synergetic management of the channels and customer touchpoints geared toward optimizing the holistic experience Perceived interaction with the brand
Customers	No possibility of triggering interaction Use channels in parallel	Can trigger full interaction Use channels simultaneously
Retailers	No possibility of controlling integration of all channels	Control full integration of all channels
Sales people	Do not adapt selling behavior	Adapt selling behavior using different arguments depending on each customer's needs and knowledge of the product

Source: based on Rigby (2011), Piotrowicz and Cuthbertson (2014), Beck and Rygl (2015), and Verhoef et al. (2015).

The dominant characteristic of the omnichannel retailing phenomenon is that the strategy is centered on the customer and the customer's shopping experience, with a view to offering the shopper a holistic experience (Gupta et al, 2004; Shah, Rust et al., 2006).

In addition, the omnichannel environment places increasing emphasis on the interplay between channels and brands (Verhoef et al., 2015). Neslin et al. (2014) describe multiple purchase routes to show how this interplay works. Thus, not only is the omnichannel world broadening the scope of channels, it also integrates consideration of customer-brand-retail channel interactions.

Another important change is that the different channels are blurring together as the natural boundaries that once separated them begin to disappear. They are thus used seamlessly and interchangeably during the search, purchase, and post-purchase process, and it is difficult or virtually impossible for firms to control this usage (Verhoef et al., 2015).

2.2.2 Consumer attitudes toward technology in an omnichannel context

Due to the increasing use of new technologies in retailing, consumer shopping habits and expectations are also changing. A new multi-device, multiscreen consumer has emerged who is better informed and demands omnichannel brands. Research has shown that omnichannel consumers are a growing global phenomenon (Schlager & Maas, 2013).

Customers expect a consistent, uniform, and integrated service or experience, regardless of the channel they use; they are willing to move seamlessly between channels – traditional store, online, and mobile – depending on their preferences, their current situation, the time of day, or the product category (Piotrowicz & Cuthbertson, 2014; Cook, 2014). The omnishopper no longer accesses the channel, but rather is always in it or in several at once, thanks to the possibilities offered by technology and mobility. These new shoppers want to use their own device to perform searches, compare products, ask for advice, or look for cheaper alternatives during their shopping journey in order to take advantage of the benefits offered by each channel (Yurova et al., 2016). In addition, omnichannel consumers usually believe that they know more about a purchase than the salespeople and perceive themselves as having more control over the sales encounter (Rippé et al., 2015).

Despite the increase recorded in research on information and communication technology (ICT) and multichannel, it is important to continue investigating in the field of omnichannel consumer behavior (Neslin et al., 2014; Verhoef et al., 2015) and, especially, to determine how consumers' attitudes toward technology influence the purchasing decision process in the new context (Escobar-Rodríguez & Carvajal-Trujillo, 2014).

2.2.3 Theory of acceptance and use of technology in an omnichannel context: model and hypothesis

Our research framework is based on an additional extension of the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) model (Venkatesh et al., 2012) that seeks to identify the drivers of technology acceptance and use during the shopping journey to purchase in an omnichannel environment. Following the literature review, we chose the UTAUT2 model because it provides an explanation for ICT acceptance and use by consumers (Venkatesh et al., 2012). UTAUT2 is an extension of the original UTAUT model that synthesizes eight distinct theoretical models taken from sociological and psychological theories used in the literature on behavior (Table 2) (Venkatesh et al., 2003). This theory contributes to the understanding of important phenomena such as, in this case, omnichannel consumers' attitudes toward technology and how they influence purchase intention in the shopping-process context. Under UTAUT2, a consumer's intention to accept and use ICT is affected by seven factors: performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivations, price value, and habit.

Table 2. Summary of models with constructs similar to those of UTAUT2

Theory/model	**Main constructs**	**Similar UTAUT2 construct**
Theory of reasoned action (TRA) (Fishbein & Ajzen, 1977)	Attitude toward behavior	
	Subjective norm	SI
Technology acceptance model (TAM) (Davis et al., 1989; Davis, 1989)	Perceived usefulness	PE
	Perceived ease of use	EE
	Subjective norm	SI
Motivational model (MM) (Davis, Bagozzi, & Warshaw, 1992)	Extrinsic motivation	PE
	Intrinsic motivation	
Theory of planned behavior (TPB) (Ajzen, 1991; Schifter & Ajzen, 1985)	Attitude toward behavior	
	Subjective norm	SI
	Perceived behavioral control	
Innovation diffusion theory (IDT) (Moore & Benbasat, 1991)	Relative advantage	PE
	Ease of use	EE
	Image	SI
	Visibility	FC
	Compatibility	
	Results demonstrability	
	Voluntariness of use	

Source: based on Escobar-Rodríguez & Carvajal-Trujillo, (2014). Note: SI (Social Influence); PE (Performance Expectancy); EE (Effort Expectancy); FC (Facilitating conditions).

As proposed by Venkatesh et al. (2012), UTAUT2 needs to be applied to different technologies and contexts, and other factors need be included, to verify its applicability, especially in the context of consumer behavior. To this end, building on previous work, in this study, we included personal innovativeness (San Martín & Herrero, 2012; Escobar-Rodríguez & Carvajal-Trujillo, 2014) and perceived security (Kim et al., 2008; Escobar-Rodríguez & Carvajal-Trujillo, 2014) to shed light on the degree to which the different factors included in the model influence consumers' purchase intentions.

2.2.4 The UTAUT2 model adapted to an omnichannel environment

As noted, our model was based on the UTAUT2 model.

Performance expectancy is defined as the degree to which using different channels and/or technologies during the shopping journey will provide consumers with benefits when they are buying fashion (Venkatesh et al., 2003; Venkatesh et al., 2012). Performance expectancy has consistently been shown to be the strongest predictor of behavioral intention (e.g., Venkatesh et al., 2003; Venkatesh et al., 2012; Escobar-Rodríguez & Carvajal-Trujillo, 2014) and purchase intention (Pascual-Miguel et al., 2015). In keeping with the literature, we proposed the following hypothesis:

H1. Performance expectancy positively affects omnichannel purchase intention.

Effort expectancy is the degree of ease associated with consumers' use of different touchpoints during the shopping process. Existing technology acceptance models include the concept of effort expectancy as perceived ease of use (TAM/TAM2) or ease of use (Innovation Diffusion Theory). According to previous studies (Karahanna & Straub, 1999), the effort expectancy construct is significant in both voluntary and mandatory usage contexts (Venkatesh et al., 2003) and positively affects purchase intention (Venkatesh et al., 2012). The following hypothesis was thus proposed for this construct.

H2. Effort expectancy positively affects omnichannel purchase intention.

Social influence is the extent to which consumers perceive that people who are important to them (family, friends, role models, etc.) believe they should use different channels depending on their needs. Social influence, understood as a direct determinant of behavioral intentions, is included as subjective norm in TRA, TAM2, and TPB, and as image in IDT (Davis et al., 1989; Davis, 1989; Fishbein & Ajzen, 1975; Schifter & Ajzen, 1985; Moore & Benbasat, 1991). The social influence, subjective norm and social norm constructs all contain the explicit or implicit notion that individual behavior is influenced by how people believe others will view them as a result of having used the technology (Venkatesh et al., 2003) and positively affect purchase intention (Venkatesh et al., 2012). Therefore, the following hypothesis was proposed:

H3. Social influence positively affects omnichannel purchase intention.

Habit is defined as the extent to which people tend to perform behaviors automatically because of learning (Venkatesh et al., 2012). This concept, which was included as a new construct in the UTAUT2 model, has been considered a predictor of technology use in many studies (e.g. Kim et al., 2005; Kim & Malhotra, 2005; Limayem et al., 2007) and directly influences purchase intention (Venkatesh et al., 2012; Escobar-Rodríguez & Carvajal-Trujillo, 2014). Based on the literature, the following hypothesis was thus proposed:

H4. Habit positively affects omnichannel purchase intention.

In order to analyze consumers' motivations for adopting omnichannel behavior, we based our framework on the extended literature used in retailing. Previous research on shopping behavior suggests that customers use different channels at each stage of the shopping process to meet utilitarian and hedonic needs at the lowest cost relative to benefits, in other words, to maximize value (e.g. Balasubramanian et al., 2005; Noble et al., 2005; Konuş et al., 2008).

Shopping value can be both hedonic and utilitarian (Babin et al., 1994). Hedonic motivations are associated with adjectives such as fun, pleasurable, and enjoyable (e.g. Holbrook & Hirschman, 1982; To et al., 2007; Kim, J., & Forsythe, 2007; Venkatesh et al., 2012). In contrast, utilitarian motivations are rational and task-oriented (Batra & Ahtola, 1991). Both dimensions are important because they are present in all shopping experiences and consumer behavior (Jones et al., 2006). Items such as clothing are classified in the highly hedonic product category due to their symbolic, experimental, and pleasing properties (Crowley et al., 1992). Consumers are more likely to select a physical store when they shop for hedonic fashion goods because strong physical environments elevate mood by providing opportunities for social interaction, product evaluation, and sensory stimulation (Nicholson et al., 2002). However, recent data show that consumers consider online fashion shopping to be a pleasurable activity and spend their leisure time searching for clothes using this medium (Blázquez, 2014).

In relation to technology acceptance and use, while utilitarian motivation was included as part of the performance expectancy construct in keeping with Venkatesh et al. (2003), hedonic motivation was included as a separate construct in UTAUT2 (Venkatesh et al., 2012). Hedonic motivation is defined as the fun or pleasure derived from using a technology, and it has been shown to play an important role in determining technology acceptance and use (Brown & Venkatesh, 2005). Numerous papers on ICT have demonstrated the influence of hedonic motivation on the intention both to use a technology and to purchase it (Van der Heijden, 2004; Thong et al., 2006). Therefore, the following hypothesis was proposed:

H5. Hedonic motivations positively affect omnichannel purchase intention.

2.2.4.1 External variables applied in the extension of UTAUT2

When shoppers come into contact with a new technology or innovation, they have the opportunity to adopt or refuse it. Prior research has shown that innovative multichannel customers prefer to explore and use new alternatives (e.g., Steenkamp & Baumgartner, 1992; Rogers, 1995; Konuş et al., 2008). In addition, several studies in the e-commerce literature have demonstrated the important role that innovativeness plays in purchase intention in different contexts (e.g., Herrero & Rodriguez del Bosque, 2008; Lu et al., 2011; San Martín & Herrero, 2012; Escobar-Rodríguez & Carvajal-Trujillo, 2014).

Personal innovativeness is defined as the degree to which a person prefers to try new and different products or channels and to seek out new experiences requiring a more extensive search (Midgley & Dowling, 1978). Many papers have highlighted that consumer innovativeness is a highly influential factor in ICT adoption and on purchase intention (e.g. Agarwal & Prasad, 1998; Citrin et al., 2000; Herrero & Rodriguez del Bosque, 2008; San Martín & Herrero, 2012; Escobar-Rodríguez & Carvajal-Trujillo, 2014). The following research hypothesis was thus formulated:

H6. Personal innovativeness positively affects omnichannel purchase intention.

Additionally, we included the perceived security of the online channels, referring to the belief that the Internet is a secure option for sending personal data (Escobar-Rodríguez & Carvajal-Trujillo, 2014; Ponte et al., 2015). Perceived security can be defined as the perception by consumers that the omnichannel companies' technology strategies include the antecedents of information security, such as authentication, protection, verification, or encryption (Kim et al., 2008). If consumers perceive that the online channels have security attributes, they will deduce that the retailer's intention is to guarantee security during the purchasing process (Chellappa & Pavlou, 2002). There is some evidence that the perceived security of online channels positively affects the intent to purchase using these kind of channels (e.g. Salisbury et al., 2001; Frasquet et al., 2015). In light of these findings, it was hypothesized that perceived security is related to purchase intention as follows:

H7. Perceived security positively affects the omnichannel purchase intention.

Figure 1 shows the theoretical model based on the seven hypotheses, reflecting how the antecedents of technology acceptance and use affect purchase intention in an omnichannel environment.

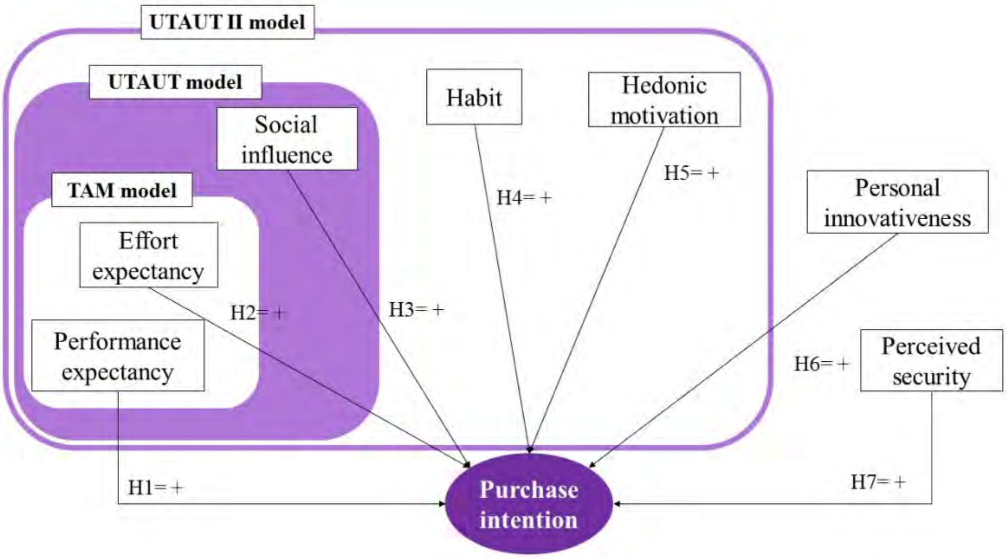
UTAUT II model
UTAUT model
TAM model
Social influence
Habit
Hedonic motivation
Personal innovativeness
Effort expectancy
Performance expectancy
Perceived security
H1= +
H2= +
H3= +
H4= +
H5= +
H6= +
H7= +
Purchase intention

Figure 1. Theoretical model of purchase intention in an omnichannel store

2.3 Methodology

We designed an online survey focused on omnichannel fashion retail customers. The questionnaire was administered to a Spanish Internet panel. For the purposes of our study, we defined omnichannel shoppers as those shoppers who use at least two channels of the same retailer during their shopping journey. The panelists were screened to select those members that fit our definition of omnichannel shoppers. In all, 628 respondents indicated their behavior with regard to their most recent purchase in the twelve months prior to the collection of the data (January 2016).

To carry out the study we selected the company Zara for several reasons. First, Zara is one of the most well-known and important fashion retailers. Additionally, the brand follows an omnichannel strategy, allowing its customers to combine different online channels (the company website, social media, and the mobile app) with the offline channels throughout their customer journey. In other words, shoppers can search for information on a product using the Zara mobile app, buy the product on the Zara website (www.zara.com), and then pick up or return the product at the physical store. However, the most important reason for choosing a single company to study the factors influencing omnichannel customers' behavior was to isolate the omnichannel factor, that is, we wanted to determine the drivers for using different channels and/or technologies of a single company during a single shopping process.

To obtain the most representative sample possible, we used the Cint Panel platform (www.cint.com). In January 2016, we sent 4,900 random invitations by e-mail. A total of 1,612 recipients accessed the survey (the rest did not click on the link). Of these 1,612 panelists, 628 completed the survey. The response rate was thus 12.8%. The sample is stratified by sex and age of the Spanish population. To participate in the study, respondents had to respond affirmatively to the initial filter question: Did you use the following Zara channels (store, Internet, mobile, or social media) in your most recent purchase process (search, purchase or post-purchase stages)?

The questionnaire consisted of two parts. The first part contained statements about shopping motives. Based on their most recent shopping process, respondents were instructed to rate their agreement with each item on a seven-point Likert scale ranging from 1 (strongly agree) to 7 (strongly disagree).

Table 3. Theory of Use and Acceptance of Technology in an Omnichannel Context

Dimension	Item and definition
Hedonic motivations (Childers et al. (2001)	Hedonic1. Being able to use multiple channels throughout the customer journey is enjoyable
	Hedonic2. Being able to use multiple channels throughout the customer journey is pleasurable
	Hedonic3. Being able to use multiple channels throughout the customer journey is interesting
Performance expectancy (Venkatesh et al., 2003)	Performance1. Being able to use multiple channels throughout the customer journey allows me to purchase quickly
	Performance2. Being able to use multiple channels throughout the customer journey is useful to me
	Performance3. Being able to use multiple channels throughout the customer journey makes my life easier
Effort expectancy Venkatesh et al. (2003)	Effort1. I find Zara's different online platforms (website and mobile app) easy to use
	Effort2. Learning how to use Zara's different online platforms (website and mobile app) is easy for me
Social influence Venkatesh et al. (2003)	Social1. People who are important to me think that I should use different channels, choosing whichever is most convenient at any given time
	Social2. People who influence my behavior think that I should use different channels, choosing whichever is most convenient at any given time
	Social3. People whose opinions I value prefer that I use different channels, choosing whichever is most convenient at any given time
	Social4. People whose opinions I value use different channels, choosing whichever is most convenient at any given time

Habit Limayem & Hirt, (2003);Venkatesh et al. (2012)	Habit1. The use of different channels (physical store, website, mobile app) throughout the customer journey has become a habit for me
	Habit2. I frequently use different channels throughout the customer journey
Security Cha (2011)	Security1. Using credit cards to make purchases over the Internet is safe
	Security2. Making payments online is safe
	Security3. Giving my personal data to Zara seems safe
Innovativeness Lu et al. (2005) Goldsmith and Hofacker (1991)	Innovativeness1.When I hear about a new technology, I search for a way to try it
	Innovativeness2. Among my friends or family, I am usually the first to try new technologies
	Innovativeness3. Before testing a new product or brand, I seek the opinion of people who have already tried it
	Innovativeness4. I like to experiment and try new technologies
Expected behavior	
Purchase intention Pantano & Viassone (2015)	PI1. I would purchase in this kind of store
	PI2. I would tell my friends to purchase in this kind of store
	PI3. I would like to repeat my experience in this kind of store

The second part of the questionnaire was used to gather sociodemographic information, such as gender, age, employment status and education (Table 4). The sample was highly representative of the distribution of online shoppers according to recent surveys (Corpora 360 & iab Spain, 2015).

Table 4. Technical details of the data collection and sample description

Universe	People who used at least two channels during their shopping journey
Sample procedure	Stratified by gender and age
Data collection	Online survey
Study area	Spain
Sample size	628 people
Date of fieldwork	January 2016

SAMPLE CHARACTERISTICS

		Sample %
Gender	Male	49.2
	Female	50.8
Age	16-24	13.4
	25-34	37.7
	35-44	32.0
	45-54	12.9
	55+	4.0
Occupation	Student	9.4
	Homemaker	4.1
	Unemployed	10.2
	Retired	1.4
	Self-employed	12.7
	Employee	62.1
Education	Low level of education	3.5

	High school	47.6
	College	48.9
Omnichannel shopper	Used 2 channels	81.0
	Used 3 channels	11.8
	Used 4 channels	7.2

Because of the novelty of the field of application, the measurement scales were then translated into Spanish using a back-translation method, whereby one person translated the items into Spanish and two others translated them back into English, making it possible to check for any misunderstandings or misspellings resulting from the translation (Brislin, 1970). In addition, we conducted a pretest with 25 participants to ensure the comprehensibility of the questions.

We used IBM SPSS Statistics 19 to perform the exploratory factor analysis. Subsequently we undertook a regression analysis of latent variables based on the partial least squares (PLS) technique.

The aim of this research was to explore technology acceptance and use in an omnichannel context. To achieve this aim, fundamentally, theory development, we chose to use the PLS technique to evaluate the structural model before testing the causal model. Next, we estimated a confirmatory factor model to study the validity of the scale and examined the underlying structure. To this end, we created a causal model and used structural equations to evaluate the scale and the effect of technology acceptance and use on omnichannel shoppers’ purchase intentions.

2.4 Results

2.4.1 Measurement model

We performed a confirmatory factor analysis to which we made a few amendments. It was likewise verified that the loadings of all the standardized parameters were greater that 0.7 (Hair et al., 2013). The item *innovativeness3* had a value lower that 0.7 and a *t*-value lower that 1.96. We thus decided to exclude it to improve the model's convergence, as recommended by Anderson & Gerbing (1988). The model confirms that the indicators converge with the assigned factors.

The model was verified in terms of construct reliability (i.e., composite reliability and Cronbach's alpha), convergent validity, and discriminant validity. The composite reliability and Cronbach's alpha values were greater than 0.70, and the constructs' convergent validity was also confirmed, with an average variance explained (AVE) greater than 0.50 in all cases. The discriminant validity of the constructs was measured by comparing the square root of the AVE of each construct with the correlations between constructs (Roldán & Sánchez-Franco, 2012). The square root of the AVE (diagonal elements in italics in Table 5) had to be larger than the corresponding inter-construct correlation (off-diagonal elements in Table 5). This criterion was also met in all cases. Furthermore, each item's loading on its corresponding factor was greater than the cross-loadings on the other factors.

Table 5. Construct reliability, convergent validity, and discriminant validity

	CR>0.7	**α**	**AVE>0.5**	**EE**	**H**	**HM**	**PI**	**PE**	**PS**	**SI**	**PUR_IN**
EE	0.93	0.86	0.88	*0.94*							
H	0.93	0.86	0.87	0.45	*0.93*						
HM	0.93	0.89	0.82	0.58	0.58	*0.90*					
PI	0.92	0.86	0.78	0.49	0.51	0.54	*0.89*				
PE	0.92	0.87	0.80	0.62	0.53	0.70	0.51	*0.89*			
PS	0.93	0.89	0.82	0.54	0.51	0.44	0.43	0.46	*0.90*		
SI	0.96	0.94	0.85	0.45	0.67	0.60	0.53	0.52	0.55	*0.92*	
PUR_IN	0.95	0.92	0.86	0.57	0.40	0.51	0.57	0.58	0.41	0.43	*0.93*

Note: EE (Effort Expectancy); H (Habit); HM (Hedonic Motivation); PI (Personal Innovativeness); PE (Performance Expectancy); PS (Perceived Security); SI (Social Influence); PUR_IN (Purchase Intention)

2.4.2. Structural Model

Bootstrapping with 5,000 resamples was used to assess the significance of the path coefficients obtained by PLS-SEM (Hair et al., 2011). The model explains the intention to purchase in the omnichannel context well, with an R^2 of 47.9% (Table 6). Stone-Geisser's cross-validated redundancy Q^2 was >0, specifically, 0.406. This result confirmed the predictive power of the proposed model (see Hair et al., 2011).

The sign, magnitude, and significance of the path coefficients are shown in Table 6. Three hypotheses were supported by the results: H1 (regarding the influence of *performance expectancy*), H2 (regarding the influence of *effort expectancy*), and H6 (regarding the influence of *personal innovativeness*). In contrast, H3 (regarding social influence), H4 (regarding the influence of *habit*), H5 (regarding the influence of *hedonic motivation),* and H7 (regarding the influence of *perceived security)* were rejected, as the relationships were not significant.

Table 6. Results of the structural model

	R^2	Q^2	**Path coeff.**	***t***	**Low CI**	**High CI**	**Explained variance**	**P Values**	**Hypotheses**
	47.9%	0.406							
PE -> PUR_IN			0.238	4.191	0.123	0.342	13.80%	0.000	H1: Accepted
EE -> PUR_IN			0.255	4.953	0.157	0.356	14.54%	0.000	H2: Accepted
SI -> PUR_IN			0.025	0.490	-0.077	0.125	1.08%	0.624	H3: Rejected
H -> PUR_IN			-0.048	0.937	-0.145	0.059	-1.92%	0.349	H4: Rejected
HM -> PUR_IN			0.034	0.572	-0.080	0.155	1.73%	0.567	H5: Rejected
PI -> PUR_IN			0.310	6.506	0.224	0.409	17.67%	0.000	H6: Accepted
PS -> PUR_SE			0.023	0.467	-0.078	0.122	0.94%	0.640	H7: Rejected

Note: PE (Performance Expectancy); EE (Effort Expectancy); SI (Social Influence); H (Habit); HM (Hedonic Motivation); PI (Personal Innovativeness); PS (Perceived Security); PUR_IN (Purchase Intention)

2.5 Discussion and conclusion

Today's increasingly competitive retail world has given rise to a new phenomenon known as *omnichannel retailing* (e.g., Rigby et al., 2012; Neslin et al., 2014; Beck & Rygl, 2015; Verhoef et al., 2015). This phenomenon can be defined as the customer management strategy throughout the life cycle of the customer relationship whereby the shopper interacts with the brand through different devices and channels (mainly the physical store, the online channel, the mobile channel, and social media), and, thus, all touchpoints must be integrated to provide a seamless and complete shopping experience, regardless of the channel used. Omnichannel retailing stands to become the third wave of e-commerce.

Few studies have analyzed the antecedents of omnishopper behavior (e.g., Lazaris et al., 2014; Neslin et al., 2014; Verhoef et al., 2015). The main goal of the present research was to identify the drivers of technology acceptance and use among omnichannel consumers and to analyze how they affect purchase intention in an omnichannel context. To this end, we proposed a new model based on the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) model (Venkatesh et al., 2012), which we further extended to include two new factors: *personal innovativeness* and *perceived security*. Both *personal innovativeness* and *perceived security* have been found to be important for the adoption of new technologies in the literature on consumer behavior (e.g. Salisbury et al., 2001; Herrero & Rodriguez del Bosque, 2008; Escobar-Rodríguez & Carvajal-Trujillo, 2014; Frasquet et al., 2015). The present paper helps to advance the theoretical understanding of the antecedents of consumer 3.0 technology acceptance and use in the early adoption of omnichannel stores.

The model was found to predict omnichannel purchase intention (R^2=47.9%). Our findings show that a consumer's intention to purchase in an omnichannel store is influenced by *personal innovativeness, effort expectancy*, and *performance expectancy*. In contrast, contrary to our hypotheses based on the broader previous literature, *habit, hedonic motivation, social influence*, and *perceived security* do not affect omnichannel purchase intention.

Personal innovativeness is the strongest predictor of purchase intention in the omnichannel context. This factor plays an important role as a direct driver of omnichannel purchase intention. This finding is consistent with those of previous papers (e.g. Herrero & Rodriguez del Bosque, 2008; Lu et al., 2011; San Martín & Herrero, 2012; Escobar-Rodríguez & Carvajal-Trujillo, 2014). Thus, individuals who are more innovative with regard to ICT will have a stronger intention to purchase using different channels and devices in an omnichannel environment. Our findings show that omnishoppers seek out new technology in order to experiment with it and be the first to try it among their family and friends. Managers should thus take this technological profile into account and constantly roll out new technologies in different ways in order to attract and surprise these kinds of shoppers.

Our findings also show that *effort expectancy* and *performance expectancy* are significant factors in explaining attitude and purchase intention, with a positive effect on behavioral intention, as has been widely reported in the literature (e.g. Childers et al., 2001; Verhoef et al., 2007; Rose et al., 2012). *Effort expectancy* is the second strongest predictor and has a direct positive influence on purchase intention (e.g. Karahanna & Straub, 1999; Venkatesh et al., 2003;Venkatesh et al., 2012). This could be because omnishoppers are more used to using multiple channels and are more task-oriented, using different channels or technologies to look for better prices or maximize convenience at any given time. In keeping with previous research (e.g., Venkatesh et al., 2003; Venkatesh et al., 2012; Escobar-Rodríguez & Carvajal-Trujillo, 2014), *performance expectancy* was found to be the third strongest predictor of behavioral intention in an omnichannel environment.

Although the literature has recognized the influence of normative factors such as *social influence* on people’s attitude, intentions, and behavior (e.g. Fishbein & Ajzen, 1975; Bagozzi, 2000; Venkatesh et al., 2012), our results show that this factor does not influence the intention to purchase in an omnichannel environment. On the contrary, in line with previous work (e.g., San Martín & Herrero, 2012; Casaló et al., 2010), *social influence* was found not to affect purchase intention. This finding contrasts with those reported elsewhere (Kim et al., 2009; Venkatesh et al., 2012; Escobar-Rodríguez & Carvajal-Trujillo, 2014; Pelegrín-Borondo et al., 2016). This may be because technology use is not conditioned by other people’s opinions; it could also be due to the specific sector under study. In either case, it is a topic that should be studied further.

Contrary to previous studies (e.g. Venkatesh et al., 2012; Escobar-Rodríguez & Carvajal-Trujillo, 2014), our results indicate that *habit* does not influence omnichannel purchase intention. This could be because customers are not used to using different channels due to the relatively low number of companies that allow customers to use multiple channels simultaneously. In keeping with authors such as Valentini (2011) and Melero et al. (2016), we believe this variable will increase in importance in the coming years, as more and more retailers implement true omnichannel strategies.

In our research, the hypothesized influence of *hedonic motivation* on purchase intention was found to be low. Previous work in other contexts has found a positive relationship between these variables (e.g., Van der Heijden, 2004; Thong et al., 2006; Venkatesh et al., 2012; Escobar-Rodríguez & Carvajal-Trujillo, 2014). These findings are probably because, when omnishoppers use different channels and touchpoints, they expect a seamless, holistic experience throughout their shopping journey. In other words, hedonic and utilitarian motivation are part of the same construct (Melero et al., 2016). In addition, technology acceptance and use is more of a new experience related to the innovativeness profile than a hedonic one, i.e., excitement over discovering how something will work rather than expected enjoyment based on prior experience.

Finally, contrary to previous findings (e.g., Salisbury et al., 2001; Frasquet et al., 2015), *perceived security* did not influence omnichannel purchase intention. We interpreted these results to mean that the possibility of buying in an omnichannel context offsets the influence of the need for security, an important factor in e-commerce, by offering the option of traditional in-store payment, which nullifies the effect of perceived risk in e-commerce. In this sense, omnichannel stores offer an opportunity to attract more conservative consumers who perceive an increased risk in e-commerce to a more interactive scenario in which retailers can use new technologies to manage customer relationships based on direct contact in the physical store.

Our study contributes to the current literature on omnichannel consumer behavior by adapting the previous UTAUT models to include two new factors in order to determine how the technologies used during the shopping process affect the intention to purchase in an omnichannel context. The results have practical implications for omnichannel retailer managers regarding the best management and marketing strategies for improving a key part of their business, namely, the creation of a holistic shopping experience for their customers (Lemon & Verhoef, 2016). Specifically, retailers need to properly define not only which technologies they will invest in, but also how they will encourage the acceptance thereof, as this acceptance is an important predictor of purchase intention. In particular, in-store technology has to be focused on creating a new integrated customer experience, using technology that is practical, enjoyable, and interesting in order to ensure that innovative customers perceive that the new omnichannel stores facilitate and expedite their shopping journey.

Our paper has some limitations. Our data are related to consumer behavior in a particular case: the buying process in the fashion retailer Zara. It would be interesting to replicate this study in another product category or country to compare the results.

Our research also suggests interesting lines of future research, such as identifying omnichannel consumer profiles in order to personalize the customer shopping experience. Likewise, future studies could investigate the new role of technology in the physical store in an omnichannel environment. In addition, the influence of sociodemographic variables, such as age or gender, as moderator variables to complement the current model should be explored. In keeping with Chiu et al. (2012), we think it would also be interesting to examine *habit* as a moderator variable in purchase intention.

Finally, fashion companies need to determine which factors matter most to consumers 3.0 when they set out on their shopping journey in order to adapt their strategies to shoppers' motivations. This study has sought to shed light on the new omnichannel phenomenon. Technology is changing the future of retailing. The key will lie in successfully integrating all channels in order to think about them as consumers do and try to offer shoppers an integrated and comprehensive shopping experience.

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Chapter 3

Omnichannel shopper segmentation in the fashion industry

3.1 Introduction

The use of multiple channels and touchpoints during the customer journey is the norm in customer behavior (Saghiri, Wilding, Mena, & Bourlakis, 2017). Customers might use a company app to browse information and prescreen options, buy the product through the website from their laptop at home, pick the product up at the physical store, and, once they have it, share their satisfaction on social media (Dholakia et al., 2010). In this competitive omnichannel environment, retailers need to understand what drives the behavior of omnichannel customers, not only to keep their customers, but also to offer the right services to each one, as they are not a homogenous group (Frasquet, Mollá, & Ruiz, 2015; Thomas & Sullivan, 2005)**.**

Neslin et al. (2006) identified multichannel customer segmentation as a key challenge to design effective multichannel strategies. With the emergence of omnichannel retailing, authors such as Juaneda-Ayensa, Mosquera, and Sierra Murillo (2016) or Verhoef, Kannan, and Inman (2015) have called for additional research on the new omnichannel shoppers and their characteristics and shopping behavior across channels. Several studies have looked at the two most popular omnichannel behaviors, showrooming and webrooming (e.g., Arora & Sahney, 2016; Arora, Singha, & Sahney, 2017; Flavián, Gurrea, & Orús, 2016; Gensler, Neslin, & Verhoef, 2016; Gu & Tayi, 2017; Nesar & Sabir, 2016). However, to the best of our knowledge, there is little literature on the omnishoppers' motivations for using different channels or technology during the customer journey (Mosquera, Juaneda-Ayensa, Olarte-Pascual, & Sierra-Murillo, 2018).

In light of this lack of research, the aim of the present paper is twofold: first, to identify possible groups of omnishoppers based on motivations (perceived usefulness, shopping enjoyment, and social influence); and, second, to characterize the omnishopper clusters, identifying which channels they use during the customer journey (search, purchase, and post-purchase stages), as well as the devices they use during the information-search and purchasing stages. Following the suggestions of Lazaris, Vrechopoulos, Katerina, and Doukidis (2014), Cook (2014), and Mosquera et al. (2017), this study seeks to answer the following research questions: can omnishoppers be classified and profiled according to their motivations? (RQ 1); are there differences among the groups in terms of their omnichannel shopping behavior? (RQ 2); are there differences among the groups in terms of their use of channels and devices during the customer journey? (RQ 3); and are there sociodemographic differences among the groups? (RQ 4).

To shed light on this issue, we performed a cluster analysis to identify different omnichannel customer profiles based on their current behavior. Our results show that there are different types of omnishoppers, who can be classified into three groups: reluctant omnishoppers, omnichannel enthusiasts, and indifferent omnishoppers. This paper contributes to the marketing literature by advancing knowledge of the different types of consumers today by examining omnishoppers' actual behavior, thereby filling an important gap in the literature on omnichannel customer management (Cook, 2014; Juaneda-Ayensa et al., 2016). These findings also have important implications, since knowledge of the different omnishopper profiles could lead retailers and business managers to implement different strategies depending on each group's motivations for using different channels during the customer journey.

The remainder of this paper is organized as follows: first, we review the literature on the new omnishopper customer journey, as well as on multichannel shopper segmentation as an antecedent to omnishopper segmentation. Second, we describe the sample and methodology used in the research. Finally, we present the results and conclusions and suggest future lines of research.

3.2 Literature review

3.2.1 Omnichannel retailing: new customer journeys and shopping behaviors

The rise of the Internet and new technologies has transformed how people communicate and the shopping process. Nowadays, people talk about omnichannel retailing, a form of retailing that melds the online and offline worlds, erasing the barrier between them (Bell, Gallino, & Moreno, 2014; Brynjolfsson, Hu, & Rahman, 2013; Piotrowicz & Cuthbertson, 2014). This new form of shopping integrates all the channels and touchpoints in order to deliver a seamless shopping experience (Verhoef et al., 2015). Thus, omnichannel shopping refers to a cross-channel experience (Mosquera et al., 2017), whereby the customer can browse, compare prices, read reviews, or make purchases online, from a desktop or mobile device, by phone, or in a physical store as part of a single seamless purchase experience. In other words, customers are unique on all of the company's channels and touchpoints, and their shopping carts are saved from one platform to the next without the need for them to begin the shopping process anew each time they switch channels.

This new scenario is intended to meet the demands of omnishoppers, who are increasingly well-informed and hyper-connected. Although the physical store is still the basis of the shopping experience, customers are increasingly comfortable with the other shopping channels (Rodriguez, 2016). On the one hand, the physical store gives them the possibility to see, touch, and test; on the other, the Internet facilitates purchase decisions by offering a wide variety of products, more competitive prices, and round-the-clock purchase availability (Mosquera, Olarte-Pascual, & Juaneda-Ayensa, 2017). More traditional models of the purchase-decision process have thus given way to what today is called the "customer journey" (Lemon & Verhoef, 2016). One of the most well-known traditional models used in the literature is that proposed by Howard and Seth (1969), which divides the purchase-decision process into five stages: recognition of the need, search for information, evaluation of alternatives, purchase, and post-purchase. Neslin et al. (2006) adapted this model to the multichannel environment to enable better comprehension of the multichannel purchasing process. However, the introduction of new technologies and touchpoints between consumers and brands makes the process increasingly complicated, and today people talk of the "customer journey" (Wolny & Charoensuksai, 2014), which is characterized as being more complex and dynamic, not following a linear structure, and reflecting the cognitive as well as the emotional aspects of the purchase decision (Lemon & Verhoef, 2016).

Thus, retailers have increasingly less control over the customer experience and the customer journey. This circumstance has given rise to new omnichannel behaviors, such as webrooming, consisting of searching online but buying in the physical store (Arora et al., 2016; Flavián et al., 2016), and showrooming, consisting of looking at and testing a product at a physical store but buying it online (Brynjolfsson et al., 2013; Rapp, Baker, Bachrach, Ogilvie, & Beitelspacher, 2015).

3.2.2 Customer segmentation studies: from a multichannel perspective to an omnichannel one

Table 1 summarizes the most important papers in the multichannel segmentation literature. Konuş, Verhoef, & Neslin (2008) were the first to analyze the different segments incorporating not only demographic characteristics but also psychographic covariates and multiple purchase stages. They identified three customer segments: multichannel enthusiasts, uninvolved shoppers, and store-focused customers. Building on that study, Schröder and Zaharia (2008) found that most customers use the same channels for a single purchase process but different channels in different purchase processes. Wang, Yang, Song, and Ling (2014) identified two different segments, innovative consumers and conventional ones. Keyser, Schepers, and Konuş (2015) and Frasquet et al. (2015) contributed to the customer segmentation literature with studies on the post-purchase stage. Frasquet et al. (2015) identified five multichannel customer segments: online shoppers, reluctant multichannel shoppers, uninvolved multichannel shoppers, true multichannel shoppers, and offline shoppers. With the latest advances in new technologies and devices, authors such as Nakano and Kondo (2018) or Sands, Ferraro, Campbell, and Pallant (2016) have added to the research, focusing on media channels and expanding the scope to include mobile and social media.

The present customer segmentation study draws on the aforementioned work. Based on the theoretical background on multichannel shopper behavior in multiple purchase stages (Verhoef, Neslin, & Vroomen, 2007), it advances the literature on segmentation by analyzing omnichannel customers. It considers two main types of motivations as drivers of omnichannel customer behavior during the customer journey: extrinsic and intrinsic motivations. Extrinsic motivations refer to rewards shoppers obtain as a result of using different channels and technologies, whereas intrinsic motivations refer to rewards obtained in the process of using them (Frasquet et al., 2015). Based on these motivations, this study segmented omnishoppers with regard to three psychographic variables: perceived usefulness, shopping enjoyment, and social influence. The *perceived usefulness* construct captures extrinsic motivations, as it enhances the appeal of performing the shopping task (Venkatesh, Morris, Davis, & Davis, 2003; Venkatesh, Thong, & Xu, 2012). For the purposes of the present study, this variable was defined as the degree to which consumers perceive the use of different channels and/or technologies during the customer journey as rewarding them when they are buying clothes by streamlining the shopping process. Previous studies have demonstrated that perceived usefulness positively influences purchase intention in an omnichannel context (Juaneda-Ayensa et al., 2016). We sought to determine whether it affects the different segments in the same way. *Shopping enjoyment* is the main variable explaining intrinsic motivations. It does not refer to the enjoyment of using different channels during the customer journey per se, but rather to the pleasure taken in performing the shopping task (Frasquet et al., 2015). This variable includes entertainment and emotional benefits that have been shown to influence channel selection (Sands et al., 2016). Previous segmentation studies such as Konuş et al. (2008) and Schröder and Zaharia (2008) have demonstrated that some segments experience high levels of shopping enjoyment. Finally, *social influence* is understood as "the perceived social pressure to perform or not to perform (a given) behavior" (Ajzen, 1991, p. 188). In the context of multichannel customers, Konuş et al. (2008) demonstrated the importance customers give to the approval of the people around them during the shopping process. This variable is the extent to which customers perceive that people who are important to them (family, friends, role models, etc.) believe they should use different channels depending on their needs (Juaneda-Ayensa et al., 2016). The present study characterized the different segments of omnishoppers taking into account sociodemographic characteristics such as gender, age, income, and education, all of which have been shown to impact shopping behavior generally (Ansari, Mela, & Neslin, 2008; Sands et al., 2016).

Table 1. Empirical papers on multichannel customer segmentation in multiple purchase stages

	Purchase stages	Multi-device/ media	Individual differences		Data type	Product category
			Psychographic	Demographic		
Konuş, Verhoef, & Neslin (2008)	Search & purchase	-	✓	✓	Survey	Mortgage, insurance, holidays, books, computers, electronics, & clothing
Schröder & Zaharia (2008)	Search & purchase	-	✓	✓	Survey	Apparel, toys, & electronics
Wang, Yang, Song, & Ling (2014)	Search & purchase	-	✓	✓	Survey	Apparel, computers, TV sets, jewelry, toys, books, MP3s, headphones, & cars
Keyser, Schepers, & Konus (2015)	Search & purchase	-	✓	✓	Survey	Mobile solutions: devices, accessories, & subscriptions
Frasquet et al. (2015)	Search, purchase, & post-purchase	-	✓	✓	Survey	Apparel & consumer electronics
Sands, Ferraro, Campbell, & Pallant (2016)	Search, purchase, & post-purchase	Internet, mobile,	✓	✓	Survey	Clothing, holidays, travel, & consumer electronics

		social media				
Nakano & Kondo (2018)	Search, purchase, & post-purchase	PC, mobile, social media	✓	✓	Actual data (purchase scan panel, media panel) & survey	Groceries, beverages, sundries, cosmetics, & drugs
The present study	Search, purchase, & post-purchase	PC, laptop, smartphone, tablet, social media	✓	✓	Survey	Clothing

3.3 Methodology

We chose to study the fashion industry because it is one of the fastest growing sectors in digital purchases, able to attract different customer profiles through online and offline channels (Mosquera et al., 2018; Rodriguez, 2016). We focused on the Spanish clothing retailer Zara due to the omnichannel experience it offers customers in the shopping process. Zara is a fast-fashion brand characterized by affordable but also stylish and up-to-date fashion garments. In this study, the sample used is the same of the previous chapter.

The survey took around 8 minutes to complete. To complement the survey, respondents first read a detailed overview of the topic. The questionnaire itself consisted of four sections. In the first section, respondents indicated their behavior in the last purchase, specifying which channels they had used to look for information (they could choose more than one), which one they had ultimately used to make the purchase, and which one they would use in the case of post-purchase contact. This section also included questions about the devices they had used if they had used online channels during the search and/or purchase stages. The available channels were: store, Internet, mobile, and social media. *Store* referred to the brick-and-mortar retail establishment; *Internet* referred to the brand’s website, accessed from a desktop or laptop computer; *mobile* referred to the Zara app; and *social media* referred to the brand’s presence on platforms such as Facebook, Twitter, Instagram, and Pinterest. In the second part, respondents evaluated the importance of perceived usefulness (Venkatesh et al., 2003), shopping enjoyment (Konuş et al., 2008), and social influence (Venkatesh et al., 2003) (Appendix 1). The third part included questions about the respondents’ omnichannel behavior. Finally, the fourth part asked respondents for information related to demographic covariates, such as gender, age, income, and education. All the psychographic variables were measured through multiple items using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). We chose a 7-point Likert scale as it is the standard way of measuring variables that are not directly quantifiable or observable (Churchill & Iacobucci, 2006; Escobar-Rodríguez & Carvajal-Trujillo, 2014; Felipe & Roldán, 2017). The margin of error and confidence interval were +/-4% and 95.5% (Z=2), respectively, with a maximum allowable variance of P=q=50%.

We used cluster analysis to create the different segments, with SPSS 24 and EQS 6.1 software.

3.4 Results

In keeping with the stated objectives, we identified groups in terms of the members' extrinsic and intrinsic motivations to use different channels during their customer journey. We used a sequential methodological process to identify clusters. First, we performed exploratory and confirmatory factor analyses on the responses for the scales for perceived usefulness, social influence, and shopping enjoyment to demonstrate the reliability and validity of the scales used (Olarte-Pascual, Pelegrin-Borondo, & Reinares-Lara, 2014, Ryan, & Tipu, 2013). Next, we randomly split the data into two different sets of equal size, labeled set A and set B. The Bartlett's test of sphericity (chi-square of approximately 4,264.865 with 45 degrees of freedom; significance level of 0.000) and Kaiser–Meyer–Olkin statistic (0. 892) indicated that the EFA correlation matrix was good ($p < 0.001$; KMO > 0.8) (Hair, Black, Babin, & Anderson, 2010). Once we had verified that the requirements for using factor analysis (Hair et al., 2010) had been met (Table 3), we performed an exploratory factor analysis (EFA) using the principal component analysis extraction method with Varimax rotation. The information was synthesized into three factors, which together explain a total of 79.37% of the variance. Factor one contains a total of three items, with factor loadings ranging from 0.807 to 0.816; factor two contains a total of four items, with factor loadings ranging from 0.850 to 0.890; and factor three contains a total of three items, with factor loadings ranging from 0.728 to 0.802.

Table 3. Rotated component matrix

	1	2	3
Usefulness1	**0.807**	0.263	0.206
Usefulness2	**0.859**	0.204	0.154
Usefulness3	**0.816**	0.270	0.203
Social1	0.276	**0.856**	0.151
Social2	0.180	**0.890**	0.197
Social3	0.219	**0.889**	0.166
Social4	0.251	**0.850**	0.187
Enjoyment1	0.394	0.068	**0.771**
Enjoyment2	0.329	0.155	**0.802**
Enjoyment3	-0.066	0.384	**0.728**

The scales showed good reliability, with Cronbach’s alpha scores of 0.871 for perceived usefulness, 0.940 for social influence, and 0.751 for shopping enjoyment.

We confirmed the existence of the three factors through a confirmatory factor analysis (CFA) using EQS on data set B. Figure 1 shows the results of the CFA. We estimated the model using the maximum likelihood method. The results of the CFA indicate a good fit between the measurement model and the empirical data (NFI = 0.973; NNFI = 0.972; IFI = 0.980; MFI index = 0.935; GFI = 964; RMSEA = 0.065) (Hair et al., 2010).

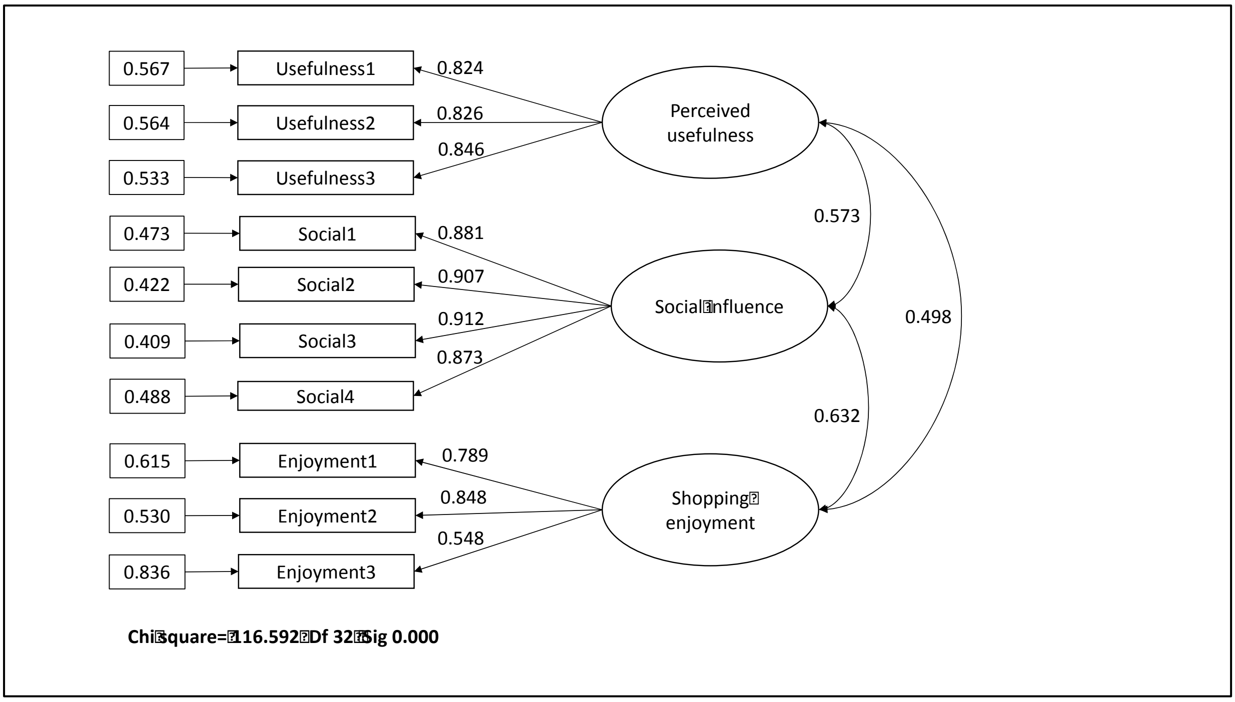
0.567
Usefulness1
0.824
0.564
Usefulness2
0.826
0.533
Usefulness3
0.846
Perceived usefulness
0.473
Social1
0.881
0.422
Social2
0.907
0.409
Social3
0.912
0.488
Social4
0.873
Social influence
0.573
0.498
0.632
0.615
Enjoyment1
0.789
0.530
Enjoyment2
0.848
0.836
Enjoyment3
0.548
Shopping enjoyment
Chi square= 116.592 Df 32 Sig 0.000

Figure 1. A three-factor confirmatory factor analysis using structural equation modeling

Factor 1 explains aspects related to the perceived usefulness of being able to use multiple channels throughout the customer journey. Factor 2 comprises variables related to social influence. Factor 3 consists of variables related to shopping enjoyment.

Next, as proposed by Lévy and Varela (2003), we used hierarchical cluster analysis to classify the individuals based on the factors obtained in the first step. We standardized all factors to have a mean of 0 and a standard deviation of 1. We used squared Euclidean distance as the proximity measure, and the Ward method as the classification algorithm. Based on the resulting dendrogram, we determined the number of clusters and the centroids so as subsequently to apply the K-means method. In all, we identified three clusters, which we then validated, in a third step, by means of two methods: analysis of variance and discriminant analysis (Olarte-Pascual et al., 2015, p. 110). The results confirmed that the three groups obtained were different and correctly identified. We then named each cluster based on the importance the respondents gave to the factors. Table 4 shows the characteristics of each group.

Table 4. Characterization of the omnishopper groups

	Group 1 **Reluctant omnishoppers**	Group 2 **Omnichannel enthusiasts**	Group 3 **Indifferent omnishoppers**
Perceived usefulness	-2.56	1.82	-0.26
Social influence	-2.38	1.69	-0.24
Shopping enjoyment	-2.46	1.73	-0.24
% of total sample	22.13%	37.00%	40.87%

As can be seen in Table 4, people in the first group, the *reluctant omnishoppers*, do not consider the use of different channels during the customer journey useful (-2.56) or find the shopping task enjoyable (-2.46). Furthermore, they are not influenced to use different technologies by people who are important to them (-2.38). This cluster accounted for a total of 22.13% of the sample.

Members of the second group, the *omnichannel enthusiasts*, consider the use of different shopping channels quite interesting and love to shop. Specifically, they regard the simultaneous use of multiple channels to be very useful (1.82), enjoy shopping (1.73), and are highly influenced by other people who are important to them (1.69). This cluster accounted for 37% of the sample.

The last group is the *indifferent omnishoppers*. This group includes people who neither feel that using multiple channels during their customer journey is particularly useful (-0.26) nor particularly enjoy shopping (-0.24), as reflected in their indifference. Likewise, they did not give high scores to the importance of social influence for them (-0.24). This cluster accounted for the largest number of omnishoppers (40.87% of the sample).

Once we had identified the groups, we analyzed each one’s omnichannel behavior. Tables 5 and 6 show the considerable differences found among the clusters in terms of their sociodemographic characteristics, omnichannel shopping behavior, and use of channels and devices during the customer journey.

Table 5. Sociodemographic differences between clusters

Variables	Chi-Squared	Percentages (%)		
		Reluctant	Enthusiasts	Indifferent
Gender	P=0.018			
Men		54.0	41.8	53.3
Women		46.0	58.2	46.7
Age	P=0.006			
Under the age of 25		20.1	9.1	13.6
Ages 25 to 34		44.6	34.1	37.4
Ages 35 to 44		23.0	35.3	33.9
Ages 45 to 54		9.4	17.2	10.9
Over the age of 54		2.9	4.3	4.3
Education	P=0.657			
Less than high school		5.0	3.9	2.3
High school		48.9	46.6	47.9
College		46	49.6	49.8
Monthly income	P<0.001			
Less than €600		8.6	4.7	6.6
€601-1,200		28.1	19	22.2
€1,201-1,800		38.1	31.9	33.9
€1,801-3,000		17.3	26.3	24.9
More than €3,000		0.0	13.4	5.8
DK/NA		7.9	4.7	6.6
TOTAL		**22.13**	**37.0**	**40.87**

Table 5 shows the breakdowns by gender, age, educational attainment, and income. We found virtually no differences between the clusters in terms of education; the main demographic factors differentiating the groups were gender, age, and monthly income.

Table 6. Behavior of the omnichannel customer segments during the customer journey

Variables	Chi-Squared	Percentages (%)		
		Reluctant	Enthusiasts	Indifferent
Channel used	P<0.001			
Slightly omnichannel (2 channels used)		87.0	71.5	86.4
Very omnichannel (3 channels used)		7.2	15.9	10.5
Completely omnichannel (4 channels used)		5.8	12.5	3.1
Omnichannel behavior	P=0.306			
Showrooming		28.1	28.0	22.6
Webrooming		71.9	72.0	77.4
Use of smartphone in-store	P=0.002	74.8	88.8	83.3
No use of smartphone in-store		25.2	11.2	16.7
Use of smartphone in-store to compare prices	P=0.046	63.3	74.6	66.5
No use of smartphone in-store to compare prices		36.7	25.4	33.5
Use of smartphone in-store to look for opinions	P=0.004	46.0	63.4	53.7
No use of smartphone in-store to look for opinions		54.0	36.6	46.3

Use of smartphone in-store to share photos			P<0.001	74.8	88.8	83.3
No use of smartphone in-store to share photos				25.2	11.2	16.7
Money spent (in €)			P<0.001			
Less than €100				25.9	11.2	17.1
€101-250				46.0	28.9	37.0
€251-500				21.6	32.8	31.1
€501-1,000				6.5	19.0	13.2
More than €1,000				0.0	8.2	1.6
Channels	**Search** (multiple choices)	**Store**	P=0.991	78.4	78.9	79.0
		(No store)		21.6	21.1	21.0
		Internet	P=0.001	74.8	86.2	72.4
		(No Internet)		25.2	13.8	27.6
		Mobile	P=0.001	11.5	23.7	12.5
		(No mobile)		88.5	76.3	87.5
		Social media	P=0.001	15.1	26.3	14.0
		(No social media)		84.9	73.7	86.0
	Purchase	**Store**		71.9	72.0	77.4
		Internet	P=0.622	25.9	26.3	21.4
		Mobile		2.2	1.7	1.2
		Social media		0.0	0.0	0.0

	Post-purchase	**Store**		80.6	83.2	87.2
		Internet	P=0.359	18.0	15.9	10.9
		Mobile		0.7	0.9	1.6
		Social media		0.7	0.0	0.4
Devices	**Search** (multiple choices)	**Desktop computer**	P=0.348	40.3	47.4	47.1
		(No desktop computer)		59.7	52.6	52.9
		Laptop computer	P=0.521	61.2	63.8	58.8
		(No laptop computer)		38.8	36.2	41.2
		Smartphone	P=0.007	39.6	54.7	43.6
		(No smartphone)		60.4	45.3	56.4
		Tablet	P=0.000	21.6	35.8	18.3
		(No tablet)		78.4	64.2	81.7
		None	P=0.000	6.5	1.7	3.9
		(At least one)		93.5	98.3	96.1
	Purchase	**Desktop computer**		17.3	20.3	25.3
		Laptop computer	P=0.396	28.1	29.7	23.7
		Smartphone		8.6	10.3	7.8
		Tablet		3.6	5.2	3.5
		None		42.4	35.5	39.7

Table 6 shows the breakdown of omnichannel shopping behavior across the customer journey and the use of smartphones in-store. Although we found virtually no differences between the clusters in terms of webrooming or showrooming behavior, we found significant differences in terms of the number of channels used during the customer journey, the use of smartphones in-store, the actions carried out with the smartphone (comparison shopping, looking for opinions, and sharing photos with friends and family), and the money each cluster spent at Zara. In contrast, we found no significant differences between the clusters in terms of the channels used in the purchase and post-purchase stages or the devices used in the purchase stage.

3.5 Discussion and conclusions

The aim of this study was to provide an omnichannel shopper segmentation, a key factor in the design of effective omnichannel strategies. In so doing, it fills the gap on this interesting issue in the literature on omnichannel customer management (Cook, 2014). Using latent-class cluster analysis and focusing on intrinsic and extrinsic shopping motivations, we were able to answer the first research question (RQ 1), resulting in three omnishopper segments: reluctant omnishoppers, omnichannel enthusiasts, and indifferent omnishoppers. These groups confirm and advance the findings of previous segmentation studies (Frasquet et al., 2015; Keyser et al., 2015; Konuş et al., 2008).

With a view to contributing to the theoretical background, the present study sought to characterize the omnichannel segments, identifying differences in terms of their omnichannel shopping behavior (RQ 2), the channels and devices used during the customer journey (RQ 3), and sociodemographic factors (RQ 4).

Based on the results, we can interpret the omnishopper segments as follows. The first group, encompassing *reluctant omnishoppers*, consists of people who neither value the integration of channels during the shopping process nor enjoy the shopping task and whose shopping behavior is not influenced by other people. This group is mainly made up of young men aged 34 and under, with a high school education and average income. They generally use two channels during the shopping process and are mostly webroomers (i.e., they prefer to research products online but make the final purchase offline).

Although most members of this cluster use their smartphones in-store, the percentage is smaller than in the other segments. Specifically, they mainly use their smartphones in-store to share photos, followed by comparing prices and, in less than half of all cases, to look for other customers' opinions. This group also spends the least on clothing. As for the customer journey, they usually search for information both online and offline but make the final purchase in the store. Should customers in this group need to return a product, they would prefer to do so at the physical store. The preferred device for the members of this group, both to search for information and to shop online, is a laptop.

The second group consists of *omnichannel enthusiasts*, who love to shop, perceive the benefits of omnichannel retailing, and are influenced by the opinions of others, such as family or friends. This group mainly consists of women between the ages of 35 and 44 with a college education and an income of more than €1,201 a month (71.6% of cases). Although most of these customers used only two channels, this segment was also the one with the highest percentage of customers using 3 or 4 (28.4%). Like the other two groups, they are webroomers; this group was furthermore the most likely to use their smartphones in-store for all the possible choices (to compare prices, look for opinions, and share photos). Moreover, this group spends the most on clothing. Specifically, 32.8% spend between €251 and €500 a year. Like the other groups, the members of this group usually search for information online and offline but ultimately make their purchases at the store. Likewise, should they need to return a product, they would prefer to do so at the store. As for the devices they use, the preferred device for the people in this segment who search and shop online is a laptop, followed very closely by smartphones in the search category.

The third group is the *indifferent* group. It mainly consists of men between the ages of 25 and 34, with a college education and a monthly income of between €1,200 and €1,800. Regarding their omnichannel behavior, they mainly used two channels during the customer journey and, like the rest, were mostly webroomers. Most of the members of this group use their smartphones in-store, mainly to share photos, followed by comparing prices and to look for opinions. As the most passive segment, most of the shoppers in this group spend less than €250 on their purchases. With regard to their customer journey, they seek information about products both online and offline, but ultimately make the purchase at the brick-and-mortar store. If necessary, they would also prefer to use the physical store for any post-purchase needs. Finally, with regard to devices, they prefer to use a laptop to search for information online, but a desktop computer when making purchases.

The identification of distinct omnishopper segments confirms that they are not a homogeneous group and offers insight into the different motivational patterns that shape the customer journey. These findings thus help to advance knowledge of the different types of consumers today.

We can conclude that not all customers perceived the shopping task as enjoyable, nor did they all perceive the usefulness of using multiple channels during the customer journey. Business managers should thus adapt their strategies to the different profiles, offering each group of customers the channels they are most likely to use. They can monitor the customer journey through new tools such as customer journey mapping and adapt to their customers' needs.

The limitations of this study suggest future lines of research. It would be interesting to replicate the study in another product category and compare the results, as the purchase process of buying clothing is very different from that of buying items in other product categories, such as electronics, groceries, or furniture. It would likewise be interesting to replicate the study with a luxury brand, as customers of such goods may behave differently, leading to the identification of different omnishopper profiles. In addition, this study was conducted solely in Spain. Future research could validate it in other countries in which technology is integrated into the shopping process differently or that have different sociodemographic environments, such as China, the US, or India.

With regard to the three proposed segments, managers at fashion retailers should focus on the omnichannel enthusiasts, as they are the most interesting group. This group consists of high-income, college-educated women, who are both tech-savvy and fashion-forward, i.e., who mainly use several channels because they perceive the usefulness of using them simultaneously and who love to shop. This segment is also socially influenced by the opinions of others. From a strategic perspective, the results suggest that this group requires a useful, enjoyable and seamless experience throughout the technological-real purchase journey (Yumurtacı Hüseyinoğlu, Galipoğlu, & Kotzab, 2017). From an operational perspective, it is the group most likely to compare prices when in the store;

such customers should thus be sent discount coupons while shopping in the store in order to encourage them to buy at that specific moment.

Finally, with regard to the customer journey, as the results show, the physical store continues to be the preferred place to buy clothing. In this regard, the present study confirms previous findings on the importance of webrooming (Nakano & Kondo, 2018; Sands et al., 2016). In the present case, this is because Zara is a brand that owns shops in all Spanish cities, and clothing shopping continues to be a social activity in the country. Consequently, retail managers in the sector should pay attention to the store experience, as it is where most transactions take place. One way to improve this experience could be the integration of interactive in-store technology, such as virtual fitting rooms, automatic checkout, or tablets to provide more information about products.

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Chapter 4

The role of technology in an omnichannel physical store

4.1. Introduction

The omnichannel concept is perhaps one of the most important revolutions in business strategy of recent years, with both practical and theoretical implications (Bell, Gallino, & Moreno, 2014; Brynjolfsson, Hu, & Rahman, 2013; Piotrowicz & Cuthbertson, 2014; Verhoef, Kannan, & Inman, 2015), and the fashion industry has been one of the first to implement it (PwC 2016). Business experts use the term omnichannel to describe a form of retailing that allows customers not only to shop across channels, but also to interact with the brand anywhere and at any time, providing them with a unique, complete, and seamless shopping experience that breaks down the barriers between virtual and physical stores (Beck & Rygl, 2015; Lazaris & Vrechopoulos, 2014; Levy, Weitz, & Grewal, 2013; Melero, Sese, & Verhoef, 2016; Rigby, 2011; Verhoef et al., 2015). Advances in information technology and communication have led to an increase in the number of retailing formats through which consumers can contact a company. In addition to traditional physical and online stores, new channels and touchpoints, such as mobile, social media, smart TV, and smart watches, are changing consumer habits and shopping behavior, transforming the buying process (Juaneda-Ayensa, Mosquera, & Sierra Murillo, 2016; Melero et al., 2016; Piotrowicz & Cuthbertson, 2014; Verhoef et al., 2015).

This fact has made selling to consumers truly complex (Crittenden et al. 2010) due to consumers’ simultaneous evaluation of all channels and the resulting need for retailers to integrate all channels seamlessly in order to prevent cross-channel free-riding behavior (Pantano & Viassone 2015; Neslin et al. 2006; Chiu et al. 2011; Heitz-Spahn 2013).

In this new scenario, although shopping in physical stores is still the most popular way to buy clothing, the weight of the online channel in the fashion industry is growing and the gap between physical and virtual stores is shrinking (PwC 2016). Retailers must adapt to consumers’ demands, incorporating new omnichannel technologies and practices to offer the best real-life and virtual purchasing options. In other words, physical stores should use a mixed model, combining the immediacy and multi-sensorial experience of a brick-and-mortar store with the access, interactivity, and convenience of an online one (Alexander & Alvarado 2017). This new demand has a disruptive impact on the retail sector, forcing companies to transform their business models and customer relationship management strategies. Over the last years, a wide variety of technological innovations have been implemented in retail, such us augmented reality, digital signals, Quick Response (QR) codes, beacons, tablets, and free Wi-Fi (Piotrowicz & Cuthbertson 2014).

The literature reflects great interest among practitioners and scholars in the implementation of new technologies in stores. Studies have looked at how new in-store technologies can improve the shopping experience (Pantano & Di Pietro 2012; Demirkan & Spohrer 2014; Pantano & Viassone 2015; Papagiannidis et al. 2013; Poncin & Ben Mimoun 2014; Grewal et al. 2014) by increasing information richness (Parise et al. 2016) and encouraging the perception of innovation among customers (Atkins & Hyun 2016). They have also found a positive relationship between the number of touchpoints and purchase intention (Suh & Lee 2005). However, while real examples of the integration of interactive technologies in physical stores are on the rise, there is still a gap in the scientific literature regarding the role of technology in the physical store in an omnichannel environment (Brynjolfsson et al., 2013; Cook, 2014; Papagiannidis et al., 2013; Verhoef et al., 2015; Weill & Woerner, 2015). Due to this lack of empirical studies, this paper sought to determine which omniretailing technologies and uses matter most to consumers, as well as how consumers' intention to use such technologies and practices affects their purchase intention in an omnichannel clothing retail environment. This study also analyzed the moderating effect of gender on the relationship between the intention to use the aforementioned technologies and purchase intention. In this regard, some researchers have looked at gender-based attitudinal differences between men and women in relation to the use of information and communications technologies (ICTs) and in online contexts (e.g., Floh & Treiblmaier, 2006; Mittal & Kamakura, 2001). However, we have found no empirical studies analyzing the moderating role of gender on the influence of purchase intention in an omnichannel environment.

To achieve these goals, this paper will proceed as follows. First, we review the literature on omnichannel technologies in physical stores and the role of gender in shopping behavior. Second, we develop a model to understand how the introduction of new in-store technology would affect purchase intention. Third, we describe and explain the methodology used in the empirical study. Fourth, we examine the results and implications of the findings and derive our conclusions. Fifth and finally, we address the limitations of the research and suggest future lines of inquiry.

4.2. Literature review and hypotheses

The best way to think about omnichannel is to think about the evolution of retailing. It has been a 20-year journey, and it was not that long ago that retail was synonymous with brick-and-mortar (Harris 2012). With the advance of e-commerce, a new channel emerged, and there began to be talk of multichannel retailing (Verhoef et al., 2015). However, although the multichannel concept allowed consumers to interact with the company through multiple touchpoints, it involved a silo-like division between the physical and virtual stores that caused consumers to have bad experiences (Beck & Rygl, 2015). Omnichannel is the final step in this evolution and consists in offering a comprehensive experience that merges the offline and online worlds (Mosquera et al. 2017). If all channels are connected, customers can start their shopping journey in one channel and finish it in another, creating a seamless experience that increases convenience and engagement (Alexander & Alvarado 2017; Eaglen 2013). It is a new wrapper on a very old principle, namely, that retailers should establish a conversation with their customers and center their strategy on them and their shopping experience (Gupta et al. 2004; Hansen & Sia 2015; Shah et al. 2006).

As a result of technological advances, a new multi-device consumer has emerged who uses several channels simultaneously (Lazaris & Vrechopoulos 2014) and whose experience is characterized by connectivity, mobility, and multiple touchpoints (Aubrey & Judge 2012; Harris 2012). Described as channel agnostic, these consumers do not care whether they buy in-store, online, or via mobile as long as they get the product they want when they want it at the right price (Aubrey & Judge 2012), because what they ultimately want is to have the same brand experience regardless of the channel used (Dholakia, Zhao, & Dholakia, 2005; Eaglen, 2013; Juaneda-Ayensa et al., 2016; Zhang et al., 2010).

4.2.1 Role of in-store technology

In an omnichannel environment, technology is key to creating an integrated experience between channels, making the shopping experience both engaging and memorable (Piotrowicz & Cuthbertson 2014). Although e-commerce continues to grow, physical stores are still the first choice for buying new clothing, as they provide the instant gratification of buying the product and play a central role in the development of a successful customer relationship (Blázquez 2014).

However, the physical store is not just a place where consumers can see, feel, touch, and try the products, but also a place to provide them with attractive personal experiences, regardless of the channel used (Avery et al. 2012; Medrano et al. 2016). Thus, technology is redefining the store experience and store layouts through “click-and-collect,” “ordering in-store,” “delivering to home,” “order online, return to store,” and other combinations of online and traditional retail activities that make the shopping process easier (Bell et al. 2014).

Recently, interactive in-store technologies have been implemented with the aim of increasing consumers’ satisfaction and enhancing their shopping experience. Some of the most well-known technologies are virtual fitting rooms (Choi & Cho 2012), augmented reality (Poncin & Ben Mimoun 2014), digital signals (Burke 2009), tablets (Rigby, Miller, Chernoff, & Tager, 2012), automatic checkouts (Zhu et al. 2013), beacons (Grewal et al. 2014), and retail apps (Pantano & Priporas 2016). Poncin and Ben Mimoun (2014) demonstrated that the experiential aspects of new in-store digital technologies may attract more shoppers to points-of-sale, reducing the boundaries between classical in-store atmospherics and e-atmospherics and possibly increasing sales. Moreover, offering more services while enriching traditional ones has been shown to increase consumers’ purchase intention (Renko & Druzijanic 2014; Pantano 2016). Similarly, in 2009, Verhoef et al. identified the issue of how technology affects the shopping experience as one of the great questions. More recently, Verhoef et al. (2015) called for research into the role of the physical store in an omnichannel environment.

In this paper, we will differentiate between in-store technology in general and the technology used specifically in fitting rooms. By *in-store technology* we mean the different devices that facilitate the shopping process at various points in the store. These technologies might include self-service technologies, iPads or tablets, and other digital devices that allow the customer to perform different actions, such as automatic checkout systems to avoid lines or technologies that make it easier for customers to locate garments and sizes quickly in the store or, if they are not available or the customer does not want to be saddled with bags, to order them easily via a tablet and have them delivered to his or her home.

In contrast, *fitting-room technology* refers to technologies used specifically in fitting rooms. Fitting rooms are a place where many people make their final purchasing decision (Beck & Crié, 2015). This type of technology will thus be treated separately here. Some of the most well-known fitting-room technologies are the smart mirror or "virtual garment fitting system," which allows the customer to try clothes on virtually via a 3D body-scanning system (Pantano & Viassone 2014), and tablets, which allow the customer to choose different outfits, sizes, or colors without leaving the fitting room, thereby making the experience more pleasant and convenient.

In light of the literature showing that technology attracts more consumers to the store (Demirkan & Spohrer 2014; Pantano & Viassone 2015; Papagiannidis et al. 2013; Poncin & Ben Mimoun 2014; Grewal et al. 2014), we propose the following hypotheses with a view to advancing knowledge of the role of technology in omnichannel stores.

H1. The intention to use in-store technology positively affects purchase intention in an omnichannel clothing store.

H2. The intention to use fitting-room technology positively affects purchase intention in an omnichannel clothing store.

4.2.2 Role of customer's own devices

In an omnichannel environment, not only do the retailer's technologies matter, but also, those personal devices that customers use in the store, such as their smartphones, smartwatches, and other wearables. Numerous studies have highlighted that mobile technology has become a key tool at different moments before and during the shopping journey (Pantano & Priporas 2016; Zagel et al. 2017). The nature of mobile devices, their physical characteristics, and their size allow customers to search and shop anywhere and at any time (Gao et al. 2015; Rodríguez-Torrico et al. 2017). Today's consumers prefer to consult with their phones rather than interact with a salesperson while shopping at the store (Rippé et al. 2017). Thus, customers usually use their own devices in stores to search for more information about a product by scanning QR codes, comparing products, checking product ratings, and asking for advice (Shankar, 2014; Verhoef et al., 2015; Voropanova, 2015). In addition, the advance of social media allows customers to share their satisfaction or dissatisfaction with a brand in real time (Deloitte 2015). In short, today's "hyperconnected" consumers are willing to move seamlessly between different channels, touchpoints, and platforms, whether at home, at work, or in the store, using whichever device they consider most convenient at any given time, thinking of them as a whole (Frazer & Stiehler 2014; Cook 2014; Piotrowicz & Cuthbertson 2014; Van Bruggen et al. 2010).

This consumer behavior poses several challenges, such as the practices of webrooming and showrooming. These behaviors differ depending on the channel that customers use most intensively to search for information and assess alternatives and on which one they choose to purchase the product. Webrooming occurs when consumers research a product online but ultimately buy it in a physical store (Flavián et al. 2016; Wolny & Charoensuksai 2014). In 2007, Verhoef, Neslin, & Vroomen (2007) described this behavior as the main omnichannel behavior. However, the rise of the use of smartphones in stores has enabled showrooming, whereby consumers use their own devices in-store, e.g., to compare product attributes or find offers (Babin et al. 2016; Rapp et al. 2015). Recent studies suggest that customers are replacing traditional searches with smartphones searches (Bachrach, Ogilvie, Rapp, & Calamusa, 2016). This new way of gathering information through smartphones is due to the fact that mobile apps increasingly include features to facilitate and enhance the customer journey. Indeed, previous research has shown that enhancing the quality of the information and operations to be performed via smartphone in the store is positively related to purchase intention (Suh & Lee 2005).

In their study on how companies are leveraging digital technologies with the aim of transforming the customer experience, Parise et al. (2016) found that “72% of consumers said that a relevant mobile offer delivered to their smartphone while shopping in a store would significantly influence their likelihood to make a purchase.” Likewise, Kim & Hahn (2015) determined that consumer adoption of mobile technology increased future purchase intention, while Rippé et al. (2017) more specifically demonstrated that in-store mobile searches are positively related to in-store purchase intention.

Therefore, the following hypothesis is proposed:

H3. Customers’ intention to use their own technology positively affects purchase intention in an omnichannel clothing store.

4.2.3 The moderating role of gender

Consumer characteristics are relevant to the likelihood of engaging in a given behavior (Ajzen & Fishbein, 1980; Zhang, 2005). Thus, we introduced personal characteristics such as socio-demographic variables as variables that can affect purchase intention. Previous studies have shown that shopping behavior, approval, and the acceptance and implementation of new technologies are influenced by personal characteristics such as age, gender, or educational attainment (e.g., Baker, Al-Gahtani, & Hubona, 2007; Brown, Pope, & Voges, 2003; Hasan, 2010; Hernández, Jiménez, & Martín, 2009; Venkatesh et al., 2012; Zhou, Dai, & Zhang, 2007)

Gender in particular is a factor that influences both the purchase experience (Zhou et al. 2007; Kolsaker & Payne 2002) and Internet usage (Jackson et al., 2008; Zhang, 2005).

The empirical evidence on the influence of gender on behavior is contradictory (San Martín & Jiménez 2011). Nevertheless, we believe that studying the moderating effect of gender could be valuable because it is one of the most commonly used variables in marketing segmentation due to its accessibility and simplicity. In addition, gender is the most important variable pertaining to the online purchase of clothing (San Martín & Jiménez 2011). Among other differences between men and women in a fashion retail context, women tend to gather more information prior to making a purchase than men, are more involved in fashion, and tend to spend more per purchase (Walsh et al. 2017; Pentecost & Andrews 2010; Shephard et al. 2016).

Although some studies have been conducted on the importance of gender in the online context, the empirical evidence regarding the moderating role of this variable on the relationship between the intention to use interactive technology and purchase intention in an omnichannel store remains scarce. This paper thus seeks to further explore the moderating effect of gender on this relationship. Given the scant literature on this moderating effect, it will be incorporated through the following research proposition:

Proposition 1: Gender plays a moderating role in the positive relationship between the exploratory variables affecting purchase intention.

To determine the impact of technology in a physical clothing store, we developed a model with three hypotheses and one proposition related to the effect of the intention to use omniretailing technologies and practices on purchase intention in an omnichannel store (Figure 1).

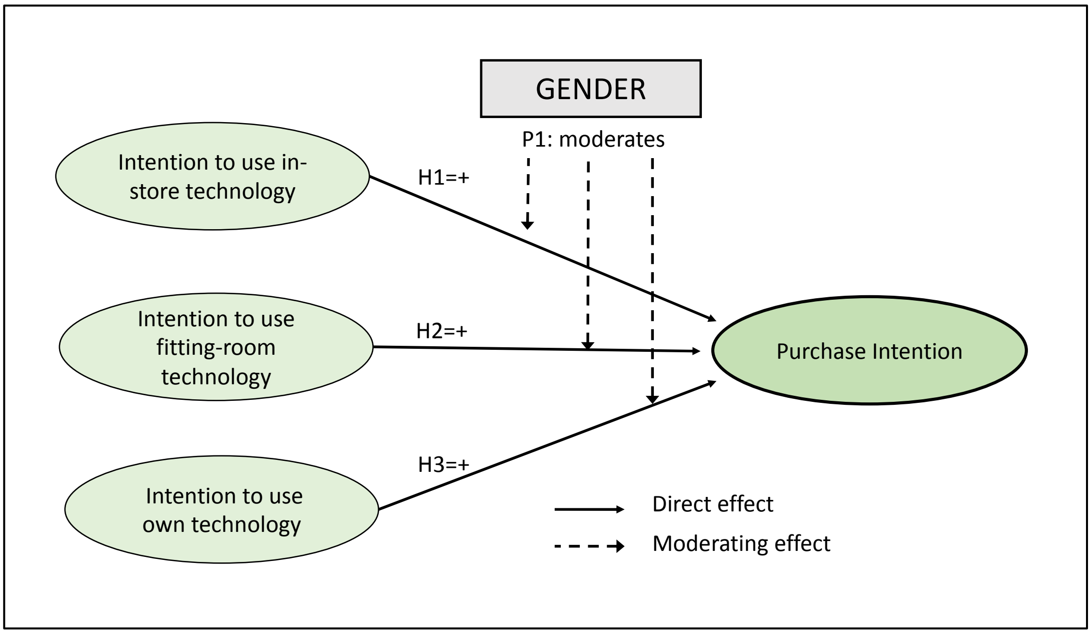
GENDER
P1: moderates
Intention to use in-store technology
H1=+
Intention to use fitting-room technology
H2=+
Purchase Intention
H3=+
Intention to use own technology
Direct effect
Moderating effect

Figure 1. Research proposal

4.3. Methodology

This research focuses on the clothing industry. This industry was chosen not only because of the high revenues and number of jobs it generates, but also because of its ability, as one of the fastest growing sectors in digital purchases, to attract different customer profiles through online and offline channels (PwC 2016). Moreover, apparel is one of the top ten categories most influenced by the in-store use of digital devices (Deloitte 2016). The company Zara was chosen because it is one of the largest and most well-known clothing retailers in Spain to implement an omnichannel strategy. It thus allows its customers to use different channels simultaneously (physical store, online store, social media, and mobile app) during their purchase journey. Last but not least, Zara has also implemented omnichannel technologies and practices at its physical stores, such as interactive signals and the possibility of paying via smartphone. In its store in San Sebastian (Spain), Zara has equipped the fitting rooms with tablets to allow customers to look for other sizes or garments to complete their outfits, pay via automatic checkout, or use the free Wi-Fi.

The measurement scale was borrowed from prior marketing literature, and the items related to the intention to use omnichannel retailing technologies and practices were adapted from Burke (2002) and Lazaris, Vrechopoulos, Doukidis, & Fraidaki (2015). To measure purchase intention, we used the scale developed by Pantano & Viassone (2015). We employed purchase intention to describe the response in terms of intention to purchase in an omnichannel store (Table 1). Participants were instructed to indicate their level of agreement with the items on a seven-point Likert scale ranging from 1 (totally disagree) to 7 (totally agree). Specifically, they were asked about their intention to use the various in-store omnichannel technologies and not their actual use of these technologies since most of them, although popular online, have not yet achieved high penetration offline.

Table 1. Items included on the questionnaire

Dimension	**Definition**
In-store technology	
ST1	I would use in-store technology to avoid lines.
ST2	I would use in-store technology if I did not want to carry heavy bags.
ST3	I would use in-store technology if the item/size were not available in the store.
ST4	I would use in-store technology if I got discounts.
ST5	I would use in-store technology if the online store had a larger assortment.
Fitting-room technology	
FT1	I would use fitting-room technology to ask for advice without leaving the fitting room.
FT2	I would use fitting-room technology to look for an item to complement my outfit.

FT3	I would use fitting-room technology to look for an item in another size or color.
FT4	I would use fitting-room technology to share my look on social media.
Own technology	
OT1	I would like the store to offer free in-store Wi-Fi.
OT2	I would use my smartphone in-store to compare prices.
OT3	I would use my smartphone in-store to look for opinions about a product.
OT4	I would use my smartphone in-store to redeem discount coupons.
OT5	I would use my smartphone in-store to pay.
OT6	I would like Zara to send me information (e.g., about promotions/products) when I check in at the store.
Purchase intention	
PI1	I would make a purchase in this kind of store.
PI2	I would recommend making a purchase in this kind of store to a friend.
PI3	I would like to repeat my experience in this kind of store.

Note: ST (in-store technology); FT (fitting-room technology); OT (own technology); PI (purchase intention).

4.3.1 Data collection

Data were retrieved from the same online survey focused on Spanish omnichannel clothing retail customers of Chapter two and three. Table 2 shows the characteristics of the sample regarding their mobile data plans, the in-store use of the smartphones and the purchase frequency offline and online.

Table 2. Characteristics of the sample

	People with mobile data plans for their smartphone (%)	In-store use of smartphone (%)
Yes	93.8	83.4
No	6.2	16.6

	Purchase frequency	
	Physical store (%)	Internet (%)
Once a week	7.6	6.2
Every two weeks	19.9	9.9
Every month	29.1	21
Every season	38.1	38.4
Once a year	5.1	15.8
Never	0.2	8.7

Partial least squares structural equation modeling (PLS-SEM) was used to analyze the measurement model and test the hypotheses. The software used for this purpose was SmartPLS 3.0. The moderating effects of gender were analyzed by means of a multi-group comparison as gender is a categorical variable (Henseler & Fassott 2010). To this end, two groups were created: men and women.

4.4. Results

4.4.1 Validation and data analysis

A regression analysis of the latent variables was performed, based on the optimization technique of partial least squares (PLS) regression to develop a predictive model representing the relationships between the three proposed constructs and the purchase intention variable.

To evaluate the measurement model, we examined and assessed item validity in terms of the standardized loadings (>0.70) and t-values (>1.96) (Hair et al. 2013). Based on the analysis of the items' contributions and relevance to the content validity of each factor, it was decided to remove the item "FT4" as the results showed it was not significant (Hair et al. 2013).

The measurement model was then verified in terms of construct reliability (i.e., composite reliability and Cronbach's alpha) and convergent validity (AVE) (Table 3 shows the results). Discriminant validity was measured through the comparison of the square root of the AVE and the correlation among constructs (Roldán & Sánchez-Franco 2012). The square root of the AVE must be greater than the corresponding inter-construct correlations; this criterion was met in all cases. In summary, the measurement instruments exhibited acceptable reliability and validity.

Table 3. Construct reliability, convergent validity, and discriminant validity

	CR>0.7	**Cronbach's α**	**AVE>0.5**	**ST**	**FT**	**OT**
MEN						
ST	0.924	0.897	0.709	**0.842**		
FT	0.921	0.872	0.795	0.723	**0.892**	
OT	0.912	0.883	0.632	0.751	0.662	**0.795**
PI	0.941	0.906	0.842	0.784	0.682	0.764
WOMEN						
ST	0.903	0.866	0.652	**0.808**		
FT	0.930	0.888	0.817	0.596	**0.904**	
OT	0.905	0.874	0.615	0.695	0.624	**0.784**
PI	0.956	0.931	0.879	0.688	0.699	0.682

Note: CR (Composite Reliability); AVE (Average Variance Extracted).

4.4.2 Assessment of the Structural Model

This section describes the effects on purchase intention of the use of technology in the store. The R^2 was 69.5% for men and 62.9% for women. Stone-Geisser's cross-validity redundancy Q^2 was 0.579 for men and 0.548 for women, confirming the predictive relevance of our model (Hair et al. 2011). Table 4 also shows the AVE of each factor. Finally, the results show the significant influence of all the variables on purchase intention, supporting all hypotheses—H1 regarding the intention to use in-store technology, H2 regarding the intention to use fitting-room technology, and H3 regarding the intention to use the customer’s own technology—for both men and women (Table 4).

Table 4. Effect of endogenous variables, t-values, and support for the hypotheses

	R^2	Q2	Direct Effects	Correlations	Explained Variance	Sig.	Support for Hypotheses
MEN							
	69.5%	0.579					
H1: In-store tech. → (+) Purchase intention			0.402	0.784	31.5%	0.000	Supported
H2: Fitting-room tech. → (+) Purchase intention			0.152	0.682	10.4%	0.005	Supported
H3: Own tech.→ (+) Purchase intention			0.362	0.764	27.6%	0.000	Supported
WOMEN							
	62.9%	0.548					
H1: In-store tech. → (+) Purchase intention			0.300	0.688	20.6%	0.000	Supported
H2: Fitting-room tech. → (+) Purchase intention			0.368	0.699			Supported
H3: Own tech.→ (+) Purchase intention			0.244	0.682	16.6%	0.001	Supported

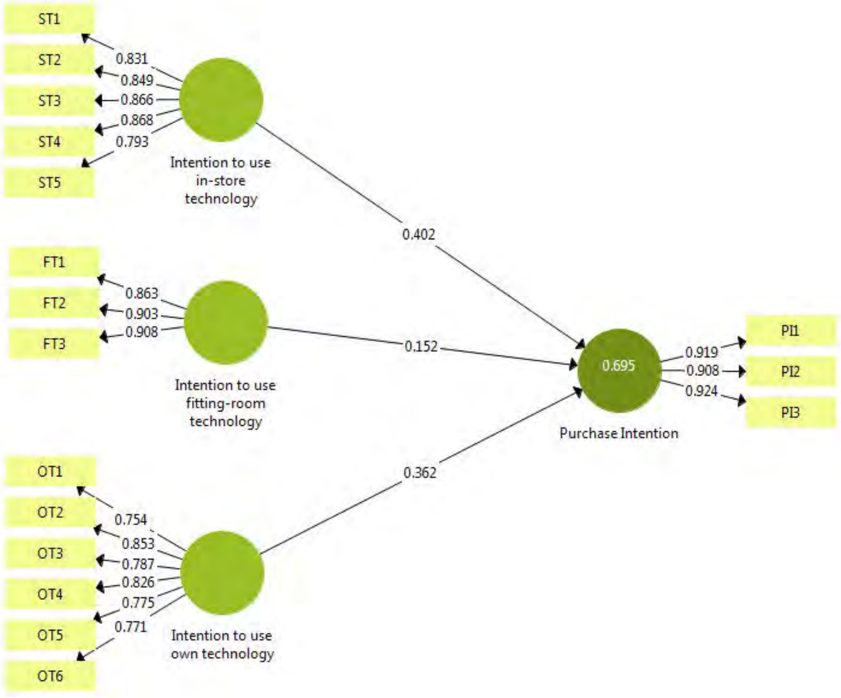
ST1
ST2
ST3
ST4
ST5
0.831
0.849
0.866
0.868
0.793
Intention to use in-store technology
0.402
FT1
FT2
FT3
0.863
0.903
0.908
Intention to use fitting-room technology
0.152
0.695
Purchase Intention
0.919
0.908
0.924
PI1
PI2
PI3
OT1
OT2
OT3
OT4
OT5
OT6
0.754
0.853
0.787
0.826
0.775
0.771
Intention to use own technology
0.362

Figure 2. Measurement model for men

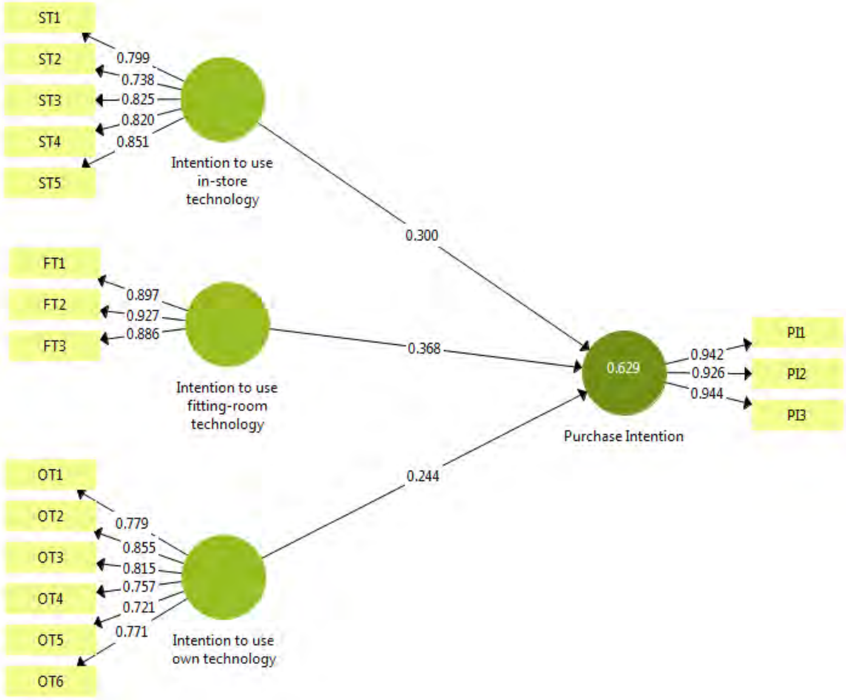
ST1
ST2
ST3
ST4
ST5
0.799
0.738
0.825
0.820
0.851
Intention to use in-store technology
0.300
FT1
FT2
FT3
0.897
0.927
0.886
Intention to use fitting-room technology
0.368
0.629
Purchase Intention
0.942
0.926
0.944
PI1
PI2
PI3
OT1
OT2
OT3
OT4
OT5
OT6
0.779
0.855
0.815
0.757
0.721
0.771
Intention to use own technology
0.244

Figure 3. Measurement model for women

The results showed that in-store technology was the strongest predictor of purchase intention in the case of men, followed by the concept of own technology, which refers to the technology that omnishoppers carry on their person (smartphones and other devices), and the technology offered in fitting rooms. In contrast, for women fitting-room technology was the strongest predictor of purchase intention, followed by the intention to use in-store technology and own technology.

Specifically, as shown in Figure 2, the most important reasons for using in-store technology for men were to get discounts (ST4), to look for an item or size not available at the store (ST3), and to avoid carrying heavy bags (ST2). They were most likely to consider using fitting-room technology to look for other sizes and colors (FT3) and to look for clothes to complement their outfits (FT2). Finally, these omnishoppers used their smartphones in the physical store primarily to compare prices (OT2) and use discount coupons (OT4).

In contrast, as can be seen in Figure 3, women said they would use in-store technology to have a larger assortment (ST5), look for an item or size not available at the store (ST3), and get discounts (ST4). They were most likely to consider using fitting-room technology to ask for advice without leaving the fitting room (FT1) and to look for clothes to complement their outfits (FT2). Finally, they used their smartphones in the physical store primarily to compare prices (OT2) and search for opinions about the products (OT3).

4.4.3 Multi-Group Analysis

A multi-group analysis was carried out to compare the results of the models for each group. We followed two approaches to determine the significance of the differences between the estimated parameters for each group. First, we conducted two parametric tests to analyze the differences between the models and to further assess possible moderating effects (Table 5). Column PEV shows the p-values obtained applying the method proposed by Chin (2000). This method assumes that the data are normally distributed and/or the variances of the two samples are similar (Afonso et al. 2012). Column PW−S shows the p-values obtained applying the Welch–Satterthwaite test in the cases where the variances of the two samples were different. The results of these two parametric tests were similar and did not reveal significant differences between the groups.

Next, we applied non-parametric approaches exemplified by the Henseler test and the confidence interval test. Column PH shows the p-value obtained in the Henseler test. With regard to the confidence interval test, when the parameters estimated based on the confidence intervals for the two groups overlap, a significant difference can be established between the two group-specific path coefficients (Pelegrín-Borondo, Reinares-Lara, Olarte-Pascual, & Garcia-Sierra, 2016). Based on this criterion, the non-parametric approaches did not reveal significant differences between the groups either. In light of the results of both types of tests (parametric and non-parametric), we decided to interpret the results with caution and to conclude that there were no significant differences at a confidence level of 95%, as non-parametric tests are more restrictive (Sarstedt et al. 2011).

Table 5. Multi-group comparison

Hypothesis	**P_{EV}**	**$P_{W\text{-}S}$**	**P_H**	**Confidence intervals**		
				2.5%-97.5%	2.5%-97.5%	Sig.
Intention to use technology: Men vs. Women						
In-store tech. → Purchase intention	0.266	0.265	0.133	0.277, 0.506	0.161, 0.438	n.d.
Fitting-room tech. → Purchase intention	0.025	0.025	0.988	0.050, 0.283	0.207, 0.502	n.d.
Own tech.→ Purchase intention	0.211	0.210	0.104	0.240, 0.475	0.120, 0.409	n.d.

Notes: Significance levels based on two-tailed Student's t-distribution (4.999). P_{EV} = p-value of the Henseler test; n.d. = no significant differences; s.d. = significant differences. When there is no overlap in the intervals in the confidence interval test, significant differences are considered to exist (Sarstedt et al., 2011)

4.5. Discussion and conclusions

This work is an important contribution to the omnichannel literature as it shows what omnishoppers' favorite in-store technologies are and how the intention to use them affects purchase intention in an omnichannel retail environment. In today's increasingly competitive retail world, companies need to know which technologies and omnichannel practices are most attractive to their customers. An omnichannel store is one that blends the advantages of physical stores (e.g., the ability for consumers to see, feel, touch, and try the product) with those of the online world (e.g., a greater product offering and 24/7 availability and information). The omnichannel strategy is centered on customers and their shopping experience and seeks to ensure seamless communication between the company and customer through the myriad channels and touchpoints throughout the shopping journey, allowing customers to interact with the brand through whatever channel they might choose at any given time.

The study aimed to explore consumers' intention to use technology in an omnichannel environment following the integration of different channels and technologies by a retailer in a physical store. More specifically, the study's aim was twofold: first, to explore how the intention to use in-store technology would affect purchase intention and determine which technologies and practices consumers consider most important in an omnichannel clothing store; and, second, to *test the moderating effect of gender on this relationship*.

The proposed model was found to sufficiently predict purchase intention in an omnichannel store for both groups, with an R^2 of 69.5% for men and 62.9% for women. Our findings support and provide further evidence for the idea that consumers' purchase intentions are influenced by their intention to use different digital technologies and practices in-store. However, we did not find statistically significant differences between the two groups—men and women—when applying the multi-group comparison to the three dimensions specified in the model. Thus, the moderating effect of gender was rejected in our study. This finding may be due to the fact that most of the sample population was college-educated (e.g., San Martín & Jiménez, 2011). Previous literature has confirmed that gender differences are smaller among college graduates, due to the deeper penetration and diffusion of ICT among people with a university education (e.g., Zhou et al., 2007).

The present study suggests that consumers expect stores to offer them technological devices in the exhibition space, facilitate the use of their own devices, and equip their fitting rooms with additional technological services. These findings are consistent with those of previous studies regarding the positive influence of incorporating interactive technologies on consumers' shopping behavior (Pantano & Servidio 2012; Pantano & Viassone 2015; Poncin & Ben Mimoun 2014). Specifically:

In-store technology in men's clothing stores should provide information on item availability, supplement the information on the range of products, and make it possible to avoid having to carry heavy bags. In addition, brands should facilitate the use of these customers' own mobile devices in their physical stores to obtain price-related advantages (e.g., to compare prices or obtain discount coupons).

In-store technology in women's clothing stores should allow shoppers to browse a larger assortment of products and sizes. In addition, it should make it possible for staff to give them advice without the need for the shoppers to leave the fitting room and facilitate the use of their own smartphones to compare prices and search for opinions.

However, customers would not use the technologies provided by the brick-and-mortar stores to communicate on social media in either case. This may be because customers prefer to use their own devices to perform these types of social activities for privacy and security reason.

These findings have several important managerial implications for retailers. One key implication is that physical stores must adapt if they want to survive in the new environment. A brand's physical presence must add value in terms of service, product availability, engagement, and the overall customer experience (Aubrey & Judge 2012). As shown here, this could be achieved, for example, through the implementation of in-store technology (e.g., automatic checkout, tablets, free Wi-Fi) to allow customers to browse products and place orders. This is especially true of fitting-room technology, due to the importance of fitting rooms during the shopping process. Often, customers do not buy because they do not want to go to the fitting room and have to try things on, because they are alone and it is a nuisance to have to leave the fitting room to look for a garment in another size, etc. If retailers implement intelligent fitting rooms or install tablets to facilitate and expedite the purchase, many of these potential shoppers might decide to go to the fitting room and, ultimately, to make the purchase.

In addition, the store should facilitate the purchase process by allowing itself to be used as a collection point for online or mobile orders in order to make the store a place to build loyalty

To offer a superior in-store experience, mobile app developers and retailers should focus not only on providing a supplemental shopping assistant interface, but should also integrate this interface with hardware features that seamlessly blend the physical and online world (C. Lazaris et al. 2015). Companies must facilitate traffic between the online and physical store by making the same offers, conditions, and services available on both channels (Rodríguez-Torrico et al. 2017). That way, customers will be able to compare prices, check stock availability in real time, or interact with the brand, making the shopping process easier and more pleasurable and preventing free-riding consumer behaviors. Webroomers and showroomers can thus conduct their searches at the physical store and close the purchase on the spot thanks to the technology implemented at the store. The webroomers will come to the store already informed about the product, in order to touch it before buying to make the decision with more confidence; showroomers will first make sure of the product they want to buy at the store, and then use their own smartphone or other technological devices available at the store to complete the shopping process after researching opinions, prices, or product features.

In addition, retailers should invest in technologies that provide a seamless consumer experience across all available channels, in order to facilitate the shopping process and, thus, enhance customer engagement and loyalty to the brand (Cook 2014; Pantano & Naccarato 2010). Retailers must focus on the technology that is relevant for consumers and actually provides value (Blázquez 2014); it must solve existing problems, not generate new ones. In this regard, the Internet of Things opens a world of possibilities for retailers, for example, by streamlining inventory management (connecting both the physical and virtual stores) and customer databases (making it possible to send personalized offers to each customer in real time) or by integrating technology into garments to improve their efficiency and make them more useful.

This paper also contributes to the literature on omnichannel retailing by identifying which technologies and omnichannel practices are most important for omnishoppers and how the intention to use in-store technology affects purchase intention. To our knowledge, it is the first academic, empirical study on the intention to use in-store technology in a clothing store in Spain that also analyzes the moderating effect of gender.

However, this study does have some limitations. First, the analysis is rather general, examining the use of interactive in-store technologies as a general concept. Another shortcoming of this paper is that it looks at consumer attitudes toward in-store technology without considering the cost of the technology, which might reduce retailers' willingness to adopt it. This cost can vary depending on the novelty of the technology, the level of realism it enables, or the number of devices to be installed. In addition, our research did not take into account other important atmospheric factors, such as design, ambience, or social factors, which also influence purchase intention. Moreover, our study was based on the specific case of an omnichannel clothing company that is only in the early stages of its strategy to implement interactive technology at its stores. A further limitation stems from the fact that the information is limited to Spain, which places constraints on any generalization of the model to other geographical and cultural spaces.

The findings reported here point to some interesting possibilities for future research, such as extending the study to other product categories or replicating it in another country in order to gather more generalizable consumer responses. Likewise, the moderating effect of other demographic and contextual variables, such as age, education level, product engagement, or current in-store use by customers of their own devices, should be explored to complement the current model.

In sum, this study has sought to supplement previous studies on omnichannel retailing and the importance of technology in this new retail environment. Technology is changing the future of retailing. Retailers should thus offer deep omnichannel integration focused on the customer shopping experience, blurring the boundaries between offline and online channels, and creating a holistic shopping experience, since customers want to interact with the brand, not the channels. The main technology challenge for brands will be to take advantage of the existing brand-customer interaction through mobile devices, as well as to understand customers' preferences in order to personalize the shopping experience using new marketing formats and technologies.

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Chapter 5

Key Factors for In-store Smartphone Use in an Omnichannel Experience: Millennials VS non-millennials

5.1 Introduction

Omnichannel retailing has dramatically changed the way customers shop. Nowadays, consumers increasingly simultaneously use multiple channels and touchpoints during their customer journey and demand that they be connected and integrated to enjoy a holistic and seamless shopping experience (Mosquera, Olarte-Pascual, & Juaneda-Ayensa, 2017). In this new scenario, the smartphone has become a powerful tool. Customers are mobile dependent and prefer to consult their phones rather than salespersons to carry out different tasks in-store, such as searching for product information and prices, checking product ratings, comparing products and paying; they also use them to consult family and friends for advice (Rippé, Weisfeld-Spolter, Yurova, Dubinsky, & Hale, 2017; Shankar, 2014; Voropanova, 2015). Moreover, they have the potential to become important drivers in the omnichannel context due to their importance as initiators for conversion to other touchpoints or channels.

As Marriott, Williams, & Dwivedi, (2017) highlight, business managers stress the importance of understanding customer behavior. This is crucial for the successful management and development of m-shopping in the retail industry (Hung, Shih-Ting, & Hsieh, 2012)

M-shopping is defined by many authors as a subsidiary of m-commerce; the online purchase of products or services using a smartphone (Agrebi & Jallais, 2015; Ko, Kim, & Lee, 2009; Ozok & Wei, 2010; San-Martín, López-Catalán, & Ramón-Jerónimo, 2013; Wu & Wang, 2006; Yang, 2010; Yang, 2016). However, for the purpose of this research, we use a wider definition of m-shopping, which includes browsing, searching, purchasing and comparing products using smartphones (Chen, 2013; Groß, 2014; Marriott et al., 2017; Yang & Kim, 2012). M-shopping is a critical part of m-marketing as it empowers shoppers by allowing them to research product characteristics from multiple sources and carry out tasks such as checking product availability and prices, compare different brands and offers and read user opinions and reviews (Groß, 2015; Holmes, Byrne, & Rowley, 2013; Lai & Lai, 2013). In addition, m-shopping encompasses the use of smartphones in pre-purchasing activities such as finding directions to the store and checking opening hours (Wang, Malthouse, & Krishnamurthi, 2015).

Previous research has shown that consumers’ intention to use smartphones in-store positively affects purchase intention, especially when they are used to compare prices and obtain discount coupons (Mosquera, Juaneda-Ayensa, Olarte-Pascual, & Sierra-Murillo, 2018). However, there is a lack of research into the motivations for in-store smartphone use. Thus, following the suggestion of Venkatesh, Thong, & Xu (2012), this study seeks to bridge that gap by examining the applicability of the UTAUT2 model to explain consumer use of smartphones in a physical store. Additionally, previous literature has discussed the moderating effect of age, demonstrating that young people are more innovative and more likely to accept new technologies than older people (e.g. Bigné et al., 2005; K. Yang, 2010; Yang & Forney, 2013; K. Yang & Kim, 2012). Due to m-shopping and omnichannel retailing literature being in its infancy, practical and theoretical understanding remains limited. For this reason, this study’s aim is twofold: first, to identify the key factors influencing customers’ intentions to use smartphones in-store to gain an accurate understanding of customer m-shopping acceptance behavior and their actual behavior in an omnichannel context; and, second, to test the moderating effect of age, differentiating between millennials and non-millennials.

The paper is organized into four sections. The first offers an overview of the literature describing the conceptual foundation for the acceptance and in-store use of smartphones. The second describes the sample and the methodology employed. The third reports the results. Finally, the main conclusions and implications are discussed within the context of future research.

5.2 Literature Review and hypotheses

5.2.1 Theory of Acceptance and In-store Use of Smartphones: Model and Hypotheses

Our research framework is based on the unified theory of acceptance and use of technology (UTAUT2) model (Venkatesh et al., 2012), which is an extension of the original UTAUT model (Venkatesh et al., 2003). We select the UTAUT2 model because it provides an explanation for information and communication technology (ICT) acceptance and use by consumers and can be applied to different technologies and contexts (Venkatesh et al., 2012). Moreover, Marriott et al. (2017) gave us three more reasons to use the UTAUT2 model. First, "UTAUT2 was created in relation to mobile utilization". Second, "UTAUT2 incorporates the cost-benefit factors of *performance expectancy* and *effort expectancy*". Third, "UTAUT2 accounts for voluntary situations and allows for time factors to be considered". Under this model, a customer's intention to accept and use a new technology is affected by seven factors: *performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), hedonic motivation (HM), price value (P)* and *habit (HA).*

Although the model has been used previously to explain customer behavior in the context of mobile commerce (e.g. Baptista & Oliveira, 2015; Hew, Lee, Ooi, & Wei, 2015), to our knowledge little attention has been paid to the in-store omnichannel shopping context (Juaneda-Ayensa, Mosquera, & Sierra Murillo, 2016). Thus, this study examines the applicability of the UTAUT2 model specifically to explain consumers' use of smartphones, while in a physical store, in an omnichannel context. In the following paragraphs we describe the main constructs of the research model.

Performance expectancy is defined as the degree to which using a technology will provide benefits to the consumer in performing certain activities (Venkatesh et al., 2012). Performance expectancy adapted to omnichannel stores considers how consumers perceive the benefits they receive by using smartphones while in a physical store. This variable has been shown to be one of the strongest predictors of behavioral intention to adopt m-commerce and an influence on omnichannel shopping behavior (e.g. Agrebi & Jallais, 2015; Groß, 2015; Juaneda-Ayensa et al., 2016). Thus, the following hypothesis is proposed:

H1. Performance expectancy positively affects behavioral intention to use a smartphone in-store.

Effort expectancy is described as the degree of ease/effort associated with consumers' use of technology (Venkatesh et al., 2012). Perceived ease of use has been demonstrated to be a significant influence on the intention to use mobile commerce (e.g. Agrebi & Jallais, 2015; Groß, 2015; Hew et al., 2015; Marriott et al., 2017; Yang, 2010). In addition, this factor is a key determinant of purchase intention in an omnichannel context (Juaneda-Ayensa et al., 2016). In keeping with these previous works, we propose:

H2. Effort expectancy positively affects behavioral intention to use a smartphone in-store.

Social influence is defined as how "consumers perceive that important others (e.g. family and friends) believe that they should use a particular technology" (Escobar-Rodríguez & Carvajal-Trujillo, 2014, p.73). In the case of m-shopping, previous literature suggests that social influence encourages m-shopping acceptance behavior (Tsu Wei, Marthandan, Yee-Loong Chong, Ooi, & Arumugam, 2009; Yang, 2010; Yang & Kim, 2012; Yang & Forney, 2013). Moreover, younger consumers are more susceptible to technology adoption due to social media (Bigné et al., 2005). Adapting social influence to omnichannel shopping, we hypothesize that behavioral intention to use devices in-store is likely to be influenced by friends, family, role models and celebrities. Therefore, the following hypothesis is proposed:

H3. Social influence positively affects behavioral intention to use a smartphone in-store.

Facilitating conditions are the consumers' perceptions of the resources and support available to perform a behavior (Brown & Venkatesh, 2005; Venkatesh et al., 2003). Previous studies demonstrate that a favorable set of facilitating conditions results in greater intention to use shopping apps (Hew et al., 2015; Marriott et al., 2017). We hypothesize that when the consumer has a favorable perception of the facilitating conditions, it will lead to smartphone use in-store during either, or both, the pre-purchase and purchase stages. Thus, we have:

H4a. Facilitating conditions positively affect behavioral intention to use a smartphone in-store.

H4b. Facilitating conditions positively affect the use behavior of smartphones in-store.

Hedonic motivation is defined as the pleasure or enjoyment derived from using a technology (Venkatesh et al., 2012). Previous literature has shown the influence of hedonic motivation on the intention to use m-shopping (e.g. Agrebi & Jallais, 2015; Groß, 2015; Ko et al., 2009; Yang & Kim, 2012). However, Juaneda-Ayensa et al., (2016) did not find that hedonic motivation influenced purchase intention in the omnichannel context. As there are different results with respect to this variable, we hypothesize that the higher is consumers' perceived enjoyment when they use their smartphones in-store, the higher will be their behavioral intention to use them. Thus, we put forward the following hypothesis:

H5. Hedonic motivation positively affects behavioral intention to use a smartphone in-store.

Habit is described as the extent to which people tend to perform behaviors automatically because of learning (Limayem, Hirt, & Cheung, 2007). This concept, which is a new construct in the UTAUT2 model, has been considered as a predictor of behavioral intention to use mobile apps (Hew et al., 2015; Yang & Kim, 2012). In addition, Kim (2012) demonstrated that habit influenced the actual use of mobile apps and data services. However, Juaneda-Ayensa et al., (2016) did not find that habit influenced purchase intention in the omnichannel context. Taking into account the different results recorded in the literature and that the use of mobile devices is a part of the daily lives of shoppers, we hypothesize:

H6a. Habit positively affects behavioral intention to use smartphones in-store.

H6b. Habit positively affects use behavior of smartphones in-store.

Price value is defined as the consumers' cognitive tradeoff between the perceived benefits of the use of internet data and the monetary cost of using them (Venkatesh et al., 2012). Thus, we hypothesize that if the perception of price value when accessing data on the internet using smartphones in-store has greater benefits than the perceived monetary cost (e.g. data cost and other types of service charges), consumers are more likely to access them. Therefore, the following hypothesis is proposed:

H7. Price value positively affects behavioral intention to use a smartphone in-store.

Behavioral intention is the main antecedent of use behavior, and it has a direct effect on individuals' actual use of a given technology (Chopdar, Korfiatis, Sivakumar, & Lytras, 2018). Several studies in different contexts confirm the relationship between intention to perform a behavior and actual behavior (Aldás-Manzano et al., 2009; Dabholkar & Bagozzi, 2002; Dabholkar, Michelle Bobbitt, & Lee, 2003; Groß, 2015). Thus, the following hypothesis is proposed:

H8. Behavioral intention positively affects use behavior of smartphones in-store.

5.2.2 The Moderating Role of Age: Millennials vs Non-millennials

Previous literature has demonstrated that shopping behavior and the use of new technologies during the customer journey are influenced by sociodemographic variables such as gender, age and education (e.g. Baker, Al-Gahtani, & Hubona, 2007; Hernández, Jiménez, & Martín, 2009; Venkatesh et al., 2012). Regarding age, previous studies have shown behavioral differences between "millennials" and "non-millennials" (Haught, Wei, Xuerui, & Zhang, 2014; Hall & Towers, 2017; SivaKumar & Gunasekaran, 2017). Millennials are the generation born between the early 1980s and the early 2000s (Strauss & Howe, 1991). They are considered the first high-tech generation because they are early adopters of technological devices and expert Internet users. They are known as digital natives, as opposed to members of the previous generation, who are called digital immigrants (Palfrey & Gasser, 2008).

Previous research has noted that young people integrate smartphones into their daily lives, while older people generally use them for basic functions (Natarajan et al., 2018). Some studies identify a relationship between the age of consumers and the probability that they will use smartphones and mobile technologies during their shopping journeys (Acheampong, Zhiwen, Boateng, Boadu, & Acheampong, 2017; Ha & Stoel, 2009; Lian & Yen, 2014; Liébana-Cabanillas, Sánchez-Fernández, & Muñoz-Leiva, 2014; Natarajan, Balasubramanian, & Kasilingam, 2018; Yu, 2012). Although many works have studied this influence, there is no consensus on the relationship between the age of consumers and the probability that they will use new technology in their shopping journeys (Liébana-Cabanillas et al., 2014). The study of how age can influence the way in which a consumer accepts and uses new technology is included in the UTAUT2 (Venkatesh et al., 2012) as a moderating effect of the influence of facilitating conditions, hedonic motivation, habit and price value on behavioral intention; however, the authors did not include the influence of age on performance expectancy, effort expectancy and social influence. Although no works have studied the influence of age using the UTAUT2 model, we have found some works studying the influence of age using the UTAUT model. Regarding the influence of age as a moderator variable in technology acceptance, effort expectancy is stronger for older consumers (Venkatesh et al., 2003; Yu, 2012). Lian

& Yen, (2014), in their study into online shopping drivers and barriers for older adults, concluded that the major online shopping driving forces are performance expectancy and social influence. Due to the lack of consensus regarding this moderating effect and the lack of works specifically regarding the use of smartphone in the omnichannel context, we would like to develop further debate in this area. For this reason, we studied the moderating role of age by differentiating between two groups, millennials and non-millennials. Specifically, regarding m-shopping, some studies have shown that younger consumers are more likely to accept m-shopping than older consumers (Bigné et al., 2005; Yang & Kim, 2012; Yang & Forney, 2013) and that the intention to use smartphones in-store positively affects the use behavior more in young people (Grewal, Ahlbom, Beitelspacher, Noble & Nordfält, 2018). Due to the limited papers that discuss this moderating effect in the omnichannel shopping process, we incorporate it through the following hypotheses:

H9: Age ("millennials" vs "non-millennials") plays a moderating role in the relationship between the seven exogenous variables and intention to use smartphones in-store.

This hypothesis is divided into the following:

H9a: Age plays a moderating role in the relationship between performance expectancy and intention to use smartphones in-store.

H9b: Age plays a moderating role in the relationship between effort expectancy and intention to use smartphones in-store.

H9c: Age plays a moderating role in the relationship between social influence and intention to use smartphones in-store.

H9d: Age plays a moderating role in the relationship between facilitating conditions and intention to use smartphones in-store.

H9e: Age plays a moderating role in the relationship between hedonic motivations and intention to use smartphones in-store.

H9f: Age plays a moderating role in the relationship between habit and intention to use smartphones in-store.

H9g: Age plays a moderating role in the relationship between price value and intention to use smartphones in-store.

H10: Age (“millennials” vs “non-millennials”) plays a moderating role in the relationship between the three antecedents of use behavior of smartphones in-store.

H10a: Age plays a moderating role in the relationship between facilitating conditions and the real behavior of using smartphones in-store.

H10b: Age plays a moderating role in the relationship between habit and the real behavior of using smartphones in-store.

H10c: Age plays a moderating role in the relationship between behavioral intention and the real behavior of using smartphones in-store.

To determine the impact of the different constructs on the behavioral intention to use a smartphone and use behavior, we developed a model with nine hypotheses related to the effect of age on customers’ in-store use of their smartphones in an omnichannel context (Figure 1).

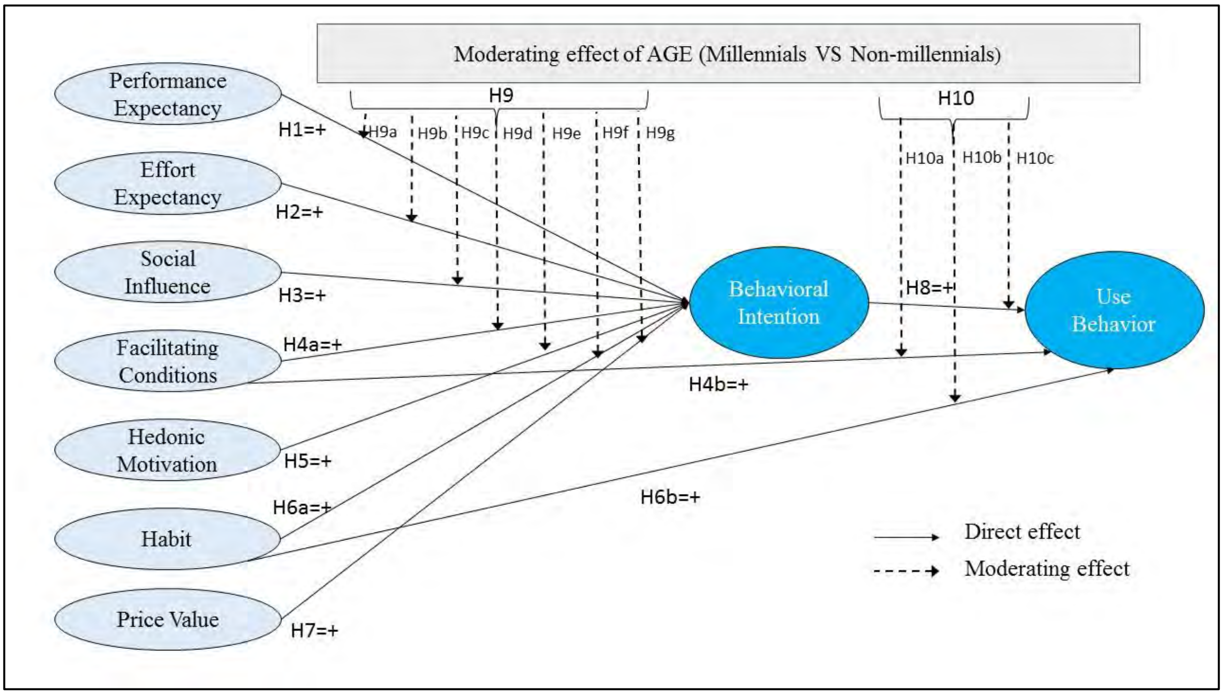
Moderating effect of AGE (Millennials VS Non-millennials)
H9
H10
H9a
H9b
H9c
H9d
H9e
H9f
H9g
H10a
H10b
H10c
Performance Expectancy
H1=+
Effort Expectancy
H2=+
Social Influence
H3=+
Facilitating Conditions
H4a=+
H4b=+
Hedonic Motivation
H5=+
H6a=+
Habit
H6b=+
Price Value
H7=+
Behavioral Intention
H8=+
Use Behavior
Direct effect
Moderating effect

Figure 1. Research model

5.3 Methodology

Data were collected using a personal survey focusing on Spanish customers who use smartphones in physical stores. The measurement scale was adopted from Venkatesh, Thong, & Xu (2012) and we developed the items related to use behavior from the results of previous reports (Gfk, 2015; SmartmeAnalitics, 2017). The performance expectancy, effort expectancy, facilitating conditions and habit constructs are each composed of four items. Social influence, hedonic motivation, price value and behavioral intention are each comprised of three items. Questions were answered on an eleven-point Likert scale, with 0 referring to totally disagree and 10 referring to totally agree. The instrument was pre-tested on four university marketing professors and, as a result, modifications were made to improve the content and make it more understandable and consistent. Thereafter, we conducted a pilot study with two groups (millennials and non-millennials), using a paper version. The data were collected in November 2017. The sample consisted of 1,043 individuals. Of the surveys collected, 40.7% were millennials (between 18 and 35 years) and 59.3% were non-millennials (older than 36 years). Table 1 summarizes the profile of the respondents.

Table 1. Profile of respondents

Characteristics	**Frequency**		**Percentage (%)**	
	Millennials	Non Millennials	Millennials	Non Millennials
Gender				
Male	219	309	51.5	50.0
Female	206	309	48.5	50.0
Level of education				
Primary education	54	160	12.7	25.9
Secondary education	261	214	61.4	34.6
University studies	110	244	25.9	39.5
Mobile data plans				
Yes	418	539	98.4	87.8
No	7	79	1.6	12.8

To test the hypotheses about the significance of the relationships in the model and the multi-group analysis we used PLS-SEM (Partial Least Squares-Structural Equation Modeling) (Rasoolimanesh, Ringle, Jaafar, & Ramayah, 2017). Our objectives were to predict the intention to use mobile technology in a store in an omnichannel environment and identify the key drivers that explain use and use behavior. Hair, Ringle, & Sarstedt, (2011, p. 144) recommend using PLS-SEM “if the goal is predicting key target constructs or identifying key 'driver' constructs”, as in our case”. Similarly, other authors suggest that PLS-SEM is appropriate when the research has a predictive purpose (Cepeda Carrión, Henseler, Ringle, & Roldán, 2016; G. Shmueli & Koppius, 2011; Galit Shmueli, 2010; Galit Shmueli, Ray, Velasquez Estrada, & Chatla, 2016) and an explanatory purpose (Henseler, 2018), as is the case with our study.

In this study, age is a categorical variable that integrates two groups: millennials and non-millennials. The moderating influence of age has been analyzed through a multi-group analysis (Henseler & Fassott, 2010).

5.4 Results

5.4.1 Measurement model

The reliability and validity of the measurement model were analyzed. We tested the measurement model in the general model to be able later to maintain the structure when executing the two models for the millennials and non-millennials.

Subsequently, the structural model was analyzed and the effects of the exogenous variables on the endogenous variables were checked. Finally, a multi-sample analysis was carried out.

In the analysis of the measurement model, reliability and convergent and discriminant validity were verified. Regarding the reliability of the indicators, most factor loadings were> 0.70 and had t-values> 1.96, but two did not (Hair, Ringle, & Sarstedt, 2013). These two exceptions could be considered for removal based on composite reliability (CR) and convergent validity (AVE). Regarding the reliability of the scales used to measure the factors, the CR coefficient should, to establish internal consistency, be higher than 0.7 (Hair, Hult, Ringle, & Sarstedt, 2017). As to convergent validity, the

AVE must be> 0.5 (Hair et al., 2017). The results in Table 2 show that all the constructs fit these criteria. Given that the requirements of reliability and convergent validity have been met, we decided to maintain the indicators with loadings in the range of 0.4-0.7 (Rasoolimanesh et al., 2017). Discriminant validity was measured by two methods. First, it was measured by comparing the correlation among constructs and the square root of the AVEs (Roldán & Sánchez-Franco, 2012). Secondly, we used the heterotrait-monotratit (HTMT) ratio, which has been established as a superior criterion (Henseler, Ringle, & Sarstedt, 2015). The present study uses the more conservative level of 0.85 to assess discriminant validity. In Table 3 it can be seen that in all the cases the square root of the AVEs is greater than their corresponding intercorrelations and that all results are below the critical value of 0.85. Accordingly, both criteria for achieving discriminant validity are satisfied. These results allow us to confirm that the measuring instrument is reliable and valid.

Table 2. Assessment results of the measurement model

Construct/ Associated Items	Loading	CR>0.7	Cronbach's alpha	AVE>0.5
Performance Expectancy (PE)		0.951	0.890	0.830
PE1	0.902			
PE2	0.929			
PE3	0.896			
PE4	0.917			
Effort Expectancy (EE)		0.958	0.941	0.851
EE1	0.902			
EE2	0.943			
EE3	0.949			
EE4	0.895			
Social Influence (SI)		0.959	0.935	0.886
SI1	0.930			
SI2	0.956			
SI3	0.938			

Facilitating Conditions (FC)		0.879	0.816	0.647
FC1	0.835			
FC2	0.846			
FC3	0.815			
FC4	0.714			
Hedonic Motivation (HM)		0.969	0.951	0.911
HM1	0.949			
HM2	0.967			
HM3	0.948			
Price Value (P)		0.943	0.910	0.847
P1	0.921			
P2	0.943			
P3	0.897			
Habit (HA)		0.947	0.926	0.818
HA1	0.919			
HA2	0.912			
HA3	0.857			
HA4	0.928			
Behavioral Intention (BI)		0.981	0.972	0.946
BI1	0.973			
BI2	0.974			
BI3	0.971			
Use Behavior (UB)		0.916	0.890	0.613
UB1	0.866			
UB2	0.701			
UB3	0.891			
UB4	0.896			
UB5	0.642			
UB6	0.823			
UB7	0.604			

Table 3. Discriminant validity

	PE	**EE**	**SI**	**FC**	**HM**	**HA**	**P**	**BI**	**UB**
PE	**0.911**	0.596	0.593	0.560	0.720	0.691	0.385	0.757	0.742
EE	0.559	**0.922**	0.359	0.811	0.621	0.531	0.410	0.545	0.567
SI	0.554	0.337	**0.941**	0.404	0.585	0.573	0.294	0.573	0.559
FC	0.492	0.710	0.355	**0.804**	0.599	0.448	0.487	0.532	0.485
HM	0.679	0.558	0.552	0.531	**0.955**	0.770	0.405	0.743	0.689
HA	0.644	0.499	0.534	0.394	0.726	**0.904**	0.319	0.829	0.774
P	0.354	0.380	0.272	0.420	0.376	0.294	**0.920**	0.383	0.364
BI	0.721	0.521	0.546	0.477	0.714	0.789	0.360	**0.973**	0.735
UB	0.682	0.521	0.511	0.417	0635	0.707	0.323	*0.686*	**0.783**

Note: values on the main diagonal are the square roots of the AVEs. Below the diagonal, correlations between the factors. Above the diagonal: ratio HTMT$_{.85}$.

5.4.2 Assessment of the Structural Model

First, we assessed the structural model for collinearity between items using the variance inflection factor (VIF) values (Hair et al., 2017). The VIF values of this analysis are lower than 3.3 in all cases (complete model and millennial and non-millennial models), so there are no problems of multicollinearity (Petter, Straub, & Rai, 2007).

Table 4. Full collinearity VIFs

VIF Behavioral Intention			
	Total	Millennials	Non-millennials
PE	2.332	2.149	2.221
EE	2.449	1.946	2.290
SI	1.641	1.722	1.655
FC	2.229	1.869	2.177
HM	2.910	2.201	3.206
HA	2.422	2.118	2.495
P	1.280	1.215	1.253
VIF Use behavior			
FC	1.296	1.219	1.258
HA	2.648	2.719	2.346
BI	2.893	2.928	2.560

We now discuss the effects of the exogenous variables on behavioral intention and real behavior. Regarding the structural model, we analyzed: (i) the R^2 (coefficient of determination), (ii) the Q^2 (predictive relevance of the model) and (iii) the algebraic sign, magnitude and significance of the path coefficients (Hair, Sarstedt, Ringle, & Mena, 2012). The results show that the model has the capacity to explain both behavioral intention and use behavior. Overall, for the millennials, the variables performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit and price value explain 71.8% of the variation in behavioral intention (R2 = 0.718). For the non-millennials, the R2 is 0.685. Chin (1998) argues that R2 values of 0.67, 0.33 and 0.19 can be considered as substantial, moderate and weak, respectively. Thus, following this prescription, our research model “substantially” explains variations in behavioral intention to use smartphones in store. The R2 for use behavior was 0.498 for millennials and 0.546 for non-millennials. In this case, the research model “moderately” explains the variations. Thus, the study demonstrates that UTAUT2 is appropriate to explain the in-store use of smartphones in an omnichannel context and explains variations in behavioral intention and use behavior (Henseler et al., 2015). Regarding the predictive power of the model, we used the Q^2 provided by PLS predict. Our results gave us 0.689 for the millennials and 0.651 for the non-millennials for behavioral intention. For use behavior, it was 0.416 for millennials and 0.501 for non-millennials. Table 5 also shows the explained variance of each factor for each group. It can be seen that the direct effect of effort expectancy (-0.045) and price value (-0.002) are negative for millennials. They are negative also for non-millennials for price value (-0.002). According to Falk & Miller (1992, p. 75), "when the original relationship between the two variables is so close to zero, the difference in the signs simply reflects random variation around zero". In summary, the results support seven of the hypotheses for the millennial group: H1 (regarding the influence of performance expectancy), H3 (social influence), H4a (facilitating conditions), H5 (hedonic motivation), H6a (regarding habit), H8 (behavioral intention) and H7 (regarding the influence of habit on use behavior). H2 (effort expectancy), H7 (price value) and H4b (regarding the influence of facilitation conditions on use behavior) were rejected, as the relationships were not significant. With regard to the non-millennials, support was found for seven hypotheses, H1, H5, H6a, H7, H8, H4b and H6b, while no significant differences were found for H2, H3 and H4a (Table 5).

Table 5. Effect of endogenous variables, p-values and support for the hypotheses

	R^2	Q^2	Direct Effects	Correlations	Explained Variance	*p*-Value	Confidence Intervals	Support for Hypotheses
Millennials								
Behavioral Intention	0.718	0.689						
H1: PE->BI			0.254	0.697	17,70%	0.000	[0.173;0.337]	H1: Supported
H2: EE->BI			-0.045	0.439	-1,98%	0.241	[-0.120;0.030]	H2: Non-Supported
H3: SI->BI			0.075	0.569	4,27%	0.039	[0.003;0.146]	H3: Supported
H4a: FC->BI			0.087	0.424	3,69%	0.014	[0.016;0.155]	H4a: Supported
H5: HM->BI			0.114	0.648	7,39%	0.030	[0.015;0.220]	H5: Supported
H6a: HA->BI			0.514	0.795	40,86%	0.000	[0.428;0.594]	H6a: Supported
H7: P->BI			-0.002	0.232	-0,05%	0.941	[-0.061;0.054]	H7: Non-Supported
Use Behavior	0.498	0.416						
H8: BI->UB			0.442	0.683	30,19%	0.000	[0.314;0.560]	H8: Supported
H4b: FC->UB			0.052	0.334	1,74%	0.134	[-0.017;0.119]	H4b: Non-Supported
H6b: HA-> UB			0.276	0.645	17,80%	0.000	[0.144;0.406]	H6b: Supported

Non-millennials								
Behavioral Intention	0.685	0.651						
H1: PE->BI			0.275	0.704	19,36%	0.000	[0.185;0.364]	H1: Supported
H2: EE->BI			-0.002	0.492	-0,10%	0.960	[-0.075;0.070]	H2: Non-Supported
H3: SI->BI			0.036	0.527	1,90%	0.341	[-0.038;0.112]	H3: Non-Supported
H4a: FC->BI			0.064	0.452	2,89%	0.083	[-0.006;0.137]	H4a: Non-Supported
H5: HM->BI			0.132	0.718	9,48%	0.015	[0.025;0.236]	H5: Supported
H6a: HA->BI			0.426	0.757	32,25%	0.000	[0.331;0.516]	H6a: Supported
H7: P->BI			0.074	0.372	2,75%	0.005	[0.022;0.126]	H7: Supported
Use Behavior	0.546	0.501						
H8: BI->UB			0.196	0.644	12,62%	0.000	[0.102;0.302]	H8: Supported
H4b: FC->UB			0.112	0.391	4,38%	0.000	[0.064;0.164]	H4b: Supported
H6b: HA-> UB			0.526	0.715	37,61%	0.000	[0.412;0.622]	H6b: Supported

5.4.3 Multi-Group Analysis

We carried out a multi-group analysis to verify the moderating effect of age on intention to use smartphones in-store and real behavior. For this purpose, the sample was split in two groups, millennials and non-millennials. We followed a three-step procedure to analyze the measurement invariance of composite models (MICOM). Following the proposals of Henseler, Ringle, & Sarstedt, (2016), we first checked configural invariance, then compositional invariance and, finally, we assessed the equal means and variances.

As Table 6 illustrates, partial measurement invariance for both groups was achieved for all model variables, thereby allowing multi-group comparison between groups.

Table 6. Results of the measurement invariance of composite models (MICOM) procedure

	Step1	Step 2			Step 3a				Step 3b				
		Compositional Invariance			Equal Variances				Equal Means				
Construct	**Configural Invariance**	**Original Correlation**	**5%**	**Partial Measurement Invariance Established**	**Variance-original Difference**	**2.5%**	**97.5%**	**Equal**	**Mean-original Difference**	**2.5%**	**97.5%**	**Equal**	**Measurement Invariance?**
PE	Yes	1.000	1.000	Yes	0.573	-0.130	0.121	No	-0.171	-0.112	0.111	No	Partial
EE	Yes	1.000	1.000	Yes	0.850	-0.123	0.121	No	-0.526	-0.121	0.124	No	Partial
SI	Yes	1.000	1.000	Yes	0.185	-0.128	0.120	No	-0.024	-0.133	0.133	Yes	Partial
FC	Yes	0.999	0.997	Yes	0.563	-0.127	0.117	No	-0.577	-0.173	0.168	No	Partial
HM	Yes	1.000	1.000	Yes	0.637	-0.132	0.124	No	-0.079	-0.129	0.128	Yes	Partial
HA	Yes	1.000	1.000	Yes	0.563	-0.128	0.122	No	0.319	-0.192	0.171	No	Partial
P	Yes	1.000	0.999	Yes	0.459	-0.121	0.126	No	-0.424	-0.185	0.171	No	Partial
BI	Yes	1.000	1.000	Yes	0.539	-0.126	0.119	No	0.044	-0.135	0.114	Yes	Partial
UB	Yes	1.000	0.999	Yes	0.599	-0.132	0.123	No	0.106	-0.176	0.148	Yes	Partial

We next performed two non-parametric tests, Henseler (Henseler et al., 2016) and the permutation test. These were used as both are non-parametric tests and they fit well with the non-parametric character of PLS-SEM (Sarstedt, Henseler, & Ringle, 2011).

Table 7 shows the p-values of the Henseler tests in the PH column. The last column of the table shows the p-values of the permutation test. In this test, the differences are only significant at the 5% level if the p-value is less than 0.05. We used 5000 permutations and 5000 bootstrap re-samples. The Henseler test shows significant differences between millennials and non-millennials only in the effect of price value on behavioral intention and behavioral intention and habit on use behavior. The permutation test, which is considered the best technique (Chin & Dibbern, 2010), confirms the lack of significance of the differences shown in the results, except in the case of the relationship between behavioral intention (H10c) and habit (H10b) on use behavior of smartphones in-store in an omnichannel context

Table 7. Multi-group comparison for intention to use a smartphone in-store: millennials vs. non-millennials

Relationships	**Non-millennials**	**Millennials**	**Path coefficient differences**	**P_H**	**p-value Permutation test**
H9a: PE->BI	0.275	0.254	0.021	0.635	0.748
H9b: EE->BI	-0.002	-0.045	0.043	0.792	0.477
H9c: SI->BI	0.036	0.075	0.039	0.230	0.457
H9d: FC->BI	0.064	0.087	0.023	0.328	0.678
H9e: HM->BI	0.132	0.114	0.088	0.594	0.837
H9f: HA->BI	0.426	0.514	0.088	0.085	0.186
H9g: P->BI	0.074	-0.002	0.076	0.026	0.055
H10a: FC->UB	0.112	0.052	0.060	0.087	0.135
H10b: HA->UB	0.526	0.276	0.250	0.002	0.003
H10c: BI->UB	0.196	0.442	0.246	0.002	0.006

Notes: P_H = p-value Henseler test.

5.4.4. Assessment of Predictive Validity using PLSpredict

With the objective of producing valid predictions of behavioral intention and use behavior, we used PLSpredict for the general model and the millennials and non-millennials models. We carried out the new PLSpredict technique using SmartPLS software version 3.2.7.

In general, for the simple models with minimal theoretical constraints, PLSpredict, PLSpredict allows predictions very close to those obtained by using LM (Shmueli, Ray, Velasquez Estrada, & Chatla, 2016). This study follows this approach and Felipe & Roldán (2017) to assess the predictive performance of the PLS path model for the indicators and constructs. We obtain the mean absolute error (MAE), the root mean squared error (RMSE) and the Q^2 for indicators. Moreover, we also obtained the Q^2 for the constructs Behavioral Intention and Use Behavior.

In order to assess predictive performance, we carried out the benchmark procedures developed by the SmartPLS team (Ringle et al., 2015): “The Q^2 value, which compares the prediction errors of the PLS path model against simple mean predictions. If the Q^2 value is positive, the prediction error of the PLS-SEM results is smaller than the prediction error of simply using the mean values. Accordingly, the PLS-SEM model offers an appropriate predictive performance”. As Table 8 shows, this is true both at construct and indicator levels for the general model and for the millennial and non-millennial models.

In addition, if we compare the results of PLS with LM, the differences between PLS and PLS-LM are very small (these differences are shown in the PLS-LM column of Table 8). The Q^2 differences are less than 0.06, which is an indicator of a good predictive capacity; and the differences between RMSE and MAE are around 0.1.

Table 8. PLS predict assessment

Construct Prediction Summary

	Q^2		
	Complete model	Millennials	Non-millennials
BI	0.654	0.689	0.651
UB	0.503	0.416	0.501

Indicator Predictions Summary

Complete Model

	PLS			LM			PLS-LM		
	RMSE	MAE	Q^2	RMSE	MAE	Q^2	RMSE	MAE	Q^2
BI1	1,801	1,368	0,682	1,801	1,337	0,682	0,000	0,031	0,000
BI2	1,894	1,469	0,659	1,878	1,420	0,665	0,016	0,049	-0,006
BI3	1,851	1,402	0,679	1,859	1,383	0,677	-0,008	0,019	0,002
UB1	2,111	1,640	0,466	2,013	1,515	0,515	0,098	0,125	-0,049
UB2	2,192	1,631	0,423	2,123	1,573	0,458	0,069	0,058	-0,035

UB3	2,227	1,673	0,396	2,179	1,618	0,423	0,048	0,055	-0,027
UB4	2,296	1,667	0,337	2,278	1,647	0,347	0,018	0,020	-0,010
UB5	2,761	2,349	0,292	2,679	2,193	0,334	0,082	0,156	-0,042
UB6	2,575	1,997	0,253	2,581	2,001	0,250	-0,006	-0,004	0,003
UB7	2,233	1,485	0,186	2,243	1,510	0,180	-0,010	-0,025	0,006
Millennials									
BI1	1,808	1,394	0,673	1,832	1,375	0,665	-0,024	0,019	0,008
BI2	1,873	1,473	0,641	1,897	1,445	0,632	-0,024	0,028	0,009
BI3	1,866	1,435	0,67	1,926	1,438	0,649	-0,060	-0,003	0,021
UB1	2,288	1,861	0,396	2,259	1,760	0,411	0,029	0,101	-0,015
UB2	2,345	1,892	0,372	2,316	1,836	0,387	0,029	0,056	-0,015
UB3	2,409	1,937	0,325	2,421	1,905	0,318	-0,012	0,032	0,007
UB4	2,586	2,012	0,288	2,627	2,027	0,266	-0,041	-0,015	0,022
UB5	2,964	2,532	0,156	2,942	2,412	0,168	0,022	0,120	-0,012
UB6	2,750	2,296	0,19	2,829	2,332	0,142	-0,079	-0,036	0,048

UB7	2,540	1, 879	0,143	2,624	1,958	0,086	-0,084	-0,079	0,057
Non-millennials									
BI1	1,809	1,358	0,642	1,839	1,350	0,63	-0,030	0,008	0,012
BI2	1,921	1,471	0,623	1,940	1,441	0,616	-0,019	0,030	0,007
BI3	1,860	1,398	0,647	1,881	1,396	0,639	-0,021	0,002	0,008
UB1	1,965	1,453	0,453	1,900	1,384	0,489	0,065	0,069	-0,036
UB2	2,076	1,427	0,41	2,056	1,432	0,422	0,020	-0,005	-0,012
UB3	2,089	1,475	0,408	2,075	1,472	0,416	0,014	0,003	-0,008
UB4	2,068	1,405	0,346	2,095	1,430	0,329	-0,027	-0,025	0,017
UB5	2,447	2,039	0,313	2,466	1,987	0,302	-0,019	0,052	0,011
UB6	2,436	1,761	0,253	2,476	1,778	0,228	-0,040	-0,017	0,025
UB7	2,006	1,210	0,196	2,024	1,259	0,181	-0,018	-0,049	0,015

Notes: BI: Behavioral Intention. US: Use Behavior RMSE: Root Mean Squared Error. MAE: Mean Absolute Error. PLS: Partial Least Squares Path Model. LM: Linear Model

5.5 Discussion and Conclusions

Technology is changing the way customers shop in the omnichannel era. Smartphones have become essential tools in daily life and are increasingly gaining importance for shopping in brick and mortar stores. More and more people use them to look for information and make purchases. This research explains how customers behave with regard to the in-store use of smartphones. Specifically, this study aims to analyze the key factors that influence both customers' intention to use their devices in physical stores and their actual use of those devices. It also seeks to deepen this understanding by assessing the differences between the millennial and non-millennial generations. To this end, the UTAUT2 model (Venkatesh et al., 2012) was adapted, and its specific applicability to the consumer context was confirmed by applying it to a new technology (in-store use of smartphones). Our research has theoretical implications since the results reveal that the UTAUT2 model holds good predictive power and is able to explain well the behavioral intention and use behavior of smartphones in-store for both groups, millennials and non-millennials. Although previous researchers have examined m-shopping in general, few studies have focused on the in-store use of smartphones. Specifically, this research advances the understanding of the antecedents of the use of smartphones in-store in the new omnichannel retailing context, where customers use different channels simultaneously.

The results indicate that habit, performance expectancy and hedonic motivation are the strongest predictors of in-store smartphone use for both groups (millennials and non-millennials). This is consistent with the findings of previous studies in other contexts (e.g. Aldás‑Manzano et al., 2009; Escobar-Rodriguez & Carvajal-Trujillo, 2014; Groß, 2015; Limayem et al., 2007; Venkatesh et al., 2012; Yang, 2010). On the other hand, we did not find significant differences between the groups regarding the effect of effort expectancy on the intention to use smartphones in-store. This result differs from previous studies; this has always been considered one of the variables that most explains the intention to use a new technology. This lack of empirical evidence may be due to the absence of incremental effort perception, on the part of consumers, of in-store mobile use. Both millennials and non-millennials use mobile phones in their daily lives; therefore, it should not be an additional effort to use them in the purchasing process.

Analyzing the results by group, first focusing on the millennial generation, it can be seen that price value does not influence intention to use smartphones. This may be because young people do not take into account the price of internet data, as the cost has fallen since Venkatesh's 2012 study. As can be seen in the sample, 98.4% of them access mobile data, which they assume is normal. Another explanation for this result is that the Internet is now widely available due to the introduction of wifi open access points in cities and in physical stores, and more and more of these offer free wifi. In addition, no significant differences were found regarding the effect of facilitating conditions on use behavior of smartphones in-store. This result is in line with the studies of Baptista & Oliveira, (2015) and Chopdar et al., (2018), but contrary to the findings of Venkatesh et al., (2012). The explanation for this may be that the millennial generation is accustomed to new technologies and devices and they believe that they have enough skills to use their mobile phones and don´t give importance to supporting factors.

For the non-millennial group, social influence did not play a significant role in affecting behavioral intention to use smartphones in-store during the shopping process. The insignificant impact of this construct on behavioral intention suggests that older consumers are not influenced by other people. The explanation for this may be that the use of smartphones is perceived as a private activity. This result is consistent with the studies of Hew et al., (2015) and Chopdar et al., (2018). In addition, facilitating conditions have an insignificant impact on intention to use smartphones in-store. A possible explanation for this result may be that today people habitually use mobiles in their daily lives and, therefore, they consider themselves self-sufficient in their use, including in the shopping context.

The results also confirm the influence of behavioral intention on use behavior. In other words, the greater a customer's perceived intention to use a smartphone in-store, the more likely he or she is to actually use it. This result is in line with the recent studies of Chopdar et al., (2018), Escobar-Rodríguez & Carvajal-Trujillo, (2014) and Venkatesh et al., (2012). Specifically, the proposed model explains 71.8% of the intention to use smartphones in-store by millennials and 68.5% for the non-millennial group. In addition, the R^2 for use behavior was 49.8% for millennials and 54.6% for non-millennials. The R^2 results we obtained were "weakly" lower than the variance values obtained by previous studies. For example, Chopdar et al. (2018) obtained an R^2 value for BI 0.70 and an R^2 for UB 0.59 for the adoption of mobile shopping apps in the USA and an R2 for BI 0.63

and an R^2 for UB 0.58 for India; Escobar-Rodríguez & Carvajal-Trujillo, (2014) obtained values of R^2 on BI 0.60 and R^2 or UB 0.6 for purchasing tickets online; and Venkatesh et al., (2012) obtained values of R^2 on BI 0.74 and R and UB 0.52 in the context of mobile technology.

Moreover, the model shows predictive power for the sample used in the research. This means that the model provides more information than noise and the seven drivers predict accurately the behavioral intention to use smartphones in-store and real behavior.

Regarding the moderating role of age, our results indicate that, although millennials are considered digital natives and early adopters of technological devices, there are no differences between them and non-millennials in terms of intention to use a smartphone in-store. This result is inconsistent with the findings of Bigné et al., (2005) and Yang & Forney, (2013). The only differences found between the groups are in terms of the relationship between the behavioral intention and habit constructs on use behavior of smartphones in-store in an omnichannel context.

With regard to managerial implications, clothing retailers should develop user-friendly, useful, effective and enjoyable apps and/or responsive websites to provide customers with a complete and seamless shopping experience when using their smartphones, as this research shows that consumers perceive both the utilitarian and the hedonic benefits of using their smartphones in-store. Consumers are becoming more and more accustomed to using their mobile phones in their daily lives and, therefore, retailers and managers should facilitate the use of smartphones and integrate them in their physical stores. In this way, when customers are in a store they can get all the information they need about products, inventories and the possibility of buying online to avoid queues. If all of this information is available in the retailer's app, then this will be registered and the retailers can use this huge amount of data to offer suggestions for future purchases and the personalization of products and offers. Moreover, smartphones increasingly offer the possibility of paying without using a credit card. Therefore, managers are recommended to facilitate this by providing checkouts that integrate this technology. In addition, the management of fashion retail stores with a target market over 35 years of age should bear in mind that these non-millennials are not influenced by the opinions of others (friends, family and celebrities), and we recommend that they rethink the use of the resources that they dedicate to hire influencers to publicize their products.

This paper has some limitations. Specifically, the study focuses on clothing retailers and the sample is limited to Spain. Although the sample is very complete in term of gender, age and educational level, it would be interesting, to generalize the results, to replicate the study in other sectors and countries with different levels of penetration of smartphone use in-store during the shopping process. In addition, we consider it necessary to rethink the price-value construct, because the reduction in the cost of accessing mobile data has diminished the importance of this cost. Additionally, future papers should analyze the influence of other constructs, such as security and trust, to test whether the inclusion of these variables would improve the predictive value of both behavioral intention and actual in-store smartphone use. It would also be interesting to analyze the influence of other moderating variables, such as gender and personal innovativeness.

Although the mobile phone is revolutionizing the purchasing process, the physical store is still the preferred channel to make purchases. It is important for retailers to think of the physical store not only in terms of sales generation, but also as a means of enriching the user's engagement with the consumer experience and the services that can only be offered in the physical channel. Consumers are ahead of retailers - their digitization, in all respects, occurred before the retailers. They enter physical stores, often having researched information online, with more knowledge and demands than ever before. And they expect a brand experience, ahead of the channel. As omnichannel shopping and, more specifically, m-shopping research, remain in their infancy, there are several research gaps, so further work to examine consumer acceptance models is needed.

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Chapter 6

Conclusions

6.1 Contributions and conclusions

Given the lack of academic literature about omnichannel retailing and its novelty and importance in today's retail world, this doctoral thesis sought to further understanding of the topic. The main objective was to identify how technology affects customers' purchasing behavior in an omnichannel context. To this end, four studies were conducted to contribute to the theoretical and practical development of this new research concept. The main contributions of this doctoral thesis are as follows.

- **Key drivers of technology acceptance and use in an omnichannel context**

In order to advance the theoretical understanding of the antecedents of consumer 3.0 technology acceptance and use, the UTAUT2 (Unified Technology Acceptance and Use of Technology) model was expanded to include two additional variables: personal innovativeness and perceived security. The results show that this new model predicts omnichannel purchase intention well and that consumers' intention to purchase in an omnichannel store is influenced by personal innovativeness, effort expectancy, and performance expectancy.

In light of these results, retailers should integrate new technologies into their stores to attract this type of innovative customer, i.e. early adopters who strive to be on trend. Additionally, retailers should seek to ensure coordination between their various channels. Customers find it useful when all channels are integrated and offer the same information, since it facilitates the purchasing process for them.

To this end, in-store technology should be focused on creating a new integrated customer experience, using technology that is intuitive, practical, enjoyable, and interesting in order to attract innovative customers by showing them that the new omnichannel stores facilitate and expedite their shopping journey.

- **Omnichannel shopper segmentation**

To the best of the author's knowledge, there is no literature on omnichannel customer segmentation. Previous studies segmenting multichannel customers have found five different profiles: online shoppers, reluctant multichannel shoppers, uninvolved multichannel shoppers, pure multichannel shoppers, and offline shoppers. This thesis thus contributes to the literature by segmenting omnichannel customers based on hedonic and utilitarian motivations and the social norm, identifying three kinds of omnishoppers: reluctant omnishoppers, omnichannel enthusiasts, and indifferent omnishoppers. A comparison of their profiles reveals significant sociodemographic differences, such as their omnichannel behavior or the number of channels and devices they use in the customer journey.

Accordingly, not all customers perceived the shopping task as enjoyable, nor did they all perceive the usefulness of using multiple channels during the customer journey. Business managers should thus adapt their strategies to the different profiles, offering each group of customers the channels they are most likely to use. They should pay particular attention to the profile of the omnichannel enthusiast, as this type of customer is the most profitable for retailers. These customers tend to be high-income women who like both technology and fashion. They are the group that spends the most and uses the most channels during the customer journey.

Finally, with regard to the customer journey, the study shows that the physical store continues to be the preferred place to buy clothing. All the identified segments are webroomers. Consequently, retail managers in the sector should pay attention to the store experience, as that is where most transactions take place. One way to improve this experience could be to integrate interactive in-store technology, such as virtual fitting rooms, automatic checkout, or tablets to search for more information about products.

- **The role of in-store technology in an omnichannel physical store**

This part of the thesis delves deeper into the omnichannel store concept, further contributing to the literature by identifying which in-store technologies customers want the most and what activities they would use in-store technologies for. It also identifies significant gender differences in both regards.

The proposed model was found to sufficiently predict purchase intention in an omnichannel store for both groups. The findings support and provide further evidence for the idea that consumers' purchase intentions are influenced by their intention to use different digital technologies and omnichannel practices in-store.

The research suggests that consumers expect stores to offer them technological devices in the exhibition space, facilitate the use of their own devices, and equip their fitting rooms with additional technological services. In this case, no statistically significant differences were found between men and women in the three proposed hypotheses. However, differences were found in the scores that they gave to the different uses of technology.

In-store technology in men's clothing stores should provide information on item availability, supplement the information on the range of products, and make it possible to avoid having to carry heavy bags. In addition, brands should facilitate the use of these customers' own mobile devices in their physical stores to obtain price-related advantages (e.g., to compare prices or find discount coupons).

In-store technology in women's clothing stores should allow shoppers to browse a larger assortment of products and sizes. In addition, it should make it possible for staff to give them advice without the need for the shoppers to leave the fitting room and facilitate the use of their own smartphones to compare prices and read reviews.

- **Key factors for in-store smartphone use**

This study advances the understanding of the antecedents of the in-store use of smartphones in the new omnichannel retailing context, where customers use different channels simultaneously. Smartphones have become essential tools in daily life and are become increasingly important in the purchase process in physical stores. Therefore, this study also sought to determine whether there are differences in the behaviors of two different digital generations.

The study concludes that the intention to use smartphones in-store influences both the intention to purchase and real behavior. Specifically, the findings indicate that habit, performance expectancy, and hedonic motivation are the strongest predictors of in-store smartphone use for both groups (millennials and non-millennials).

Regarding the moderating role of age, the results indicate that, although millennials are considered digital natives and early adopters of technological devices, there are no significant statistical differences between them and non-millennials in terms of the intention to use a smartphone in-store. The only statistical differences between the groups have to do with the relationship between the behavioral intention and habit construct and in-store smartphone use behavior in an omnichannel context.

In light of the importance of in-store smartphone use revealed by this study, retailers should develop useful, effective, enjoyable, user-friendly apps and/or responsive websites to provide customers with a complete and seamless shopping experience when using their smartphone in-store. That way, customers can get all the information they need about products, inventories, and the possibility of buying online from inside the store itself to avoid queues. At the same time, retailers would have the chance to record all this information and tailor their offers to individual customers.

6.2 Theoretical and managerial implications

This study makes several theoretical contributions to the literature. First, this thesis has proved that the UTAUT2 model has good predictive power. It is able to predict omnichannel purchase intention, and it explains behavioral intention and in-store smartphone use behavior for both millennials and non-millennials well. The theoretical contribution of this thesis is to have expanded the model to two contexts and tested it with new variables to explain shopping behavior. These findings have implications for the management of today’s new connected customers.

Additionally, it identifies different omnishopper segments, thereby confirming that they are not a homogenous group, and offers insight into the different motivational patterns shaping the customer journey.

Finally, it contributes to the literature on omnichannel retailing by identifying which technologies and omnichannel practices are the most important for shoppers in the shopping process and how the intention to use in-store technology affects purchase intention.

Regarding the managerial implications, in this new omnichannel scenario, retailers should adapt their retailing to their customers' demands. To this end, they should focus on two main aspects: 1) creating a holistic customer experience that leads to loyalty; and 2) making an effective technology investment.

- **Creating a holistic customer experience that leads to loyalty**

Companies must learn to build a shopping experience for customers and to store data on it. Not all customers expect the same experience from their shopping journey; there are three different shopper profiles with different behaviors and needs in their customer journey. Therefore, retailers must not limit themselves to one-size-fits-all customer relationship management. As a result of the many channels used today (social media, physical store, and mobile applications), companies have a lot of customer data. They should harness these data to customize and ensure the consistency of each customer relationship. Retailers have to know what the customer's shopping experience is like in order to manage, analyze, and optimize it. That, in turn, requires total integration of the channels. Customers want to engage with the brand; they do not care which channel they use, but they want a seamless experience. In other words, they want to be able to buy a product in the online shop, pick it up at a physical store, notify the retailer via their favorite social media platform that in the end they would rather have it shipped to their home, and be able to return it to a physical store because they would prefer a different color and have determined through the mobile application which stores have it in their size. And they want to do all of this effortlessly, without having to start the purchase process over again each time they switch platforms. For all these reasons, companies need to know who their customers are and what they want, and they should use this information to build a customer experience that leads to loyalty. Integrating the in-store, mobile, social, and web customer data into a single intelligent business system able to identify the best offers and deliver a custom, one-to-one experience should be the ultimate goal.

- **Making an effective technology investment**

Regarding the introduction of new technologies, companies should identify the right combination of technologies for their industry. Effectively maximizing the benefits of the omnichannel strategy requires embracing mobile technology, unifying pricing and product information, and integrating supply chain and data management. In-store technology is essential to deliver a superior shopping experience, and its acceptance and use depends on customer innovativeness, ease of use, and usefulness. Moreover, customers would use in-store technology to look for an item or size not available at the store, avoid carrying heavy bags, get discounts, or look for clothes to complement their outfits.

Stores should support their customers' desire for connectivity throughout the customer journey, especially the in-store use of smartphones to make shopping easier. In addition, the role of store staff may need to change. Although staff certainly need to be able to help shoppers use these in-store technologies, they also need to act as advisors and curators for shoppers, for instance, by offering them feedback on how they look in specific items and providing them with different options.

6.3 Limitations and future research lines

Several important limitations in these studies point to future lines of research. The first three studies deal with consumer behavior in a particular case: the purchasing process in the clothing retailer Zara. It would be interesting to replicate the studies with a luxury brand or in another product category and compare the results to gather more generalizable customer responses.

A further limitation stems from the fact that the information is limited to Spain. Future research could validate these studies in other countries in which technology is integrated into the shopping process differently or that have different sociodemographic environments.

Additionally, future studies could supplement the current models, adding the moderating effects of other sociodemographic and contextual variables, such as age, sex, educational level, product engagement, or personal innovativeness.