Université de Lille
LEM - Lille Économie Management (UMR 9221)
École Doctorale SÉSAM

Seamless Shopping in Omnichannel Retailing: The effect of Channel Integration on Consumers' Responses

Le parcours d'achat sans couture dans le commerce de détail omni-canal : L'effet de l'intégration des canaux sur les réponses des clients

Thèse en vue de l'obtention du titre du docteur en sciences économiques

Helen Cocco

June 17th 2020

Sous la direction de Prof. Dr. Nathalie Demoulin

Members of the Jury:

Director of Thesis :
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Résumé Général

L'évolution des comportements d'achat des consommateurs oblige les commerçants à offrir des expériences sans couture. Les consommateurs disposent maintenant d'une multitude de canaux d'achat qu'ils utilisent souvent simultanément tout au long des phases de recherche, d'achat et d'après-vente de l'expérience d'achat. Avec l'évolution des technologies mobiles qui favorise l'achat sur de multiples canaux, les consommateurs attendent désormais une expérience d'achat sans couture. Pour les commerçants, ces attentes représentent souvent des défis technologiques et opérationnels, dans la mesure où diverses complications peuvent apparaître lorsqu'il s'agit de relier des canaux, des terminaux et des points de contact avec la clientèle. Un manque d'intégration des canaux peut provoquer des interruptions et des désagréments, alors que des canaux bien intégrés génèrent des parcours d'achat cohérents, continus et ininterrompus qui favorisent un comportement positif des consommateurs. Ces défis ont conduit de nombreux commerçants à développer des stratégies omni-canaux, qui se concentrent sur la création d'expériences clients sans couture. Les sociétés rivalisent maintenant pour améliorer l'expérience client et, par conséquent, offrir un parcours d'achat sans couture n'a jamais été aussi pertinent.

Cette thèse apporte une contribution au domaine émergent de la recherche sur l'expérience client en permettant de mieux comprendre comment et dans quelles conditions les consommateurs vivent une expérience d'achat fluide et sans friction. Premièrement, une conceptualisation du parcours d'achat sans couture apporte une clarté indispensable dans le cadre de la recherche et de la pratique, permet une utilisation plus précise et soutient la poursuite du développement théorique. Bien que la recherche existante montre l'importance du parcours d'achat sans couture en marketing, on ne sait pas vraiment ce que recouvre ce terme. Deuxièmement, sur la base de cette conceptualisation, une échelle de mesure

comportant 7 items est établie pour faciliter sa mise en œuvre à la fois dans la littérature et dans la pratique. L'association de la conceptualisation et de l'établissement d'une échelle élargit la portée du concept et apporte une plus grande clarté. Troisièmement, au niveau théorique, nous développons un cadre qui fait le lien entre le parcours d'achat sans couture et les concepts de marketing reconnus. Cela répond à la demande accrue en matière de recherche sur les moteurs du parcours d'achat sans couture en définissant l'intégration des canaux comme moyen de créer un parcours d'achat sans couture. Le cadre élargit également la recherche en prévoyant plusieurs conséquences bénéfiques de l'achat sans couture. Ce cadre conceptuel est examiné de façon empirique dans l'environnement de commerce de détail d'un second pays, ce qui renforce l'impact de cette recherche dans un contexte international. Enfin, cette étude s'appuie sur des recherches antérieures en examinant les caractéristiques psychographiques des clients qui ont un impact sur la relation entre l'intégration des canaux et le parcours d'achat sans couture. Les résultats identifient les domaines où les commerçants devraient consacrer plus de temps et d'efforts aux initiatives d'intégration des canaux pour parvenir à des achats sans couture.

Cette thèse jette un éclairage précieux sur le parcours d'achat sans couture dans le commerce de détail omni-canal et les résultats apportent des renseignements précieux, sur le plan universitaire et pratique, dans le domaine de l'expérience client.

Mots clés : parcours d'achat sans couture, commerce de détail omni-canal, harmonisation des valeurs, parcours d'achat ininterrompu, construction d'une échelle

General Abstract

Changing consumer shopping behaviours are challenging retailers to deliver seamless experiences. Consumers now have a plethora of available shopping channels that they use, often simultaneously throughout the search, purchase and post-purchase phases of the shopping experience. With the evolution of mobile technology advancing multiple channel shopping, consumers now expect seamless shopping. For retailers, these expectations often represent technological and operational challenges, where several complications can exist in linking channels, devices and touchpoints. A lack of channel integration can cause disruption and inconvenience, whereas well-integrated channels lead to consistent, continuous and uninterrupted shopping journeys that promote desirable consumer behavioural outcomes. These challenges have led many retailers to develop omnichannel strategies, which focus on creating seamless customer experiences. Companies now compete on customer experience and therefore, offering seamless shopping has never been so pertinent.

This dissertation contributes to the emerging field of customer experience research by providing insightful understanding into what, how and under what conditions, consumers experience seamless shopping. Firstly, a conceptualization of seamless shopping provides much-needed clarity for research and practice, ensures more accurate usage and supports further theoretical development. Although existing research indicates the importance of seamless shopping in marketing, there is little knowledge about what the term is comprised of, and its constituent parts. Secondly, based on this conceptualization, a 7-item measurement scale is established to aid its implementation both in literature and in practice. The partnering of conceptualization and scale development broadens the concept's scope and adoption in practice. Thirdly, on a theoretical level, we develop a framework that links seamless shopping with established marketing constructs. This answers calls for more research on drivers of

consumers' seamless purchases by establishing channel integration as a means to creating seamless shopping. The framework also extends the research by predicting several beneficial consequences of seamless shopping. This conceptual framework is empirically examine in a second country retail environment, which strengthens the impact of this research in an international context. Finally, this study builds on previous research by examining customer psychographic characteristics that impact the channel integration-seamless shopping relationship. Results identify where retailers should allocate more time and effort into channel integration activities to achieve seamless shopping, and the corresponding desirable outcomes.

This dissertation places a valuable lens on seamless shopping in omnichannel retailing and the findings provide valuable academic and practical insights in the customer experience field.

Keywords: seamless shopping, omnichannel retailing, value harmonisation, uninterrupted shopping journey, scale development

Table of Contents

CHAPTER 1: INTRODUCTION

1.1 Seamless Shopping

In recent decades, retailers have shifted from multichannel to omnichannel strategies, where the goal is often to create seamless customer shopping experiences (Grewal et al. 2016 ; Kumar 2018). Customers now interact with retailers over several channels, channel boundaries have become blurred and customers view the retailer as one brand, irrelevant of the channel on which they are shopping (Smith and Wheeler 2002). Several retailers have used this knowledge to inform their strategic focus, better serve their customers, and remain competitive in a crowded retail market. U.S retailer, *Walmart*, has invested billions of dollars globally to improve the seamless shopping experience (McMillon 2016 ; Walmart 2016). Another large U.S. retailer, Nordstrom, state that they owe much of their success in providing a seamless experience (Nordstrom Inc 2018). Nordstrom has reinvented its brand by focusing on technology, infrastructure and omnichannel retailing to meet consumer requirements of a seamless experience.

Despite persistent consumer demands of seamless shopping, development of this topic in literature is relatively in its infancy. There is a growing body of research discussing seamless shopping, where it is suggested to be an optimum experience (Grewal et al. 2016 ; Kumar 2018 ; Lemon and Verhoef 2016 ; Steinhoff et al. 2018). Indeed, the construct is often referred to in marketing research as an aspiration of many omnichannel retailers (Kumar et al. 2019 ; Piotrowicz and Cuthbertson 2014 ; Taylor and Levin 2014). Literature has suggested several benefits of focusing on seamless shopping. Firstly, it allows retailers to respond to current expectations, where consumers want to seamlessly traverse several channels as they shop (Piotrowicz and Cuthbertson 2014). Meeting these expectations strengthens the customer experience; customers who perceive seamless shopping are likely to be more engaged, satisfied and loyal (Seybold et al. 2001 ; Shankar et al. 2011), which better enables

retailers to compete (Lemon and Verhoef 2016). Although the advantages are comprehensive, it was found that out of 87% of retailers who adopt omnichannel strategies that promote seamless shopping, only 8% believe that they have achieved it (Brightpearl and Merchant 2017). In addition, omnichannel retailers have been challenged by the fast pace of change from multichannel to omnichannel, and increasingly compete with sophisticated online-only retailers (Verhoef et al. 2015). I believe that failures to achieve seamless shopping are because of three reasons. Firstly, there is little support in the literature concerning the customer-centric position of seamless shopping (Frow and Payne 2007). Secondly, the driver of seamless shopping is channel integration, which is complex and requires knowledge, skills, and investment (Sousa and Voss 2006 ; Zhang et al. 2010). Thirdly, there is little empirical research that identifies the practical implications of seamless shopping, to support implementation.

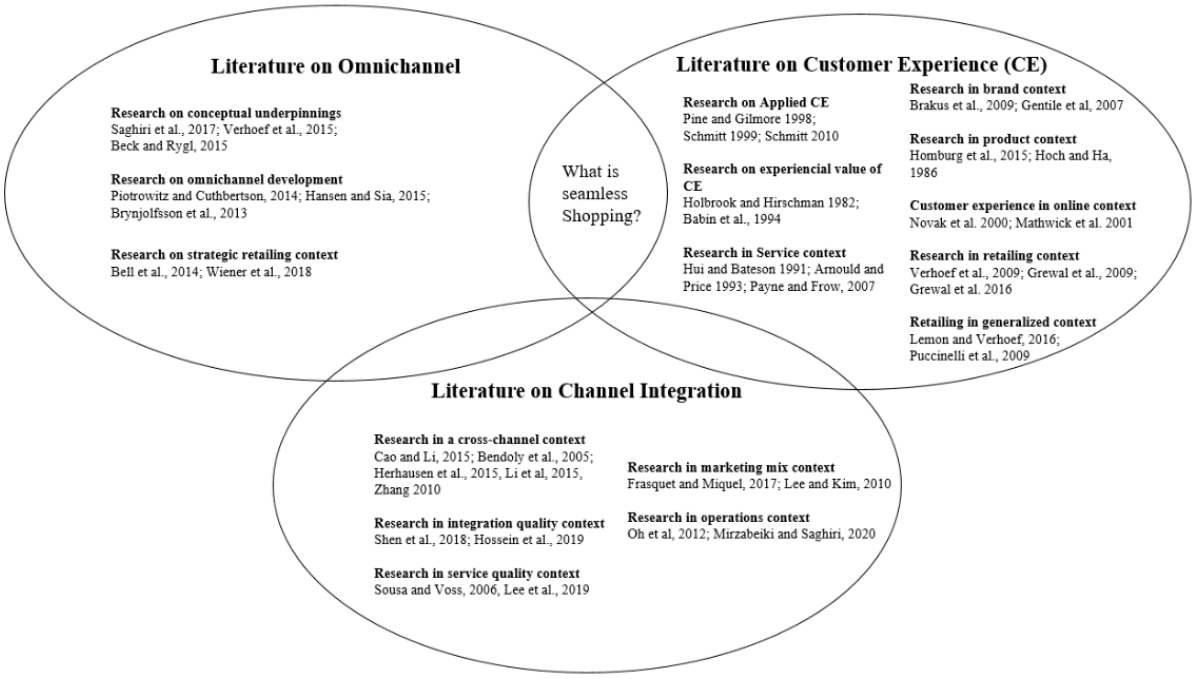
Seamless shopping is deemed such a relevant topic that leading experts consider omnichannel strategies that promote seamless purchases to be an important research priority (Marketing Science Institute 2018). To respond to these calls, this dissertation firstly conceptualizes seamless shopping in the omnichannel retailing environment (chapter 2). To support the conceptualization, we develop a scale to measure it (chapter 2). Thereafter, we establish a framework of empirical research to support business practice and advance the theory (chapters 3 and 4).

1.2 Seamless Shopping in Context

Seamless customer shopping relies on retailers to orchestrate the customer journey by integrating channels. The contexts under which channels operate have contributed various

approaches to channel and customer management. Consequently, seamless shopping has emerged in various contexts and across several research fields.

Figure 1: Main Literature pointing to Seamless Shopping context and Corresponding Research Gap



As figure 1 demonstrates, the literature on seamless shopping is fragmented across three research fields; omnichannel retailing, channel integration, and customer experience literature. Although several scholars discuss seamless shopping, the scientific literature on the topic remains sparse (See Fig 1). Customer experience literature has suggested that optimised experiences are smooth and seamless over channels (Frow and Payne 2007 ; Lemon and Verhoef 2016 ; Neslin et al. 2006), whilst omnichannel literature cite that seamless experiences are the goal of multiple channel strategies (Grewal et al. 2016 ; Kumar 2018). Both these literature fields point firmly in the direction of channel integration literature, which is a substantial construct that has evolved in various retailing contexts over the past two decades.

Since the origin of online shopping, channel operations and processes have been subjected to various channel management strategies (Neslin et al. 2006 ; Verhoef et al. 2015 ; Verhoef et al. 2007). As shopping in the traditional store has combined with online shopping, retailing strategies have emerged to keep up with the pace of technology and changing customer behaviours over time. Three distinct retailer strategies and approaches to channel integration exist in the literature; multichannel, cross-channel, and omnichannel. Although there is some crossover between strategies, there are distinct differences between them. Multichannel is usually referred to as retailers having presence in all channels (Li et al. 2018) and channels managed independently of each other with little interaction (Balasubramanian et al. 2005 ; Venkatesan et al. 2007 ; Verhoef et al. 2007). The purpose of multichannel is to increase the value proposition to the customer by reaching a wider range of customers and fulfilling their needs (Saghiri et al. 2017). Cross-channel is proposed as partial integration of sales and merchandising across channels, where more than one channel is managed harmoniously with another, but not all channels (Beck and Rygl 2015). The purpose of cross-channel is to join offline and online channels (Beck and Rygl 2015). In contrast, omnichannel takes a unified approach towards streamlining processes, managing interactions, and optimising channel integration to create synergies between them (Piotrowicz and Cuthbertson 2014 ; Verhoef et al. 2015). The purpose is not only to connect channels and touchpoints but to optimise them (Shen et al. 2018).

Multichannel, cross-channel, and omnichannel can be largely distinguished by their inherent objectives and goals, which are driven by consumer behaviours towards shopping. As table 1 shows, the objectives of all strategies always concern the customer but specify different purposes for integrating channels. For example, the focus of multichannel is to enhance the value proposition whereas omnichannel presents a unified customer experience-centric focus where all channels are perceived as one brand during the customer journey

Table 1: Differences between Multi, Cross and Omnichannel Retailing

	Multichannel	**Cross-channel**	**Omnichannel**
Definition	Retailer presence in all channels (Li et al. 2018) and channels managed independently of each other with little interaction (Balasubramanian et al. 2005 ; Venkatesan et al. 2007 ; Verhoef et al. 2007)	Partial integration of sales and merchandising across channels, where more than one channel is managed harmoniously but not all channels (Beck and Rygl 2015 ; Brynjolfsson et al. 2013)	Streamlining processes and interactions to integrate and create synergies between all channels and touchpoints (Shen et al. 2018 ; Verhoef et al. 2015)
Channel integration	No integration	Partial	Full
Focus	Channel development (IT, infrastructure)	Cross-channel integration of at least one process (e.g. supply chain, logistics, operations, marketing etc)	Customer-centric
Channel Management	Channels operate separately with no overlap. Objectives are per channel	Some channel overlap. Objectives are to connect certain channels.	Channels operate in unison. Objectives are across channels
Channel Scope	Store (offline), online website, catalogue	Online and offline (store)	All channels and touchpoints, including store, online website, mobile application, mobile website, social media, and tablet.
Customer Channel Usage	The customer interacts often with a single channel	The customer interacts with more than one channel	The customer interacts with several channels and touchpoints
Customer Perception	Increased value proposition as more channels available to use.	The customer journey can be completed over more than one channel	All channels are viewed as one brand
Consumer behaviour towards channels	Search and purchase often take place on the same channel.	Search and purchase can take place on different channels	Customers switch simultaneously between channels
Objective	To increase the value proposition for customers	Integrated channels and services for customers	Optimising channel integration to create a seamless experience

Sources: Beck and Rygl (2015); Saghiri et al. (2017); Shen et al. (2018); (Verhoef et al. 2015)

(Hakanen and Jaakkola 2012 ; Homburg et al. 2017). Importantly, the level of channel integration determines the approach towards meeting consumer expectations, from no

specified integration in multichannel retailing[1], to partial integration in cross-channel retailing, and full integration of omnichannel retailing (Beck and Rygl 2015). When an attempt is made to fully integrate channels to optimize performance (i.e. by creating synergies), seamless shopping can be created. Therefore, this research takes an omnichannel perspective towards channel integration, which is defined as "the degree to which a firm coordinates the objectives, design, and deployment of its channels to create synergies for the firm and offer particular benefits to its consumers" (Cao and Li 2015, p.200). Channel integration is an extensive topic, involving several firm processes such as logistics (eg. shipping, delivery), IT planning and data (CRM, analytics), supply chain, customer service and communications (Cao and Li 2015 ; Heckmann et al. 2012 ; Oh et al. 2012 ; Saghiri et al. 2017). Thus, channel integration is a retailer controlled firm set of activities (Beck and Rygl 2015). In contrast, seamless shopping is an internal customer response (Lemon and Verhoef 2016). It is the objective of omnichannel retailing and cannot be perceived without channel integration. Therefore, this dissertation attempts to cross various literature streams to meet its objectives.

In the next section, we discuss the research objectives and research questions. Subsequent sections discuss the contributions and findings, and lastly, we provide an outline of the research.

1.3 Research Objectives and Research Questions

Customers now switch between several channels during their customer experience and seek consistent and continuous seamless experiences along the customer journey. As so many

[1] However, it is acknowledged that there is wide disagreement in the understanding of multichannel in the literature regarding the degree to which channels are integrated from no integration to integration (Neslin et al. 2006; Zhang et al. 2010).

firms strive to achieve seamless customer experience in their omnichannel strategies yet few believe that they are achieving it, we seek to enhance the literature in the customer experience field. The purpose of this dissertation is to conceptualize consumer perceived seamless shopping, develop an accompanying measurement scale, and empirically examine the construct within a conceptual framework. This section explains the research objectives and lists the research questions for each chapter.

Chapter 2: Seamless Shopping: Concept, Measurement, and Consequences

RQ1: What is seamless shopping?

RQ2: How can it be measured?

RQ3: What are the predicted consequences of seamless shopping?

Whilst consumer demand for seamless shopping has been continuously stated in the literature (Flavián et al. 2019 ; Kumar 2018 ; Payne and Frow 2005 ; Verhoef et al. 2015) and businesses aim to accomplish their seamless goals in practice, scant research attention has been devoted to the topic. The lack of conceptual foundation limits recognition of this important topic, restricts solid empirical advancement and hinders the ability to successfully manage it. Moreover, there is a lack of cohesive understanding of seamlessness in the literature, reflected in accompanying references to integration, flow, and engagement of interactions (Hansen and Sia 2015 ; Schmitt 2010 ; Steinhoff et al. 2018). Thus, exploring the conceptual underpinnings will stimulate much needed further theoretical advancement within the customer experience field (Lemon and Verhoef 2016).

We develop a complimentary scale to assist retailers in reaching their seamless experience objectives. Marketers are constantly required to evidence the impact of their function against business objectives; therefore, this scale provides an essential tool for measuring the effectiveness of omnichannel strategies. In research, the internal responses

resulting from online customer experience (Novak et al. 2000 ; Rose et al. 2012), brand experience (Brakus et al. 2009) and service experience (Klaus and Maklan 2012) are well established, however, they are not appropriate for measuring seamless transitions over multiple channels in the omnichannel context. The scale is developed using established procedures (Churchill 1979 ; DeVellis 2012), adding to its rigor, and compliments the conceptualization by providing a measurement tool to strengthen implementation in practice. We draw on customer experience theory to establish a nomological network and predict relevant marketing outcomes.

Chapter 3: The antecedents and Consequences of Seamless Shopping

RQ4: What antecedents affect the customer perception of seamless shopping?

RQ5: What are the outcomes that result from seamless shopping?

RQ6: Does customer perceived seamless shopping mediate the relationship between firm based channel integration and consumer behavioural outcomes?

Following the previous chapter's exploration of the construct, this chapter extends the theoretical foundations by building a framework surrounding seamless shopping. Whilst previous studies have identified that firm-based channel integration affects seamless shopping perceptions (Bendoly et al. 2005 ; Cao and Li 2015), little empirical work has been carried out to identify this relationship. Consequently, the connection between firm-channel integration and corresponding customer perceived seamless shopping has traditionally been conceptually indistinct (Bendoly et al. 2005 ; Frasquet et al. 2017). By clarifying this relationship, we provide additional insights to the customer experience literature and enhance knowledge for omnichannel retailers.

Similarly, the customer experience literature has signalled that seamless shopping is a precursor to achieving customer engagement (Kumar et al. 2019), loyalty (Seybold et al.

2001), and brand switching (Wallace et al. 2004). Though many retailers are committed to providing seamless experiences to avoid customers going elsewhere, there is also little empirical evidence that achieving seamless shopping actually leads to desirable benefits for retailers. Given these substantial consequences, consumer behaviour following seamless shopping deserves attention. By investigating seamless shopping as a mediator in this framework, we find evidence for causal relationships that should be considered to reach key desirable outcomes.

Chapter 4: Examining the Effects of Consumer Characteristics on Seamless Shopping; A Multilevel Analysis.

RQ7: What role do consumer psychographic traits play in the seamless shopping framework?

RQ8: Does multichannel ability, loyalty proneness, time pressure, price consciousness and product involvement influence the relationship between firm based channel integration and customer perceived seamless shopping?

Chapter 4 extends the previous chapter findings by examining five psychographic variables (price consciousness, time pressure, loyalty proneness, multichannel ability, and product involvement) that influence the relationship between firm based channel integration and customer perceived seamless shopping. As channel boundaries become blurred and customers switch channels simultaneously, psychographic traits influence consumer decisions affecting the whole customer journey. Previous studies have found that consumer psychographics of price consciousness, time pressure, and loyalty proneness affect consumer behaviours across channels (De Keyser et al. 2015 ; Konuş et al. 2008 ; Sands et al. 2016). Loyalty-prone customers are more likely to shop over multiple channels (Nakano and Kondo 2018), time-pressured shoppers were more likely to use one channel, and price-conscious consumers prefer online channels (Konuş et al. 2008). Understanding how these

characteristics affect seamless shopping will improve retailer knowledge of consumer shopping in omnichannel and assist them in developing their strategies accordingly.

Beyond traditional and established psychographic traits, we also test multichannel ability. Digitalisation of shopping is likely to affect the consumer approach towards channels. Omnichannel retailers are increasingly competing with strong online retailers and marketplaces (e.g. Amazon, Zalando), who have highly sophisticated skills, tools, and data-driven analytics for tracking and personalisation. Online-only retailers have developed significant expertise in digital channels, implementing technological tools that create flow and enhanced interactions along the customer journey (Brynjolfsson et al. 2013). Furthermore, new digital tools such as augmented reality are becoming increasingly common in the customer experience. As different channels require different skills and varying abilities, omnichannel shopping journeys may contain several different technologies in one shopping journey. Understanding multichannel ability will support researcher and marketer knowledge of the impacts that current customer technology perception is having on the firm-channel integration-seamless shopping relationship.

Lastly, segmentation studies have found that product involvement affects consumer choice of channels, touchpoints, and customer journey preferences (De Keyser et al. 2015 ; Herhausen et al. 2019 ; Konuş et al. 2008). Low-involvement consumers spend less time on shopping and are more likely to switch to alternatives, whereas high-involvement consumers spend longer during the search phase of shopping (Konuş et al. 2008). Understanding the impact of involvement will shed new knowledge on channel switching behaviours that affect the firm-channel integration-seamless shopping relationship. We discuss how omnichannel retailers selling high and low involvement products can adapt their approach to channel integration, to achieve seamless shopping.

1.4 Contributions

Each chapter contributes to research literature and practice in several ways. Although much literature has mentioned seamless experience due to its growing importance in practice, few signal conceptual underpinnings, and scarce empirical research exists. As online retailers progressively dominate retail industry sales, many traditional omnichannel retailers are struggling to keep up (Verhoef et al. 2015). Consequently, delivering seamless shopping is of pivotal importance for omnichannel retailers to persevere in a competitive industry. Therefore, the overall contribution to this research is to advance knowledge in the area of seamless shopping, to assist retailers in achieving omnichannel retailing.

Chapter 2 establishes the concept of seamless shopping and develops an accompanying scale to measure it. Although the goal of omnichannel retailing is often to create a seamless experience, research in this area is sparse. By conceptualising seamless shopping, this develops a firm base on which to build further research. Secondly, responding to calls for better customer experience measures (Lemon and Verhoef 2016), this study produces a reliable and valid scale that predicts established outcomes in the marketing field. Since measures in practice are lacking, this newly developed seamless shopping scale offers a useful measurement tool to assist retail practitioners in measuring performance of omnichannel strategic goals. Lastly, by empirically investigating the outcomes of seamless shopping scale, we show how the scale links to other established constructs in the literature.

Chapter 3 establishes seamless shopping within a mediating framework based on servicescape theory (Bitner 1992). In this chapter, we join channel integration, seamless shopping (chapter 2) and customer behavioural research to better understand the omnichannel

retailing chain of events. Since retailers are considerably committed to investing in omnichannel integration activities to remain competitive (Cao and Li 2015 ; Li et al. 2018), ruptures in during the experience could be quite costly, whilst seamless shopping could be advantageous. By investigating the outcomes of seamless shopping, this knowledge enhances much-needed research on the importance of omnichannel strategy, reinforces retailer commitments for achieving seamless shopping and provides evidence to support investment proposals. Secondly, we empirically investigate firm-channel integration's causal effect on seamless shopping. Since retailers are struggling to achieve seamless experiences, a better understanding of this relationship provides valuable insights for managers implementing omnichannel strategy whilst alleviating confusion in the literature regarding channel integration quality. Lastly, this chapter adapts and updates previous channel integration measurement tools into the omnichannel retailing context, by adding important developments in mobile shopping and acknowledging the full scope of channels and touchpoints available. This extends on previous channel integration literature and pinpoints where retailers should concentrate their efforts to achieve seamless shopping.

In chapter 4, we investigate the psychographic conditions that affect the channel integration – seamless shopping relationship. Previous studies identify consumer characteristics of multiple channel shopping for the purpose of general segmentation. However, few studies have examined these characteristics on strategic outcomes (Herhausen et al. 2019) Our findings contrast with previous segmentation research by focussing on the impact of customer characteristics when simultaneously switching between channels during each shopping stage. For example, previous studies consider one channel for search, one channel for purchase and another for aftersales, whereas we found that customers use several channels for the search, several channels to check availability, and so on. Simultaneously, we

investigate these conditions across several retailers using a multilevel design. In doing so, we enhance market understanding by generalising results across the retail market. These impacts strengthen the theory, whilst responding to calls for further research regarding the creation of seamless purchases (Marketing Science Institute 2018). Lastly, we extend the chapter 2 findings, by testing the moderating variables within the framework including the outcome variables; loyalty, customer engagement, brand switching, and basket size. This contributes further knowledge to this important research topic and enhances knowledge for practitioners.

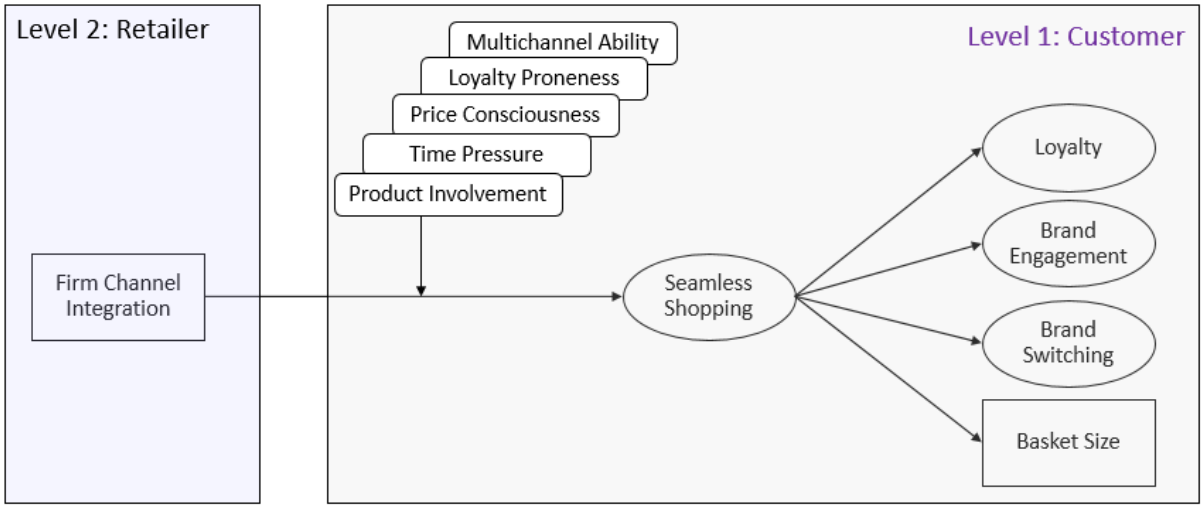
1.5 Outline of the dissertation

This doctoral dissertation contains three connected studies, which contribute to a better understanding of seamless shopping in the customer experience field. Throughout, we examine seamless shopping from the customer perspective. This is important since omnichannel retailing places customers at the centre of their strategy (Melero et al. 2016). Moreover, drawing on the customer perception allows us to identify strong generalised consumer traits, which can benefit many retailers. In chapters 3 and 4, we distinguish the roles of both firm-channel integration and customer perceived seamless shopping, by including observational data of retailers and applying a multilevel analysis. Studying both the customer and retailer perspective provides a more dynamic approach, a deeper-rooted theoretical perspective, and strengthens research and managerial implications, to advance knowledge in this field Figure 1.1 shows the overarching framework of antecedents, outcomes, and moderating variables tested in the two-level design.

In chapter two, we introduce the concept of seamless shopping by first drawing upon literature to provide a theoretically grounded conceptualization. Since customers now expect

seamless shopping (Piotrowicz and Cuthbertson 2014), this conceptualization provides a theoretical base to advance the research. To complement the conceptualization, we develop a reliable and valid two-dimensional scale, which we test in two distinct populations. Using data from four separate studies, we show how the scale demonstrates internal consistency, reliability, construct validity, and nomological validity. We then test the scale on predicted outcomes.

Figure 1.1: Seamless Shopping Conceptual Framework



In chapter three, we subject this newly conceptualized and empirically tested construct within a framework. This study establishes the seamless construct as a mediator in a framework that investigates firm antecedents of channel integration and several consumer behavioural consequences. Establishing a firm-based antecedent determines the retailer inputs required to create seamless shopping. Although the two-dimensional scale was found to predict traditional consumer behaviours in marketing (in chapter two), connecting seamless shopping with more modern outcomes that are desirable to current-day marketers, emphasizes the scale's purpose and relevance in both research and practice.

Chapter four uncovers the consumer psychographic characteristics that we test on the relationship between firm-channel integration and customer perceived shopping. Using a multilevel modelling approach containing both retailers and customers in the UK retailing sector, we show how multichannel ability, loyalty-proneness, and product involvement impact this relationship. As seamless shopping is a relatively new area of study, understanding these impacts reinforce the consumer conditions that managers should consider. This supports the creation of realistic objectives and goals within retailer omnichannel strategy.

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CHAPTER 2: Seamless Shopping: Concept, Measurement and Consequences

2.1 Abstract

Understanding changing consumer behaviours of shopping across channels is pivotal for retailers to be able to adapt to the new omnichannel retailing context. Consumers now expect a seamless shopping experience where they can use channels simultaneously throughout the shopping journey. Yet little is known about seamless shopping and how it can be measured. This article introduces the concept of seamless shopping in the omnichannel environment as the customer perception of a continuous and consistent shopping journey across multiple integrated channels with a single retailer. In four studies over two populations (U.S. and UK consumers), this paper develops a scale comprising of two dimensions; value harmonization and uninterrupted shopping journey. The scale demonstrates internal consistency, reliability, construct validity and nomological validity. This study also shows that seamless shopping is a good predictor of shopping value, satisfaction, and loyalty. Managerial recommendations and avenues for future research are presented.

Keywords: Seamless shopping, scale development, value harmonization, uninterrupted shopping journey, omnichannel retailing

2.2 Introduction

Omnichannel consumers now expect channels to be connected so that they can seamlessly switch from one channel to another (Bell et al. 2014). In response to consumer expectations, 91% of leading global retailers focus their omnichannel strategies on achieving seamless shopping experience (Brightpearl and Merchant 2017). Many retailers, such as Walmart and Nordstrom, state that seamless experience is critical to the success of their

omnichannel strategies (Nordstrom Inc 2018 ; Walmart 2019). Despite its importance in practice, few retailers are achieving seamless omnichannel shopping experiences. Although 87% of retailers believe that omnichannel strategy is critical to their success, only 8% believe that they have achieved it (Brightpearl and Merchant 2017). Evidence suggests that there are disagreement and confusion about the meaning of seamless shopping in omnichannel strategy (Brightpearl and Merchant 2017). This is likely due to the large shift in customer focus required in the move from multichannel to omnichannel and a lack of conceptualization in this field (Brynjolfsson et al. 2013 ; Verhoef et al. 2015). Since many companies emphasize seamless shopping experience as the goal of their omnichannel strategies to meet modern-day consumer demands yet are failing to meet these aims, there is a pressing need for more research on seamless customer shopping journeys (Dennis and Franson 2018). Motivated by its managerial relevance and customer requirements, we aim to enhance understanding by conceptualizing seamless shopping within the customer experience, providing a tool to measure it, and predicting desirable outcomes.

Despite the challenges in providing a seamless shopping in practice, development of this topic holds great potential for stimulating theoretical advancement. Seamlessness is beginning to gain traction in the literature (Flavián et al. 2019 ; Kumar 2018 ; Lemon and Verhoef 2016 ; Payne and Frow 2005). Payne and Frow (2005) considered company strategy approaches to providing seamless customer experience, through integrating IT planning in customer relationship management initiatives. Lemon and Verhoef (2016) suggested that seamless experiences create stronger customer experiences through improved interactions and synergies between channels. Kumar (2018) identified the seamless interplay between channels and brands required in omnichannel, to meet modern-day customer requirements and personalize customer journeys. More recently, Flavián et al. (2019) discussed how technology, such as virtual reality, could be integrated into seamless customer experiences.

Whilst the broader idea of seamlessness has been established from a strategic perspective, conceptual development from the customer perspective remains scant (Verhoef et al. 2015) and seamless shopping is yet to be theoretically defined.

Furthermore, the ability to measure and monitor reactions to firm offerings is essential for firms to understand and manage customer experience (Lemon and Verhoef 2016). The internal responses resulting from online customer experience (Novak et al. 2000 ; Rose et al. 2012), brand experience (Brakus et al. 2009) and service experience (Klaus and Maklan 2012) have been empirically tested, however, they are not appropriate for measuring the experience of seamless shopping over multiple channels in the omnichannel context. Consequently, research has called for more robust customer experience measures (Lemon and Verhoef 2016) established using rigorous scale development procedures. Whilst ad-hoc integration scales focus on operational integration between internet and store channels only, at the purchase stage of shopping (Bendoly et al. 2005 ; Lee and Kim 2010), they fail to capture the perceived experience of seamless shopping over various channels, devices, and touchpoints that is commonplace nowadays in the omnichannel environment. Prior literature suggests that a more reliable and valid measurement scale is required to capture customer perception of seamlessness in the shopping experience. Indeed, seamless experience across channels may improve customer-firm relationships (Payne and Frow 2004). Highly integrated channel retailers achieve higher sales growth than their less integrated competitors (Cao and Li 2015) whilst seamless experiences across channels may create stronger customer experiences (Brynjolfsson et al. 2013). Consequently, seamless shopping may result in desirable consumer behaviours. For instance, cross-channel failures in multichannel retailing lead to lower satisfaction, which prompts customers to switch to another retailer (Wallace et al. 2004).

This paper makes several contributions. Firstly, we carry out an extensive literature review to develop a new conceptualization of seamless shopping in the marketing domain,

which provides much-needed clarity of the construct and its constituent parts for use in both practice and research. We distinguish seamless shopping from other established constructs in the customer experience literature: satisfaction, shopping value, and loyalty. Therefore, we present an emerging theory of seamless shopping. Secondly, responding to calls for better customer experience measures (Lemon and Verhoef 2016), we empirically develop a short 7-item seamless shopping scale, which is valuable for use with consumers. We validate the scale several times by collecting data sets across two populations (U.S. and UK consumers) and we measure relationships with prominent customer experience evaluation scales currently in use, through a nomological validity assessment. As we develop the scale based on experiences with various omnichannel product categories, the scale applies to many omnichannel retailers, various product categories and shopping experiences. We suggest that retail practitioners adopt the scale to assist in assessing their omnichannel strategies, which can often be complex to implement (Ailawadi and Farris 2017). Thirdly, we empirically show that seamless shopping leads to several desirable consumer behavioural outcomes such as satisfaction, shopping value, and loyalty.

We first conceptualize seamless shopping and define the two dimensions that compose the concept. A scale development procedure follows consisting of item generation and four empirical studies that establish and verify seamless shopping as a construct. Lastly, we show the predictive ability of the construct on behavioural outcomes.

2.3 Conceptualizing Seamless shopping

The foundation of seamless shopping can be explained by Gestalt theory. The Gestalt Theory held that perceptual wholes are different from collections of its parts, in that the whole is greater than the sum of its parts (Wertheimer 1938). People perceive the whole of an object (i.e. gestalt) rather than analyzing its separate constitutive elements (i.e. the parts). These perceptions are called holistic or gestalt processing on the gestalt level and atomistic processing on the parts level (Koffka 1935). Therefore, from a customer shopping journey perspective, customers perceive the whole shopping experience as one unit rather than individually analyzing each element of the shopping journey in isolation. The Gestalt theory acknowledges that seamless shopping journeys are made up of several elements such as interactions with channels, devices etc., and the evaluation of seamless shopping is different from the sum of the evaluation of each interaction in isolation. This reasoning suggests that measuring the sum of customers' perception of each interaction with channels or touchpoints is futile as the whole is more than the sum of its parts. Therefore, Gestalt theory contributes to the underlying concept of seamless shopping as the overall evaluation of the shopping experience is different from the sum of each interaction with channels and devices

Shopping experience has long been determined as an integral component in the purchase of goods and services, consisting of both hedonic and utilitarian functions (Holbrook and Hirschman 1982). It encompasses interactions, multi-dimensionality, and uniqueness (Frow and Payne 2007 ; Grewal et al. 2009 ; Verhoef et al. 2009) and includes cognitive, affective and physical components (Bitner 1992 ; Holbrook and Hirschman 1982). Moreover, experience has been classified in multiple contexts, with shopping (Tauber 1972), products (Hoch and Ha 1986), brands (Brakus et al. 2009) and customer (Verhoef et al. 2009). Customer experience contains the search, purchase and aftersales phases of the shopping

journey (Verhoef et al. 2009), which takes place over a variety of platforms; store (Swinyard 1993), devices (Verhoef et al. 2015) and touchpoints (Hansen and Sia 2015). Today, customers' shopping experiences are driven by technological innovation, steering shopping journeys that are desirably efficient and continuous to the purchase destination.

Since other domains focus on the seamless transitions encountered between online and offline contexts such as gaming (e.g., SEGA, 2008) and learning (e.g., Buschlen and Guthrie 2014), we focus our conceptualization of seamless shopping specifically within the marketing domain. Firstly, whilst these non-marketing domain conceptualizations offer too broad a view to being applied within a specific context, seamlessness perception often concerns the recipient i.e. customer or student. Our conceptualization thus takes the customer viewpoint. Secondly, seamless shopping is often cited as the goal of omnichannel retailing strategy, which encompasses an optimized channel strategy for seamless transitions across channels (Grewal et al. 2016 ; Kumar 2018). Therefore, our definition is prompted by its extensive demand in modern-day marketing decisions. Finally, whilst experience is comprised of several dimensions including cognitive, affective, physical and social dimensions, (Verhoef et al. 2015), seamlessness in literature refers to the cognitive function of switching channels and devices. The drivers of seamlessness can be explained by increasing consumer expectations for convenience, especially in online purchasing (Berry et al. 2002 ; Bridges and Florsheim 2008). As multiple channel shopping experiences are so prevalent today (Sopadjieva et al. 2017), the role of internet and mobile use has promoted more efficiency, ease-of-use and convenience benefits (Meuter et al. 2005), which appeal to task-driven shoppers. Holbrook and Hirschman (1982) outlined that task-driven consumers engage in goal-directed activities, which are described as "resulting from some type of conscious pursuit of an intended consequence" (Babin et al. 1994, p.645). This emphasizes a rational approach to shopping which contains elements of control, flexibility, accessibility and promotes satisfactory

outcomes (Bridges and Florsheim 2008). Seamless shopping is demonstrated by task-orientated elements such as the flexibility and accessibility of making easy transitions between channels (Grewal et al. 2016 ; Kumar 2018 ; Piotrowicz and Cuthbertson 2014) and the repetition and reliability associated with consistent value obtained on every channel (Cao and Li 2015). Thus, seamlessness focuses on the cognitive element within the shopping experience.

Seamless shopping is a delineation of customer experience, which is characterized by *consistent* and *continuous* shopping interactions with the retailer across platforms and channels during the customer journey. Firstly, like customer experience, seamless shopping contains the consumer perception of interactions upon direct or indirect contact with the company (Verhoef et al. 2009). However, seamless shopping comprises the comparison and similarity of each interaction with channels or touchpoints, as the consumer switches across several channels and devices during the experience (Schmitt 2010 ; Verhoef et al. 2015). The characteristics of seamless shopping lay in customer experience perceptions of sequential channel use with a single retailer. Customers wish to use all channels and touchpoints in relation to one another. When channels of a single retailer are successfully perceived as one brand and one entity by the customer, irrelevant of the channel, seamless transitions take place between them (Hakanen and Jaakkola 2012 ; Homburg et al. 2017). For example, when a customer visits a store to search for a product that they found online and it is not available in the store or the price is different online to the store price, the experience is not steady, which causes a lack of congruency in the shopping journey. Therefore, the similarity of channels and touchpoints provides *consistency* in experience across channels (Sousa and Voss 2006).

Secondly, according to Goersch (2002 p.749), “customers derive a seamless experience when they switch channels during their interaction with the retailer." Seamless shopping identifies the movement between channels and touchpoints, which promotes

continuity of the customer journey (Lemon and Verhoef 2016). When it is difficult to switch from one channel to another, the shopping task can be perceived as complex or problematic, prompting the customer to exert perceived unnecessary effort, which affects the progression of the shopping journey. For example, when a consumer has to input their details for a second time on another channel or they put an item in their basket on one channel and when continuing shopping on another channel, they find that it is not in their basket and they have to search for it again (Homburg et al. 2017). This adds complexity to switching amongst channels and inhibits a *continuous* shopping journey.

As outlined, these conceptualizations draw on marketing literature, where seamless shopping makes a valuable contribution to the customer experience domain. Responding to calls for further research on seamlessness within the customer journey (Lemon and Verhoef 2016), we aim to broaden the customer experience field by providing a conceptualization that encompasses the experience gap between channels and touchpoints. Therefore, we define seamless shopping as *the customer perception of a continuous and consistent shopping journey across multiple channels with a single retailer*.

2.4 Dimensions of Seamless Shopping

Following a cross-disciplinary literature review and in line with our definition, two dimensions are identified as significant to the customers' ability to switch seamlessly across channels when shopping: uninterrupted shopping journey (continuous) and value harmonization (consistent). An uninterrupted shopping journey consists of the customers' ability to switch channels *continuously* throughout the search, purchase and aftersales phases of the experience (Verhoef et al. 2015). In conjunction, value harmonization signifies the

consistency of benefits derived on each channel throughout the experience (Cao and Li 2015). Both dimensions are pivotal to the creation of seamless shopping, whilst proving distinct from each other (Banerjee 2014 ; Grenha Teixeira et al. 2017). Next, we describe the two dimensions in more detail.

2.4.1 Uninterrupted shopping Journey

Uninterrupted shopping journey relates to the continuity of shopping without issues or problems that disrupt or prevent the progression of experience across channels. As shopping often takes place over several channels, the nature of moving or switching amongst them can be described as constant, interchangeable or simultaneous (Verhoef et al. 2015). In the marketing context, customers often achieve seamlessness when they can transition across channels (Kumar 2018) through retailer's efforts toward channel integration (Banerjee 2014 ; Hakanen and Jaakkola 2012 ; Payne and Frow 2004). As a result, seamless shopping may lead to an enhanced or stronger experience (Brynjolfsson et al. 2013 ; Wallace et al. 2004). In its extreme form, an uninterrupted shopping journey provides smooth, easy and continuous transitions, contributing to seamless shopping (Piotrowicz and Cuthbertson 2014). On the opposite extreme, the shopping journey is challenged by disruptions and interruptions, which may lead the customer to switch to another retailer (Banerjee 2014). Therefore, we define uninterrupted shopping journey as the continuity of shopping without issues or problems that prevent the progression of the customer experience across channels.

2.4.2 Value Harmonization

Value harmonization relates to the consistency of benefits perceived across channels over the total experience. Cao and Li (2015) identified benefits in an omnichannel context: product assortment, aligned price and promotion. Customers identify homogeneity of price,

promotion and product assortment on each channel that they interact with, fostering a harmonious customer journey with the brand. Consistency of value reduces uncertainty in the experience leading to stronger experiences, whilst inconsistent value over channels may lead to irritation or frustration (Lemon and Verhoef 2016 ; Mohammed 2017). As customers want to experience the brand, irrelevant of the channel, the consumers' perception of benefits accrued on each channel can affect the total experience (Payne et al. 2017 ; Smith and Wheeler 2002) perhaps by leading the consumer to question the integrity of the brand when value differs. Thus, when the same value is perceived on each channel, this is more likely to lead to a seamless shopping. Therefore, we define value harmonization as the consistent perception of benefits that can be obtained on every channel, and benefits refer to the same product assortment, price, and offers redeemable across channels (Cao and Li 2015 ; Grewal et al. 1998).

Based on these dimensions, we propose that customers perceive an uninterrupted shopping journey and value harmonization across all channels. They switch continuously amongst channels (uninterrupted shopping journey) and receive consistent benefits of product availability, prices and offers on every channel (value harmonization). The two dimensions are mutually connected, such that each dimension combine to explain seamless shopping.

2.5 Scale Development Process

We reviewed all existing scales and scale items related to customer experience and service quality, to ensure that they did not meet our needs. Several measures exist to measure customer experience in practice such as brand experience (Brakus et al. 2009), customer experience quality (Klaus and Maklan 2012) and SERVQUAL (Parasuraman et al. 1988).

However, there is a lack of strong customer experience measures in existence (Lemon and Verhoef 2016). The brand experience scale measures the "subjective, internal consumer responses (sensations, feelings, and cognitions) and behavioural responses evoked by brand-related stimuli that are part of a brand's identity, packaging, communications and environments" (Brakus et al. 2009, p.65). Its four dimensions; sensory, affective, behavioural and intellectual contain items that are highly specific to the overall perception of brands as opposed to the reflective evaluation of specific shopping experiences with goods and services. Therefore, it does not meet our objectives in measuring seamless shopping. Secondly, the customer experience quality scale (Klaus and Maklan 2012), containing four dimensions (peace of mind, moments of truth, outcome focus, and product experience) does not meet our needs because it does not refer to experience over several channels or the customer journey and focuses more on service experience and loyalty. Lastly, the SERVQUAL scale (Parasuraman et al. 1988) contains 22 items and focusses on service quality within a physical setting and interactions with service staff. This scale does not meet our needs because it focusses on service elements within the physical store channel only.

Furthermore, we also reviewed all existing multiple channel integration scales found in the literature (Bendoly et al. 2005 ; Cao and Li 2015 ; Frasquet et al. 2017 ; Lee and Kim 2010). These scales were found to be unsuitable in meeting the purpose of measuring seamless shopping because they focus on specific internal retailer elements of channels as opposed to customer perception. They include items such as 'integrated marketing communications', 'inventory' and 'substitute products' and make little references to consistency and continuity of experience between channels.

As no existing scales were found to meet our needs, we develop a seamless shopping scale that captures the conceptualized dimensions and discusses the requirements for each dimension. We followed established scale development procedures (Churchill 1979 ;

DeVellis 2012) to produce this scale, starting with item generation. Table 2 shows the scale development process.

Table 2: Scale Development Process

Steps	Data and Methods	Results
Item Generation	Literature Review Customer Interviews (n=20)	Initial set of 29 items generated
Scale Purification	Expert judges (n=9) Statistical procedure (CVR) Collection of data: 301 UK consumers (study 1) Statistical procedures (EFA, CFA)	8 items removed. Final scale with 7 items
Scale Dimensionality	Discriminant validity between SS dimensions: Fornell-Larcker criterion (data from study 1)	Model with two dimensions shows best fit and discriminant validity is confirmed between SS dimensions
Scale Validation	Collection of data 322 U.S. customers (Study 2) Statistical procedures (EFA, CFA)	Consistency is confirmed and validated in another data set, on a second population
Discriminant Validity	Collection of data 323 U.S. customers (Study 3) CFAs to check discriminant validity of SS	Discriminant validity is confirmed between SS dimensions and satisfaction, shopping value, loyalty and service quality scales
Nomological validity	Nomological validity between SS and related constructs.	All correlations with constructs were positive and significant.
Cross National Invariance	Assess cross-validation across multiple groups	VH items were error invariant across both UK and U.S. populations and the USJ dimension exhibited a slight difference
Predictive Validity	Collection of data: 402 UK consumers (Study 4) Perform SEM to analyze outcomes	SS mediates the relationship between firm-channel integration and satisfaction, shopping value and loyalty.

Notes: CFA: Confirmatory Factor Analysis, EFA: Exploratory Factor Analysis, SEM: Structural Equation Modelling, CVR: Content validity ratio, VH: Value Harmonization, USJ: Uninterrupted shopping journey and SS: Seamless shopping.

2.5.1 Study 1: Item Generation

We created a large pool of initial items both from the literature review and through exploratory research. When little knowledge is available about phenomena, field research is recommended for conceptual development and cross-validation (Edmondson and McManus 2007). Therefore, we undertook 20 exploratory interviews (65% Female, Average age: 33) with UK respondents (March-May 2015) to identify the topic in the current environment, confirming the construct, its dimensions and determining relevancy from the consumer perspective. All interviews lasted an hour on average. Consumer respondents were asked what they thought was a seamless shopping experience by describing aspects of good and bad recent shopping experiences with brands. The interviewer then probed the construct's content and related dimensional considerations, based on the experiences they had discussed. The interviewer also queried any missing experience dimensions (i.e., affective, physical and social) to confirm the cognitive findings in the literature. The customer data was transcribed and analyzed, and several items were generated from the data.

In addition to items generated from the qualitative research, items were also inspired by the literature and existing scales in the literature (Babin et al. 1994 ; Brakus et al. 2009 ; Cao and Li 2015 ; Klaus and Maklan 2012). From the qualitative research and literature review, we generated an initial pool of 29 items.

2.5.2 Study 2: Scale Purification

Nine marketing faculty experts with expertise in the literature carried out an item purification task on the 29 items in the form of a content validity assessment (Bearden et al. 2011 ; Blumberg et al. 2005 ; DeVellis 2012). They were asked to rate the items into three groups; 'essential to the scale', 'useful but not essential' and 'not essential'. A content validity ratio (CVR) statistical test (Lawshe 1975) was then implemented on the ratings, to

substantiate the observed judgments. The CVR proposed by Lawshe (1975) is a linear transformation of a proportional level of agreement regarding how many "experts" within a panel rate an item "essential". CVR is calculated as follows:

$$CVR = \frac{NE - (N/2)}{N/2}$$

where CVR is the content validity ratio, NE is the number of panel members indicating an item "essential," and N is the number of panel members. As there were nine judges, CVR must be $CVR_{critical}$ of .778 or above for each item to be retained according to Ayre and Scally (2014). Out of the 29 items, 21 were retained in two dimensions; 9 uninterrupted shopping journey and 12 value harmonization items.

Data was collected from 301 UK consumers (Study 1, 57% female, Median age: 30-39 years of age) via a reputable data collection agency. Respondents were asked to recall a recent shopping experience within the last three months, to ensure accurate recall from memory. To verify that they had met the conditions for seamless shopping over several channels, we stipulated that their recalled experience must have contained a minimum of two channels and they were asked to indicate the channels that they used, to affirm this. The channels specified included all present-day channels; internet, telephone; mobile phone; app, tablet, store or in-store interactive kiosk/tablet. To ensure that experiences were relevant to the majority of omnichannel shopping experiences, the recalled purchase experience must have involved a product in the top-cited omnichannel shopping product categories as defined in recent research (Saleh 2016), which were: consumer electronics, clothing/apparel, toys, home appliances, automotive and home improvements. Following clarification of their recalled shopping experience, respondents were asked to rate each seamless shopping item on a 7-point Likert scale, from strongly disagree to strongly agree. An instructional check, which requested the participant to "click on 'strongly disagree'" was included to ensure that the participants read the items carefully.

Table 2.1: Descriptive Statistics

Population of study:		Study 1 (n= 301) UK Consumers	Study 2 (n=322) U.S Consumers	Study 3 (n=323) U.S Consumers	Study 4 (n=402) UK Consumers
Gender	Male	42.9 %	67.6 %	31.3 %	62.7 %
	Female	57.1 %	32.4 %	68.7 %	37.3 %
Average Number of Channels Used		2.23	2.27	2.26	2.42
Channel Use					
Mobile Site/Mobile App		43.3 %	46.3 %	46.6 %	39.8 %
Website		33.2 %	30.0 %	30.3 %	34.0 %
In-store		18.4 %	18.4 %	18.4 %	19.5 %
Telephone		3.5 %	4.3 %	3.6 %	4.4 %
In-store Kiosk/Tablet		1.5 %	1.1 %	1.0 %	2.4 %
Product Type					
Consumer Electronics		26.6 %	37.9 %	30.7 %	29.1 %
Clothing/Apparel		41.9 %	36.0 %	45.8 %	42.8 %
Toys		15.0 %	8.7 %	10.2 %	12.2 %
Home Appliances		10.6 %	8.1 %	5.9 %	9.0 %
Automotive		1.7 %	3.4 %	2.2 %	2.0 %
Home Improvements		4.3 %	5.9 %	5.3 %	5.0 %

Table 2.2: Exploratory Factor Analysis seamless shopping dimensions

	Factor			
Item	VH	USJ	Mean	Standard Deviation
Product availability is the same in all channels	**0.63**	0.33	5.04	1.68
Offers are consistent across channels	**0.61**	0.40	5.19	1.49
Prices are the same across channels	**0.81**	0.17	5.35	1.45
I am able to continue the shopping experience on any channel	0.26	**0.70**	5.38	1.30
I can use channels interchangeably during the search and purchase stage	0.23	**0.68**	5.08	1.43
I can move easily from one channel to another	0.27	**0.68**	5.39	1.26
My shopping journey is continuous across channels	0.29	**0.67**	5.18	1.30

Notes: Factor analysis with varimax rotation. Items in bold indicate their factor loadings.
All items were assessed using a 7 point Likert Scale (1 = strongly disagree and 7 = strongly agree). This table shows the final items used in the scale. USJ = Uninterrupted shopping journey, VH = Value harmonization.

15 participants were excluded from the study for failing the instructional check. Table 2.1 presents descriptive statistics of the samples.

The data was analyzed using statistical procedures: exploratory factor analysis [EFA] and confirmatory factor analysis [CFA]. An EFA with varimax rotation revealed two factors with eigenvalues greater than 1 and the two factors explained 67% of the variance. Table 2.2 presents the EFA results.

We continually inspected all loadings with low individual reliabilities for their domain representativeness and following conceptual consideration, 14 items were removed, leaving 7 items loading onto their designated two factors. 4 uninterrupted shopping journey items loaded onto the first factor and 3 value harmonization items loaded on the second factor. We then ran CFA using Stata 12. A model containing two latent factors, with the two dimensions as per the definition revealed an excellent model fit (confirmatory fit index [CFI] = 0.992 and Tucker-Lewis index [TLI] = 0.987, root mean square of approximation [RMSEA] = 0.040, standardized root mean square residual [SRMR] = 0.026, χ^2=19.387, *df* = 13). All standardized loadings ranged between 0.71 and 0.76 and loaded onto their designated factors. As per recommended thresholds, the average variances extracted (AVE) and composite reliabilities (CR) were above recommended thresholds (Hu and Bentler 1995); for uninterrupted shopping journey (AVE = 0.63 and CR = 0.87) and value harmonization (AVE = 0.55 and CR = 0.78). Further to this, the coefficient alpha for uninterrupted shopping journey and value harmonization were 0.81 and 0.78 respectively, which was above the recommended thresholds (Fornell and Larcker 1981). This confirmed evidence of convergent validity. The results are outlined in Table 2.3 alongside all other study results.

2.5.3 Scale Dimensionality

Two tests were used to confirm discriminant validity between the two dimensions. Discriminant validity was first assessed using the Fornell and Larcker (1981) criterion, where AVE's for each dimension should be higher than the squared correlation between them. The

AVE's (uninterrupted shopping journey = 0.63 and value harmonization = 0.55) were higher than the squared correlation (0.33) between the variables, thus confirming discriminant validity on a dimensional level.

To further confirm discriminant validity, an analysis of alternative models with CFA was carried out. A null model, which assumed correlations of 0 between variables, was compared with a one-factor model, where all latent variables were loaded onto one factor, and the two-factor model. The two factor model fit provided a considerably better fit than the one-factor model fit (CFI = 0.888, TLI = 0.832, RMSEA = 0.143, SRMR = 0.062, χ^2 =100.263, *df* = 14), and the null model.

2.5.4 Study 2: Scale Validation

To ensure that the scale in use was replicable and generalizable across all populations, we replicated and validated the scale on a second population. Study 2 (n= 322; 32.4% female; median age: 18-29 years of age) was carried out with U.S. consumers, and the sample was recruited via a reputable data collection agency. Consistent with study 1, a similar questionnaire was administered and the items were assessed using a 7 point Likert scale.

The results of study 2 were analyzed using the same procedures as in study 1. The EFA and CFA produced similar results. This confirmed the two factors as identified in study 1. The replication study produced a model with excellent fit (CFI = 0.994, TLI = 0.991, RMSEA = 0.041, SRMR = 0.022, χ^2 =20.045, *df* = 13). All indicators were between 0.71 and 0.85 and a comparison of the models showed that the two-factor model was superior to the null and one-factor model. Table 2.3 shows the validated scale and standardized loadings. AVE's (uninterrupted shopping journey = 0.65 and value harmonization = 0.59) and CR values (uninterrupted shopping journey .88 and value harmonization = 0.81) were also above the recommended thresholds (Hu and Bentler 1995) which confirmed convergent validity.

The squared correlation between the dimensions (0.50) was also below AVE values, which confirmed discriminant validity on a dimensional level (Fornell and Larcker 1981).

Table 2.3: Confirmatory Factor Analysis; standardized factor Loadings

Item	Study 1	Study 2	Study 3	Study 4
Uninterrupted shopping journey (USJ)				
I am able to continue the shopping experience on any channel	0.74	0.82	0.77	0.80
I can use channels interchangeably during the search and purchase stage	0.71	0.79	0.81	0.75
I can move easily from one channel to another	0.73	0.81	0.84	0.87
My shopping journey is continuous across channels	0.73	0.81	0.83	0.76
Value harmonization (VH)				
Product availability is the same in all channels	0.73	0.71	0.72	0.84
Offers are consistent across channels	0.76	0.85	0.83	0.75
Prices are the same across channels	0.73	0.73	0.81	0.80
Number of observations	301	322	323	402
Average Variance Extracted USJ	0.63	0.65	0.66	0.63
Composite Reliability USJ	0.87	0.88	0.88	0.87
Average Variance Extracted VH	0.55	0.59	0.62	0.64
Composite Reliability VH	0.78	0.81	0.83	0.84
Factor Correlation	0.57	0.71	0.69	0.73
χ^2	19.387	20.045	30.685	35.742
Comparative Fit Index	0.992	0.994	0.986	0.986
Tucker - Lewis Index	0.987	0.991	0.978	0.977
Root mean square error of approximation	0.040	0.041	0.065	0.066
Standardized root mean square residual	0.026	0.022	0.026	0.027

Notes: All factor loadings are significant at $p < .001$. USJ = Uninterrupted shopping journey, VH = Value harmonization

2.5.5 Study 3: Discriminant Validity

Study 3 (n=323; 68.7% female, median age: 30-39 years of age) was also carried out with U.S. consumers to assess whether the seamless shopping construct was distinct from related constructs. The two seamless shopping dimensions were assessed for their distinctiveness against four other closely related constructs that are established in marketing research: satisfaction, shopping value, loyalty and service quality. We asked respondents to rate our 7-item seamless shopping scale for a third time along with the established scales of the other constructs; satisfaction (Oliver 1980), shopping value (Sirdeshmukh et al. 2002), loyalty (Cronin et al. 1997) and service quality (Cronin et al. 1997). We validated the

seamless shopping scale in use for a third time, replicating studies 1 and 2 (see Table 2.3). Firstly, the correlations between all 6 constructs: the 2 seamless shopping dimensions and four related constructs, were squared and compared to their AVEs for each construct (Fornell and Larcker 1981). All AVEs were higher than the squared correlation between each pair of dimensions, as shown in Table 2.4 in the appendices.

Secondly, seamless shopping was tested with the four other constructs on a dimensional level by comparing models. The seamless shopping scale was set up as an independent construct and each related construct set up as a dependent dimension, which provided several two-dimensional models. The two-factor models were compared to one-factor models where both seamless shopping and the other construct items featured on one factor. The two-factor models consistently provided a better model fit than the single-factor models, thus indicating discriminant validity.

2.5.6 Nomological Validity

To assess nomological validity, we examined the correlations between the seamless shopping dimensions and their related constructs found in the literature; satisfaction (Oliver 1980), shopping value (Sirdeshmukh et al. 2002) and service quality (Cronin et al. 1997), and in addition, behavioural outcomes of loyalty (Pappu et al. 2006 ; Yoo and Donthu 2001) and switching intention (Jones and Taylor 2007). We administered these scales alongside seamless shopping dimensions in study 2, 3 and 4 questionnaires (see Table 2.7 in the appendices). More precisely, in study 2, we consider satisfaction, shopping value and service quality. In study 3, we added loyalty and in study 4, we replace service quality by switching intention. All correlations were significant, ranging from -0.25 to 0.65 (see Table 2.6 in the appendices). The seamless shopping dimensions are therefore correlated with theoretically related marketing concepts, providing support for nomological validity.

2.5.7 Cross-National Invariance

As the scale was tested using UK and U.S. population samples, we followed a standardized procedure for assessing cross-validation across multiple groups (Baumgartner and Steenkamp 1998 ; Hair et al. 2010). Measuring invariance determines whether, under different conditions of observation and study phenomena, the measurement of constructs are indeed measuring the same attribute (Baumgartner and Steenkamp 1998). To enhance the validity of the shopping seamless scale, we assess whether the measure meets configural, metric, and factor variance measurement invariance requirements. The principal of configural invariance is that the pattern of salient and non-saliant factor loadings should have the same configuration across different populations. By comparing two-group data from studies 1, 2 and 3 across the two populations, we found support for configural invariance by reaching an excellent fit (CFI = 0.992, TLI = 0.987, RMSEA = 0.045, SRMR = 0.023, χ^2 =51.350, *df* = 26). Secondly, metric invariance involves assessing equivalent scale metrics through constraining all factor loadings to be equal across populations. The chi-square value increased from the configural model to the metric invariance model (CFI = 0.993, TLI = 0.990, RMSEA = 0.040, SRMR = 0.029, χ^2 =53.937, *df* = 31), however, given that there is not a substantial change in fit, we can conclude that full metric invariance is supported. Factor variance invariance indicates the mean scores of latent factor variance across populations by constraining factor variances to be equal. We found that there was no significant increase in the chi-square value (CFI = 0.993, TLI = 0.993, RMSEA = 0.035, SRMR = 0.043, χ^2 =61.290, *df* = 39). After releasing the variances of each factor simultaneously, the fit of the model was essentially the same. Error variance invariance specifies that the degree of measurement error is invariant across countries. Partial invariance of error variance was rejected, with a highly significant chi-square. After relaxing the invariance constraints on all USJ items, this resulted in an adequate model fit (CFI = 0.970, TLI = 0.970, RMSEA = 0.071,

SRMR = 0.062, χ^2 =140.88, *df* = 42). Therefore, only the VH items were error invariant across both UK and USA populations and the USJ dimension exhibited a 0.04 difference. Firstly, this could be explained by general differences in the strength of opinions, whereby U.S. consumers may be firmer in their opinions than UK consumers. For example, 15% of U.S. respondents chose the strongest statement (strongly agree) for the items in the USJ dimension, in comparison to 10% UK consumers. USJ items are more subjective than the more factual VH items (prices, offers), thereby explaining why variance only occurred in the USJ dimension.

2.6 Study 4: Predictive Validity

Predictive validity produces theoretical support for a developed measure, by determining its effect on well-established constructs (El Akremi et al. 2015 ; Tian et al. 2001). Prior research proposes that seamless experience influences satisfaction, enhances shopping value (Shankar et al. 2011) and builds long-term loyal relationships (Wallace et al. 2004). Thus, we examine the relationship between seamless shopping and three strong and prominent outcomes; shopping value, satisfaction, and loyalty.

2.6.1 Using Shopping Seamlessness to Predict Satisfaction, Shopping Value, and Loyalty

Customer value perception is fundamental to all marketing activities (Holbrook 1994). Value has been related to customer experience, satisfaction, service quality and loyalty (Carpenter 2008 ; Cronin et al. 1997 ; Helkkula et al. 2012 ; Yang and Peterson 2004). Perceived value in literature has been conceptualized from both a broader multi-dimensional perspective encompassing perceived price, quality, benefits and sacrifices (Babin et al. 1994 ;

Holbrook 1994 ; Mathwick et al. 2001), and a narrower uni-dimensional perspective, which considers goal-directed behaviour of sacrifice versus what is received in a service exchange (Zeithaml 1988). The broader perspective identifies that consumers perceive value based on attributes, consequences and desirable outcomes, and that judgment of value is triggered in specific situations (eg. Purchase, shopping) (Sánchez-Fernández and Iniesta-Bonillo 2007). Attributes in a service exchange were discussed as perceived rewards, fairness and costs of time and effort in relation to the company offering (Yang and Peterson 2004). Customers seek value when comparing products between companies, by weighing attributes of perceived benefits versus sacrifices with the company offering (Yang and Peterson 2004). Consumer value is therefore imperative to obtaining competitive advantages for firms (Woodruff 1997) and superior customer value is a key determinant of loyalty (Sirdeshmukh et al. 2002). The consistency and continuation of the seamless customer journey should reduce costs of time and effort expenditure during the experience, by enhancing the achievement of task-orientated goals and reducing shopping disruptions (Carpenter 2008 ; Piotrowicz and Cuthbertson 2014 ; Rose et al. 2012). Furthermore, repeated customer-firm interactions enhance trust, which in turn leads to higher shopping value (Kanagaretnam et al. 2010). Consistent price, offer and product availability promotes repetition across channels, which is likely to lead to a more trusting consumer-retailer relationship.

Satisfaction is regarded as an evaluative process between expected and delivered components of the customer experience (Carpenter 2008 ; Oliver 1980 ; Verhoef et al. 2009). Satisfaction has been traditionally used to measure customer experience, therefore it has been deemed an important outcome for retailers (Verhoef et al. 2009). Consumer experience expectations will not only be drawn from previous brand experiences (Brakus et al. 2009), but may also be formed cumulatively over the various channels used during the experience and influence positive future intentions (Jones et al. 2006); Therefore one customer-channel

interaction could inform the expectations of the next customer-channel interaction, and in turn, the overall experience evaluation. For example, if a consumer sees an offer in the store channel, they will expect to also see the offer online, and this will inform their satisfaction during the next interaction. Therefore, the consumer will compare interactions across channels and this will lead to a total of cross-channel evaluations. Therefore, continuous and consistent experiences will likely lead to more positive evaluations due to more transparency, less effort, and more convenience during interactions across channels.

Lastly, seamless shopping may lead to loyalty because when customers use various channels and touchpoints throughout the experience, multiple interactions provide more opportunities to build a relationship with the brand and vice versa (Wallace et al. 2004). Loyalty towards a retailer is "demonstrated by the intention to buy from the brand as a primary choice'' (Yoo and Donthu 2001 p.3). Consumers demonstrate loyalty towards a particular retailer when they consistently extract value and satisfaction from customer-retailer exchanges (Zeithaml et al. 1996). Loyal customers generate word of mouth, which can be highly profitable for a brand (Zeithaml et al. 1996). Wallace et al. (2004) suggest that multiple channels are more likely to meet customer needs, leading to more satisfying interactions and in turn, loyalty to the retailer. Consistent communications and interactions across multiple channels were suggested to provide easy and convenient experiences for the consumer, leading to higher loyalty (Grewal et al. 2009). If consumers can move effortlessly across channels by using them interchangeably, consumers will be more motivated to return to the retailer.

2.7 Results

The seamless shopping scale was validated again. Confirmatory factor analysis provided excellent model fit (CFI = .986, TLI = 0.977, RMSEA = 0.066, SRMR = 0.024, $\chi 2$ =35.742, *df* = 13). Both dimensions achieved high loadings, CRs and AVE's (See "study 4" results in table 2.3). We then tested the full model of seamless shopping with the outcomes of satisfaction, shopping value and loyalty. All correlations were positive and significant between constructs, and all constructs produced high reliabilities and loadings. The model achieved an excellent fit (CFI = 0.981, TLI = 0.977, RMSEA = 0.043, SRMR = 0.032, $\chi 2$ =221.851, *df* = 142). In support of discriminant validity, all squared correlations between the two seamless shopping dimensions and the related constructs were higher than the AVEs. The model shown in figure 2 had the best model fit of all independent models and support effects of the previously untested seamless shopping construct on satisfaction and shopping value, leading to loyalty.

Direct and Indirect relationships were found. Regarding the direct effects, we find positive and significant effects between seamless shopping and shopping value (β = 0.50, p< .01), seamless shopping and satisfaction (β = 0.37, p< .01), seamless shopping and loyalty (β = 0.49, p< .01). Regarding the indirect effects, seamless shopping also had positive significant effects on shopping value, which in turn had positive significant effects on satisfaction (β = 0.23, p< .01). Seamless shopping had a positive significant effect on loyalty through shopping value (β = 0.13, p< .01).

Seamless shopping also had a positive significant effect on loyalty through satisfaction (β = 0.13, p< .01). These three partial mediations serve to support the model. All indirect effects are smaller than the direct effects but nonetheless contribute to the total effects. When adding the direct and indirect effects together, this provides the total effects. The standardized total effects in the model are satisfaction (β =0.60, p< .01), shopping value (β =0.50, p< .01) and

loyalty (β =0.57, p< .01). Thus, seamless shopping positively and significantly influences all dependent variables in our model.

Figure 2: Predictive Validity of Seamless Shopping

Notes: **p < .01, ***p < .001. VH = Value Harmonization, USJ = Uninterrupted Shopping Journey. All coefficients are standardized.

2.8 General Discussion

This study was motivated by the need for a deeper understanding of seamless shopping, to aid retailers in achieving their omnichannel strategies. Customer-firm interactions now take place across several channels during the same shopping journey. Whilst customers expect seamless shopping (Piotrowicz and Cuthbertson 2014), retailers struggle to implement omnichannel strategies that achieve it (Brightpearl and Merchant 2017). Despite several studies signifying its current relevance in the marketing domain (Kumar 2018 ; Marketing Science Institute 2018 ; Steinhoff et al. 2018), research into seamless shopping remains scarce. The contributions within this study are threefold. Firstly, we offer a conceptualization to establish the construct within the literature. Following an extensive literature review, we

conceptualize seamless shopping as the customer perception of a continuous and consistent shopping journey across multiple channels with a single retailer. Secondly, we provide a reliable and valid measure to support its use in both research and practice. The 7-item seamless shopping scale is comprised of two dimensions; uninterrupted shopping journey and value harmonization. Validated in four studies over two populations, we produce a reliable and valid shopping seamless scale. We distinguish the scale from related constructs currently used in marketing and provide nomogical validity. Thirdly, we show how the scale predicts important and significant outcomes. The results of study 4 offer strong support for the seamless shopping scale in use. We therefore evidence that the scale is related to significant outcomes highly applicable within the marketing and customer experience domain. When customers perceive seamless shopping, they are likely to derive more value in their experience, be highly satisfied and more loyal. Overall, the findings reveal clear associations between seamless shopping and strongly identified desirable behavioural outcomes. This reinforces the pertinence of improving understanding of seamless shopping in omnichannel retailing.

2.8.1 Implications for Marketing Theory

Given that the majority of consumers now shop across several channels (Sopadjieva et al. 2017), seamless shopping extends customer experience theory by identifying what customers seek as they switch channels when shopping. Seamless shopping holds a unique position in the customer omnichannel shopping journey, promoting continuation and consistency across channels. Applicable to all channels, seamless shopping plays a highly significant role in strengthening the experience (Brynjolfsson et al. 2013 ; Flavián et al. 2019). The future of omnichannel retailing demands a more sophisticated and connected customer experience, whilst the customer experience research field requires strengthened

theory and knowledge. Building upon existing theory, the seamless shopping concept brings forth customer experience into the new omnichannel shopping context.

Accompanying the conceptualization of seamless shopping, the measure supports the theory and facilitates implementation. The short 7-item scale is quick to administer and is applicable for use with various product categories and retail channels, thus it is adaptable to many research contexts and retail environments. The theoretically grounded scale produces consistent convergent and discriminant validity on both a dimensional and construct level. The scale was verified in four studies, and generalized in two distinct cultures. The scale is developed using established scale development procedures and therefore holds potential to be valuable in academic use.

Finally, we evidence predictive validity of the scale and conclude that the construct performs well in relation to well-established constructs (Shopping value, satisfaction and loyalty) that are consistently used in literature and practice. This reinforces the role that seamless shopping plays in modern-day shopping journeys and indicates that consumers experiencing seamless shopping are more likely to derive shopping value, satisfaction and loyalty. This research therefore addresses the limited empirical work and holds potential to add new perspectives to marketing theory.

2.8.2 Managerial Implications

This research generates new and helpful insights for practitioners that are essential for the success of omnichannel retailing strategies. Firms are continually searching for new ways to manage a complex array of channels that drive consumers' seamless purchases (Marketing Science Institute 2018). Seamless shopping has the potential to deeply influence managers' strategy formation and support their objectives by furthering knowledge about seamless shopping. We provide a conceptualization from a customer perspective, taking into account

all main channels and products bought in omnichannel retailing. This research is therefore relevant to all retailers selling consumer electronics, clothing/apparel, toys, home appliances, automotive and home improvement goods, implementing omnichannel strategies to create a seamless experience.

Retailers can better align the objectives of their omnichannel strategies by pinpointing integral components that create a continuous and consistent shopping journey across multiple channels with a single retailer. For example, push/pull strategies that are designed to promote one channel over another should avoid differences in product availability, offers and prices across channels. When consumers shop with a retailer, they perceive shopping with the same brand, regardless of the channel. Therefore strategies such as 'online only' sales, product discounts in a single channel only or diverse differences in products available online to offline should be carefully considered. These activities can limit the achievement of seamless shopping, leading to irritation and customer confusion (Saghiri et al. 2017). Managers should thus consider the provision of product availability, offers and prices across channels from a global omnichannel perspective when drawing up promotions and sales initiatives.

This study also establishes the characteristics of seamless shopping; easy movement from channel to channel, interchangeable nature of channels and continuation of the customer journey. Retailers are therefore encouraged to consider investing in between-channel activities that allow ease of movement between channels. For example, barcode scanners in mobile applications help consumers use their mobile in the store experience. For example, adding barcode scanners to mobile apps allows in-store consumers to access instant information about products without having to find an available store assistant. In fashion, the barcode scanner can also help the customer to visualize the product on the model or themselves without trying it on and view different items that might compliment the outfit. Consumers buying electronic products can use the mobile app barcode scanner to see further product

specifications and compare similar models. Apps offering artificial reality (AR) allow in-store customers to easily visualize the product in their home without the inconvenience of ordering and collecting a product that may not be suitable. These mobile between-channel initiatives can help the continuation and ease of the experience. Therefore, seamless shopping offers direction for retailers on enhancing their omnichannel integration activities.

Adopting the scale for use in practice can help retailers measure the achievement of their omnichannel strategies. Although retailers may have multiple channel integration activities available such as click-and-pick-up in-store, click-to-call, same price, offers and product availability, they may not be working efficiently. For example, there may be human error in setting prices, or operational errors or delays in ensuring product availability across channels. Using the scale in practice can act as a barometer to investigate problems in channel integration activities. Furthermore, it may indicate differences when introducing new channels, commencing or stopping channel integration initiatives, altering services or for testing new initiatives. Implementing the scale in practice can therefore be used as an efficiency indicator or as a comparison tool, which will help retailers achieve their omnichannel strategies.

Furthermore, focusing on seamless shopping can help retailers strengthen customer relationships. As seamless shopping encompasses multiple interactions across several channels, it can be highly impactful, resulting in shopping value, satisfaction and loyalty. A consistent and continuous service during the search and purchase stage of the customer journey allows customers to move effortlessly and conveniently from online to offline channels and vice versa. This may result in higher satisfaction because the customer has avoided inconsistencies in service, and obtained more value due to the experience going as expected. This leads to higher loyalty to the firm, which creates positive impact over the long-term. With increasing digitalization, channel integration challenges and heightened

competition between retailers, managers are encouraged to revitalize their strategic approach by focusing more on the consistent and continuous seamless shopping that customers demand, to enhance outcomes.

2.8.3 Limitations and Future Research Directions

The goal of this paper was to establish the seamless shopping construct, provide a measurement tool to support the conceptualization and predict outcomes of the scale. However, the seamless shopping construct requires further work to establish a wider framework, which will strengthen the theory surrounding the concept. Whilst this paper links seamless shopping to several significant outcomes in marketing literature, extensive work is required to establish a more comprehensive assessment of the wider framework surrounding the construct.

Although a wider investigation of the theoretical framework is beyond the scope of this study, future investigation could consider the antecedents required to create seamless shopping. For example, are there certain channel integration activities that are more important in providing a seamless experience than others? Or to what extent does customer service affect seamless shopping? Indicating what is required to create seamless shopping will strengthen managerial impacts and enhance its theoretical contribution.

Further research could also capture the profiles of shopper who place more or less value on seamless shopping. For example, consumers who seek convenience or variety may place a higher value on seamless shopping than consumers seeking shopping enjoyment. Expanding outcomes to include retailer performance would clarify tangible benefits to the retailer such as basket size and market share. For instance, seamless shopping could improve the basket size of shoppers through strengthening the mobile app's integration with the store channel. Furthermore, customer engagement has become popular in recent research

(Hollebeek et al. 2019 ; Pansari and Kumar 2017). As seamless shopping improves loyalty and satisfaction, exploring richer outcomes desirable to retailers such as customer engagement could enhance implementation and adoption of the scale.

The seamless shopping scale is generalizable across populations and customer experiences. However, further detail about how consumers interact with certain channels at various stages of the customer journey would enrich the seamless shopping framework. For example, does the mobile app's features such as AR improve seamless shopping by enhancing the visual aspect of the experience? Future research may therefore investigate further channel benefits that could enhance seamless shopping. Seemingly, further research is needed to assist retailers in implementing omnichannel strategies that focus on seamless goals.

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2.10 Appendices

Table 2.4: Discriminant Validity. Average Variance Extracted (study 3)

	VH	USJ	Satisfaction	Shopping Value	Loyalty	Service Quality
VH	**0.53**	*0.48*	*0.26*	*0.19*	*0.21*	*0.16*
USJ	0.69*	**0.57**	*0.43*	*0.35*	*0.32*	*0.23*
Satisfaction	0.51*	0.65*	**0.58**	*0.51*	*0.41*	*0.34*
Shopping Value	0.44*	0.59*	0.72*	**0.54**	*0.37*	*0.28*
Loyalty	0.45*	0.57*	0.64*	0.61*	**0.78**	0.27
Service quality	0.40*	0.48*	0.58*	0.53*	0.52*	**0.93**
Number of Items	3	4	4	3	4	5
Mean	5.49	5.61	5.73	7.37	5.53	7.3
Std. Deviation	1.17	1.03	1.03	1.35	1.33	1.56
Cronbach's alpha	0.82	0.88	0.88	0.81	0.91	0.85

* = Correlation is significant at the 0.01 level (2-tailed). AVEs are shown in bold. Squared correlations are shown in italics. USJ = Uninterrupted shopping journey, VH = Value harmonization. All scales were measured on a 7-point Likert scales, except shopping value and service quality, which were measured on their original 9-point response scales.

Table 2.5: Discriminant Validity model comparison (study 3)

	Seamless shopping and Satisfaction		Seamless shopping and Shopping Value		Seamless shopping and Loyalty		Seamless shopping and Service Quality	
	1 factor	2 factor	1 factor	2 factor	1 factor	2 factor	1 factor	2 factor
chi2_ms	965.004	607.810	187.455	119.015	729.037	162.896	914.401	395.374
RMSEA	0.189	0.147	0.136	0.105	0.220	0.093	0.222	0.141
AIC	13774.840	13419.647	8478.021	8411.580	10093.517	9529.376	12543.147	12026.119
BIC	13933.372	13581.953	8579.934	8517.268	10218.077	9657.711	12679.142	12165.892
CFI	0.665	0.799	0.895	0.939	0.712	0.950	0.645	0.859
TLI	0.604	0.760	0.860	0.916	0.641	0.936	0.566	0.824
SRMR	0.130	0.113	0.061	0.045	0.105	0.046	0.122	0.066
CD	0.924	0.986	0.915	0.969	0.921	0.991	0.916	0.912
		Better Model Fit		Better Model Fit		Better Model Fit		Better Model Fit

Notes: D.F = degrees of freedom. CFI = comparative fit index. TLI = Tucker-Lewis index. RMSEA = Root mean squared error of approximation. SRMR = Standardized root mean squared residual and AIC = Akaike's information criterion.

Table 2.6: Nomological Validity

	Study 2		Study 3		Study 4	
Construct	VH	USJ	VH	USJ	VH	USJ
Satisfaction	0.53*	0.62*	0.51*	0.65*	0.47*	0.45*
Shopping Value	0.45*	0.57*	0.44*	0.59*	0.50*	0.38*
Service Quality	0.37*	0.38*	0.40*	0.48*		
Loyalty			0.45*	0.57*	0.29*	0.35*
Switching intention					0.19*	0.24*

* = Correlation is significant at the 0.01 level (2-tailed). USJ = Uninterrupted shopping journey, VH = Value harmonization

Table 2.7: Related Constructs and Scales (Studies 2, 3 and 4)

Construct	Items
Satisfaction (Oliver 1980)	Overall. I am satisfied with my shopping experience with *x retailer* My choice to purchase at this retailer was a wise one I think I made the right choice when I decided to buy at *x retailer* I am always delighted with this retailer's service *Assessed on a 7 point Likert scale, Strongly disagree 1 – Strongly agree 7*
Shopping Value (Sirdeshmukh et al. 2002)	For the prices you pay for products at x *retailer*, would you say that shopping with this retailer is ["very poor deal"/"very good deal."] For the time you spent shopping at *x retailer*, would you say that shopping with this retailer is ["highly unreasonable"/"highly reasonable."] For the effort involved in shopping at x *retailer*, would you say that shopping with this retailer is ["not at all worthwhile"/"very worthwhile."] *Accessed on a rating Scale 1 - 9*
Service Quality (Cronin et al. 1997)	Poor – Excellent Inferior – Superior High Quality – Poor quality Low standards – high standards One of the best – one of the worst *Accessed on a rating Scale 1 - 9*
Loyalty (Pappu et al. 2006 ; Yoo and Donthu 2001)	XYZ stores would be my preferred choice I consider myself loyal to XYZ stores I will not buy products from other retailers if I can buy the same item at XYZ stores. XYZ stores would be my first choice. *Assessed on a 7 point Likert scale, Strongly disagree 1 – Strongly agree 7*
Switching intention (Jones and Taylor 2007)	Rate the probability that you would switch to another retailer Unlikely / Likely Improbable / Probable No chance / Good chance *Accessed on a rating Scale 1 - 7*

CHAPTER 3: The Antecedents and Consequences of Seamless Shopping

3.1 Abstract

The intensifying competition in the retailing sector requires managers to identify the factors that enable better customer experiences. Understanding how to create seamless shopping provides insights into how retailers can better integrate their channels to achieve desirable consumer outcomes. To complement scale development on seamless shopping (chapter 2), we subject this newly conceptualized and empirically tested construct within a framework of antecedents and consequences. The purpose of this study is to establish the seamless construct, by firstly predicting the firm antecedents required to create customer perceived seamless shopping and secondly, embedding the seamless shopping construct within a more ambitious framework by empirically exploring further important modern-day consequences. Building on servicescape theory, we establish seamless shopping within a mediating framework. Using two different country samples (UK and French), we find evidence to support that seamless shopping is the customer perception of firm-channel integration. We empirically demonstrate that seamless shopping predicts relevant and established behavioural consequences. Furthermore, we extend previous literature by updating a firm-channel integration measurement tool. Our overall findings further advance much-needed theory in the customer experience field, whilst empirically developing links between omnichannel integration and its objective, seamless shopping, for marketing practice managers.

Keywords: channel integration, seamless shopping, multilevel modelling, mediation analysis

3.2 Introduction

Omnichannel retailing has been deemed critical to retailer success (Verhoef et al. 2015). In the move from multichannel to omnichannel, customers now shop over several channels simultaneously during the purchasing journey. Whilst they interact with several consecutive channels, they expect and demand a seamless shopping journey without disruptions (Piotrowicz and Cuthbertson 2014 ; Zhang et al. 2010). Many retailers make costly efforts to integrate their channels under the belief that channel performance allows customers to receive a seamless experience (Grewal et al. 2016). U.S retailer, Walmart, recognises that omnichannel consumers want smooth uninterrupted shopping experiences, by investing $1.2 billion to integrate their e-commerce platforms and supply chains (Grill-Goodman 2015). As many more retailers invest in costly operations, distribution and technologies to integrate channels and touchpoints, they hope to facilitate seamless customer shopping experiences (Herhausen et al. 2015). However, despite retailer investments in channel integration, only 7% of retailers achieve seamless experience (BRP 2018). Given that omnichannel is a key priority for retailers, firms invest in channel integration to achieve seamless shopping (Banerjee 2014 ; Cao and Li 2015 ; Goersch 2002 ; Zhang et al. 2010), however, it is not clear whether these investments are paying off.

The move to omnichannel is all-encompassing, as it incorporates many organizational processes and activities within a firm including IT systems, data, information, order fulfilment, transaction and pricing (Mirzabeiki and Saghiri 2020 ; Oh et al. 2012 ; Zhang et al. 2010). Omnichannel retailers integrate channels through organizing firm controlled processes and coordinating strategies, objectives and synergies across channels (Cao and Li 2015 ; Neslin et al. 2006). However, the objectives of these internal strategies are entirely customer-focused; omnichannel strategy aims to meet customer expectations of seamless experiences

(Piotrowicz and Cuthbertson 2014). As omnichannel retailers strive to integrate their channels, they have to balance their internal capabilities and processes, with meeting these consumer aims. For example, it is difficult to evaluate whether channel integration efforts are meeting omnichannel objectives, without obtaining customer feedback on seamless aims. At the same time, omnichannel customer journeys can involve experiences over several channels and so, feedback on the sum of interactions might appear difficult to achieve.

Despite customer expectations of seamless shopping and substantial retailer investment in channel integration, consumers continue to report that they want better seamless connections between physical and digital channels (Accenture 2019). Whilst the proliferation of channels and touchpoints provide opportunities for customers to switch channels during the customer journey, integrating channels continue to pose challenges for retailers (Mirzabeiki and Saghiri 2020 ; Neslin et al. 2006 ; Zhang et al. 2010). One of the main challenges is to provide seamless shopping over channels to obtain strategic advantage (Grewal et al. 2016 ; Kumar 2018 ; Zhang et al. 2010), yet there remains little empirical evidence of channel integration leading to seamless shopping. Despite suggestions of the channel integration-seamless shopping relationship and its importance to retailer strategy, the link between firm-channel integration and customer perceived seamless shopping warrants investigation. Subsequently, consumer outcomes of loyalty, purchase intentions and customer retention (Bendoly et al. 2005 ; Herhausen et al. 2015 ; Li et al. 2018) show promising results of retailers' efforts to integrate channels. Yet little research has attempted to discover the internal experiential elements that may enhance or inhibit these outcomes. Furthermore, channel integration measures are quickly becoming outdated. Cao and Li (2015) present a comprehensive classification of channel integration activities. However, technological advancements in shopping are taking place at a fast pace (eg. Social media integration,

Amazon Go virtual payment, augmented reality) meaning that channel integration measures require updating.

This study makes three distinct contributions to the literature. Responding to several calls for further research on creating seamless purchase journeys (Marketing Science Institute 2018), we join channel integration and customer behavioural research to help us understand the chain of processes and control in the omnichannel retailing chain of effects. Based on multilevel structural equation modelling of consumer data and 30 retailers from UK and France, we suggest that seamless shopping mediates the relationship between firm-channel integration and consumer outcomes of customer engagement, loyalty, basket size and brand switching. Retailers are committed to achieving omnichannel goals and considerably invest in cross-channel integration activities to remain competitive and improve their financial performance (Cao and Li 2015 ; Li et al. 2018). Given these retailer commitments, ruptures in experience could be quite costly, whilst smooth and continuous experiences could be advantageous. We bring together two distinct literature streams by proposing that seamless shopping plays an important cognitive role in mediating firm-channel integration and beneficial consumer behaviours. Within this framework, we offer additional insights into the outcomes of seamless shopping. In customer experience literature, seamless shopping is suggested as a precursor to the attainment of customer engagement (Kumar et al. 2019), loyalty (Seybold et al. 2001) and avoidance of brand switching (Wallace et al. 2004). Given these substantial consequences, customers' consequent behaviour following seamless shopping warrants attention, to enhance understanding in this competitive retailing sector. We thus offer a conceptual framework that contributes to omnichannel retailing literature by offering a deeper understanding of the role of seamless shopping.

The low percentage of customers currently perceiving continuous and uninterrupted seamless shopping raises important questions about the efficacy of channel integration efforts

(BRP 2018). Although channel integration has shown much improvement, retailers still rely on consumers to integrate information across channels (Saghiri et al. 2017). For example, the customer often has to remember and repeat their purchase history on every channel if a problem arises or provide receipts when returning goods. Since customers are demanding seamless shopping (Zhang et al. 2010) but retailers often do not meet these requirements, robust research into the firm-channel integration – seamless shopping research will provide valuable insights for managers looking to achieve their omnichannel strategies. Channel integration's positive influence on firm performance (Cao and Li 2015) further illustrates a compelling argument to better understand this relationship. Furthermore, channel integration quality literature (Hossain et al. 2019 ; Shen et al. 2018) presents some confusion over firm controlled elements and customer experienced elements. Largely ignoring important SERVQUAL and E-SERVQUAL (Parasuraman et al. 1988 ; Parasuraman et al. 2005) and customer journey research (Kuehnl et al. 2019 ; Lemon and Verhoef 2016 ; Voorhees et al. 2017), integration quality attempts to fill the gap in service markers across channels, but often mixes firm and customer elements into a hybrid perspective. For example, quality of customer service is a customer evaluation (Parasuraman et al. 1988), whilst achieving quality of channel integration (efficiency, succession, standards) are a firm controlled set of activities. In this research we attempt to clearly distinguish firm and customer perspectives by extending on previous conceptual work (Banerjee 2014 ; Cao and Li 2015 ; Goersch 2002 ; Zhang et al. 2010), thus enriching much needed managerial and research implications.

As channel integration activities are rapidly evolving, our research adapts and updates previous measures in the omnichannel context. The fast pace of the move from multichannel to omnichannel (Verhoef et al. 2015) means that current channel integration measurement tools are becoming quickly outdated. Previous multichannel integration scales focus on store and website channels (Bendoly et al. 2005 ; Frasquet et al. 2017 ; Lee and Kim 2010),

however, they often fail to acknowledge the full scope of channels and devices used during the shopping journey (Beck and Rygl 2015). For example, the mobile is now a significant device used for shopping and plays an important role in customer journeys (Herhausen et al. 2019). Whilst Cao and Li (2015) present a channel integration scale concerning the full scope of available channel and touchpoints, it misses important developments in mobile shopping. The use of updated integration measures in retailing research is therefore vital for establishing current managerial directions on obtaining seamless shopping in the omnichannel context. In this research, we combine and review all known existing channel integration scales and update them in an omnichannel context.

The concept of seamless shopping is thus central to understanding much desired consumer behaviours in omnichannel retailing. This research focusses on channel integration that influences the perception of seamless shopping, and in turn, the beneficial consequences for retailers. We establish and empirically investigate a comprehensive conceptual framework that links firm-channel integration to customer perceived seamless shopping in the omnichannel environment. The purpose of this framework is thus three-fold. Firstly, we empirically investigate the connection between firm-channel integration and customer perceived seamless shopping. Secondly, we examine seamless shopping as a mediator between channel integration and consumer outcomes of loyalty, customer engagement, brand switching and basket size. Thirdly, we extend on previous research (Cao and Li 2015) by updating previous measures in the current omnichannel environment, which will enable us to provide specific modern-day managerial recommendations. By empirically testing the framework, this research makes important theoretical contributions to the customer experience literature and offers suggestions to managers on how to enhance seamless shopping for their consumers.

3.3 Conceptual Background and Hypotheses

The influence of online and offline retail environments on consumer behavioural responses is significantly grounded in servicescape theory (Bitner 1992 ; Harris and Goode 2010). The two states of retailer environment and consumer response are causally linked, such that the retailer environment causes consumers to respond cognitively, affectively and physiologically. The servicescape perspective identifies that managers continually "plan, build and change" the retail environment to control consumer responses (Bitner 1992 p.57). Building on this, we propose that managers desire to develop the shopping environment across physical channels and touchpoints, to manage seamless customer shopping experiences (Hilken et al. 2017). Subsequently, this theoretical perspective suggests that consumers are influenced by the retail environment to the extent that behaviours can be predicted, allowing retailers to achieve their marketing objectives (Bitner 1992 ; Mari and Poggesi 2013). Grounded in servicescape theory, we propose that a cognitive consumer response, seamless shopping, mediates the framework between retailer channel integration and behavioural responses of loyalty, customer engagement, basket size and brand switching.

3.3.1 Channel Integration

The occurrence of seamless shopping is dependent on the consumer's choice of retailer and the extent to which channel integration is optimized (Cao and Li 2015 ; Hakanen and Jaakkola 2012). Since the evolution of online channels, retailers have provided different ways for consumers to interact on both online and offline channels. With the increased proliferation of channels, retailers have sought to coordinate processes across channels (Neslin et al. 2006). As such, channel integration encompasses the employment of more than one channel (Payne and Frow 2004) and the level at which channels interact with each other (Bendoly et al. 2005). More narrowly, channel integration has been defined as the extent to

which the channels are strategically designed, managed, coordinated and operationalized (Neslin et al. 2006). Channel integration has represented many firm elements as the term has evolved with technological innovations over time (Cao and Li 2015 ; Patrício et al. 2008). The literature has highlighted that channel integration can involve the coordination of logistics (eg. shipping, delivery), IT planning and data (CRM, analytics), supply chain, customer service and communications (Cao and Li 2015 ; Heckmann et al. 2012 ; Oh et al. 2012 ; Saghiri et al. 2017). Channel integration better allows retailers to compete, meet their strategic objectives and improve sales growth (Cao and Li 2015 ; Heckmann et al. 2012 ; Kleinlercher et al. 2018). These advantages are often attained by fulfilling customer demands and expectations, and improving value perceptions (eg. convenience) (Jiang et al. 2015 ; Lee et al. 2019 ; Oh et al. 2012). However, implementing and achieving channel integration has been acknowledged as particularly challenging due to required investment, ongoing resource constraints, a lack of firm capabilities (Cao and Li 2018), matching customer data across systems (Neslin et al. 2006) and organisational shifts required in workforce structure, processes and culture (Heckmann et al. 2012).

Recent channel integration literature in retailing merges around the following key themes; cross-channel integration (Bendoly et al. 2005 ; Cao and Li 2015 ; Herhausen et al. 2015 ; Li et al. 2018 ; Zhang et al. 2010); integration quality (Hossain et al. 2019 ; Lee et al. 2019 ; Shen et al. 2018 ; Sousa and Voss 2006); integration of the marketing mix (Frasquet et al. 2017 ; Lee and Kim 2010) and operational integration (Mirzabeiki and Saghiri 2020 ; Oh et al. 2012). Firstly, much research highlights the evolution of channel integration through multi, cross and omnichannel contexts, and proposes conceptualisations and practical insights on integration activities concerning more than one channel. Zhang et al. (2010) offers insights on channel integration's constituent parts (eg. data management and organisational structure) whilst Cao and Li (2015) demonstrate these elements by establishing a classification of levels

of channel integration. Several authors develop a framework around channel integration by empirically proving that it leads to firm sales growth (Cao and Li 2015), loyalty (Bendoly et al. 2005), customer engagement (Lee et al. 2019), increased shopping value (Huré et al. 2017), purchase intentions (Herhausen et al. 2015) and customer retention (Li et al. 2018). A second theme concerns the integration quality of service content and processes between channels (Hossain et al. 2019 ; Shen et al. 2018 ; Sousa and Voss 2006). This channel integration quality research acknowledges customer insights into task orientation and processes attributed to services across various channels. The third theme of research considers integration of the marketing mix. Frasquet et al. (2017) and Lee and Kim (2010) focus their research on integration of promotion, price and information elements across channels from a customer perspective. This research contributes empirically to the relationship between store and website channels specifically. Lastly, Oh et al. (2012) and Mirzabeiki and Saghiri (2020) focus on conceptualizing channel integration from a firm perspective, including IT, data, information, order fulfilment, transaction and pricing. These papers offer a broader assessment of firm controlled elements that are integrated across channels.

More recently, channel integration has been identified in an omnichannel context which extends the scope of the concept, to include optimisation over all channels and touchpoints. Cao and Li (2015) define channel integration in this context as “the degree to which a firm coordinates the objectives, design, and deployment of its channels to create synergies for the firm and offer particular benefits for its consumers”. Firstly, this identifies integration as a firm controlled set of activities, from which the consumer can respond. For example, the firm provides Wi-Fi in-store so that consumers can quickly find more information on products on their mobiles. Secondly, this suggests cause and effect between firm controlled channel integration and the delivery of beneficial outcomes for the consumer. Thirdly, channel integration contains valance, implying that firms can be more integrated, or

less integrated. This suggests that consumer outcomes of channel integration can be more or less favourable. In contribution to servicescape theory (Bitner 1992), we propose that retailer integration is considered as an environmental dimension that influences seamless shopping as an internal customer response. Therefore, companies striving to integrate their channels will create more efficient shopping environments, prompting customers to perceive their shopping experience as being seamless.

3.1.2 Seamless Shopping

We define seamless shopping as *the customer perception of a continuous and consistent shopping journey across multiple channels with a single retailer*. Further definitions suggest that seamless shopping contains physical connections between 'channels and devices such as a desktop, laptop and mobile devices' (Verhoef et al. 2015 p.176), online and offline (Brynjolfsson et al. 2013) and 'within and across channels' (Banerjee 2014 p.460). Seamless shopping also implies that the connections between channels and touchpoints become blurred so that boundaries become irrelevant (Hansen and Sia 2015 ; Smith and Wheeler 2002). The central theme behind these ideas is that seamless experience is characterized by consistency and continuity within the experience.

The construct of seamless shopping has emerged from the intersection between channel integration and customer experience literature. It is often referred to as the optimum experience in customer experience literature (Grewal et al. 2016 ; Kumar 2018 ; Lemon and Verhoef 2016 ; Steinhoff et al. 2018) whilst it is considered as the consumer response to integrated channels in channel integration literature (Cao and Li 2015 ; Shen et al. 2018). Seamless shopping is also referred to as an aspiration of omnichannel retailing strategy (Kumar et al. 2019 ; Piotrowicz and Cuthbertson 2014 ; Taylor and Levin 2014). In customer experience literature seamless shopping has been predicted to strengthen the experience

(Lemon and Verhoef 2016), whilst in channel integration literature, it is a predicted consumer outcome of connecting channels efficiently (Cao and Li 2015 ; Shen et al. 2018). Several authors suggest that channel integration enables seamless experiences to occur (Banerjee 2014 ; Goersch 2002) and it is often cited as a benefit or objective of integration strategy (Cao and Li 2015 ; Grenha Teixeira et al. 2017 ; Shaw 2004 ; Zhang et al. 2010). The two constructs are therefore likely to be causally linked. Therefore we propose the following hypothesis:

H1: The more retailers integrate their channels, the higher customers evaluate their shopping as seamless.

Several studies have highlighted that consumers are utilizing several channels as they shop (De Keyser et al. 2015 ; Konuş et al. 2008 ; Sands et al. 2016). The general patterns of these studies show that consumer behaviours are changing and that multiple channel shopping is growing due to the sophistication of digitalized channels and integration between channels. Thus investigating seamless shopping in a framework reflects the growing commitment to enhancing the experience in line with diverse technological evolution and corresponding expectations (Piotrowicz and Cuthbertson 2014). The framework complements prior customer experience research related to loyalty (Lemon and Verhoef 2016 ; Verhoef et al. 2009) whilst investigating current concepts that contribute to success in omnichannel retailing; customer engagement (Bell et al. 2014 ; Sopadjieva et al. 2017), avoiding brand switching (Verhoef et al. 2015) and increasing basket size (Stone et al. 2002). For example, seamless shopping captures the cognitive aspect within the experience that underpins our judgements and beliefs about switching amongst channels simultaneously. This contributes heavily to consumers' post-purchase evaluation and desire to commit to active participation or wish to switch to competing brands. Additionally, seamless shopping has the power to shape the way that the

brand is perceived, which creates the intention to return or switch to an alternative retailer. Seamless shopping offers insights into customers' perception of omnichannel retailing environments, which can reflect consumers' associated switching behaviour and ultimately, their loyalty.

3.1.3 Consequences

We propose that seamless shopping is an internal response that leads to behavioural consequences (following Bitner (1992), which strengthens the experience by fulfilling consumer expectations, satisfying experiences and retained shoppers (Lemon and Verhoef 2016 ; Shankar et al. 2011). Furthermore, seamless shopping has been suggested to improve customer engagement, avoid brand switching and increase basket size (Hansen and Sia 2015 ; Stone et al. 2002 ; Wallace et al. 2004). Therefore we expect that seamless experience will almost often lead to better loyalty to the firm, further interaction with the brand, less brand switching and higher basket size. Seamless experience is therefore anticipated to lead to positive and strong behavioural outcomes identified in marketing literature; loyalty, customer engagement, brand switching and basket size.

Loyalty

Loyalty is at the heart of what marketers expect from providing great customer experiences. Loyalty is defined as "the intention to buy from the brand as a primary choice'' (Yoo and Donthu 2001 p.3). As customers move between channels and touchpoints throughout their customer journey, more interactions are formed. Multiple interactions offer more opportunities for consumers to construct an opinion about a brand. When the experience is more consistent and continuous between each stage of the shopping journey (search, purchase and aftersales), this improves convenience, which leads to higher loyalty (Grewal et

al. 2009 ; Lemon and Verhoef 2016). If the customer journey is effortless, allowing consumers to switch simultaneously between channels, this could lead to more customer loyalty to the retailer. We therefore suggest that seamless shopping relates in loyalty to the brand and that seamless shopping explains the relationship between firm-channel integration and customer loyalty.

H2A: Seamless shopping increases customer loyalty.

H2B: Seamless shopping mediates the relationship between firm-channel integration and customer loyalty.

Customer Engagement

As channels and touchpoints have expanded their reach to social media and websites have increasingly become interactive, customer engagement behaviours have formed deeper interactions with brands during the customer journey. Whilst there are divided definitions of customer engagement regarding the nature and level of engagement, most agree that it contains interactions between customer and firm that go beyond purchase (Brodie et al. 2011 ; Jaakkola and Alexander 2014 ; Van Doorn et al. 2010). Specific resource investments in interactions that go beyond purchase have been suggested as time, energy and effort (Alexander et al. 2018). As seamless shopping encompasses the continuity and consistency between channels, this can engender more trust in the brand (Payne and Frow 2004), which in turn should result in higher commitment and motivation (Jaakkola and Alexander 2014 ; Van Doorn et al. 2010). Furthermore, seamless shopping can be perceived as convenient, since consumers avoid shopping problems that exert more time and effort during the experience (Lemon and Verhoef 2016). Less time and effort expended in dealing with shopping problems may promote positive opportunities to engage during the experience or free up time to engage post –purchase (e.g. publish an online review). Furthermore, interaction with shopping

channels has previously been discussed as a connected and engaging experience (Hansen and Sia 2015 ; Kumar 2018). Therefore, we expect a positive relationship between seamless shopping and customer engagement and that seamless shopping mediates the relationship between firm-channel integration and customer engagement.

H3A: Seamless shopping increases customer engagement.

H3B: Seamless shopping mediates the relationship between firm-channel integration and customer engagement.

Brand Switching

Brand switching has been identified as the termination of a relationship with the service provider and switching to an alternative provider (Zeelenberg & Pieters, 2004). As a seamless shopping experience may take place over several channels, shopping problems that inhibit continuity may cause customers to search for a better experience elsewhere. Customer experiences that are repeatedly negative lead to customers disengaging from the brand and searching for other solutions (Zarantonello et al. 2018). Furthermore, cross-channel failures in multichannel retailing prompt customers to switch to another retailer (Wallace et al. 2004). Therefore, as customers move simultaneously amongst channels, a lack of integration may cause a lower perception of seamless shopping, resulting in switching to a competing brand. Customers may also switch brands if certain cross-channel integration initiatives e.g. click and collect are not working. To the contrary, customers who are instantly prevented from continuing the experience because of a channel integration issue may happily continue the experience on other channels or use other services of the retailer, which could be perceived as consistent. Therefore, we hypothesize that;

H4A: Seamless shopping decreases the likelihood of switching to other brands.

H4B: Seamless shopping mediates the relationship between firm-channel integration and brand switching.

Basket Size

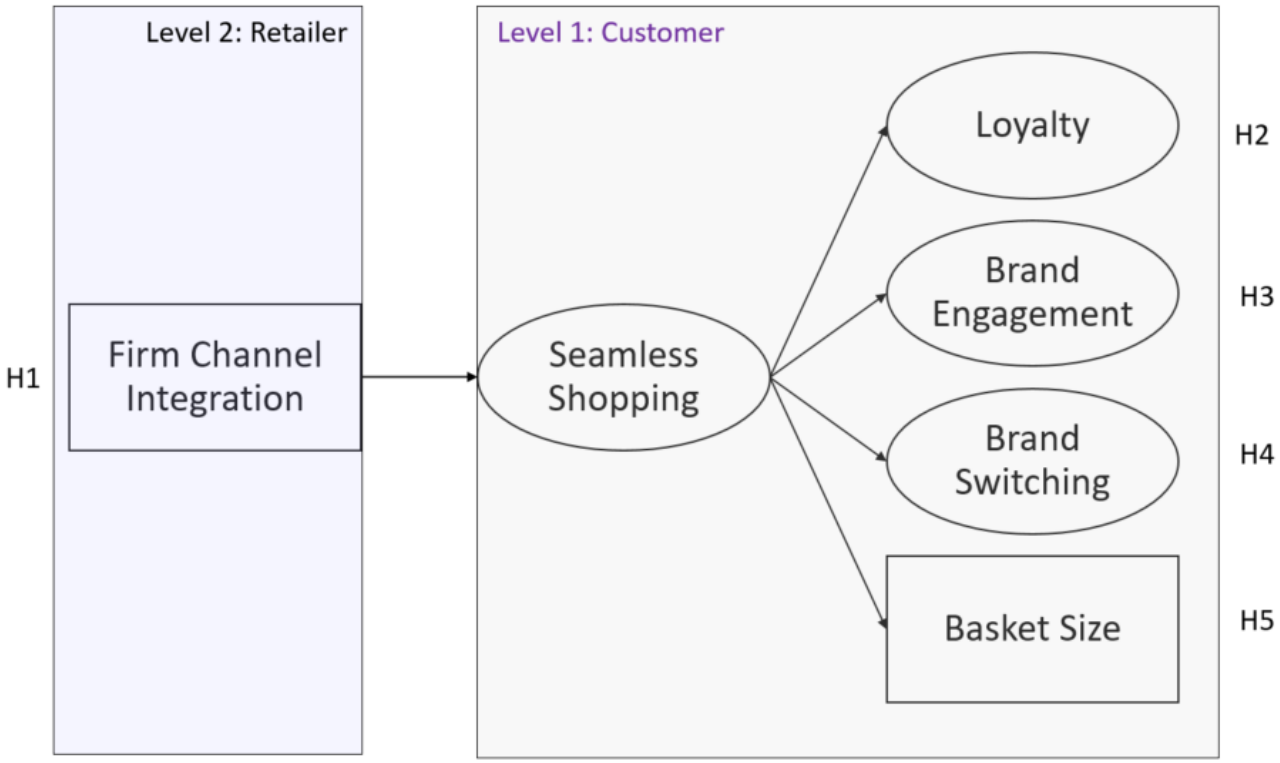
Basket size is defined as the total number of items in the shopping basket (Desai and Talukdar 2003). Mobile shopping allows customers to make quicker purchase decisions by providing customers with easily accessible information 24 hours a day (Fulgoni 2014). When consumers shop across multiple channels, they purchase up to four times more than those shopping in a single channel (Stone et al. 2002). As seamless shopping encompasses switching over several channels, they may find the experience so easy and effortless, that they put more items in their shopping basket. Subsequently, consumers who perceive seamless shopping may unconsciously experience flow during the shopping journey, which is characterized by a loss of self-consciousness and an intrinsic sense of enjoyment (Novak et al. 2000). More flow in the online experience has been found to lead to more impulse purchases (Park et al. 2012). As technology improves the purchase experience, allowing for more cross-channel services and shopping efficiency, consumers who perceive seamless shopping are likely to put more items in their basket. Therefore,

H5A: Seamless shopping increases basket size.

H5B: Seamless shopping mediates the relationship between firm-channel integration and basket size.

Figure 3 displays the hypothesized relationships in a conceptual Framework. Table 3.summarises the relationships between constructs identified in the framework.

Figure 3: Conceptual Framework showing hypothesized relationships



3.4 Methodology

To empirically test the framework, we conducted two studies that establish seamless shopping in a mediated model. Exploring antecedents and outcomes of seamless shopping will enable us to investigate related theories, whilst better predicting the outcomes that manager's desire. To enable us to empirically investigate the framework and provide accurate managerial directions, an updated measure of channel integration (antecedent) is required. Therefore, we assess all known channel integration measures, to construct a new measure. We then observe several retailers in two markets, France and UK, using the measure, which enables us to empirically investigate the framework in both countries. In study 1, we test the link between firm-channel integration and seamless shopping, and seamless shopping on consumer consequences in the French retail industry. In study 2, we confirm the framework

for a second time in the UK retail industry. Both the French and UK retail industries have strong retail economies, and both have experienced continued growth in online and offline retailing in recent years (Carroll 2019). Subsequently, both markets are challenged by online competition, as consumer preferences are shifting towards online shopping but at varying rates, prompting our choice to carry out studies in these two different industries (Carroll 2019).

3.4.1 Measures

We used a combination of measures to empirically investigate the conceptual framework from both a firm and a consumer perspective. For firm-channel integration, we constructed a new measurement tool and observed 30 retailers. To measure the mediator and outcome constructs for each study, we used an online customer survey instrument containing the seamless shopping scale (chapter 2) and existing scales from the literature.

To measure channel integration, we assessed several scales from the literature (Bendoly et al. 2005 ; Cao and Li 2015 ; Frasquet et al. 2017 ; Lee and Kim 2010). We found no single channel integration scale that met the needs of modern-day omnichannel demands. Omnichannel extends the multichannel approach through the appearance of one brand for the customer, irrelevant of the channel (Manser Payne et al. 2017) and customer channel interaction behaviours have adapted to more individualized customer journeys (Barwitz and Maas 2018). We thus develop a new measure (*see section 3.4.2 Assessing channel integration*).

As in chapter 2, we measure seamless shopping using the 7-item developed scale. Although seamless shopping is conceptualised as two dimensions; uninterrupted shopping journey and value harmonization, in this study and in following studies, we combine them into one construct. Evidence suggests that multiple mediators complicate multilevel models, hinder convergence and model specification (Preacher, Zhang and Zyphur, 2010). Indeed, we

found this to be the case in both studies. Instead of choosing one of the dimensions to continue with or running separate analyses for both constructs, we chose to combine the dimensions. This strengthened the likelihood of model convergence and reduced complexity in the model.

To measure consumer outcomes, loyalty was assessed using a 3-item Likert scale adapted from Yoo and Donthu (2001). Customer engagement was measured using a two dimensional 7-item Likert scale (Hollebeek et al. 2014). Brand switching was measured using a 3-item Likert scale adapted from Romani et al. (2012). All items were assessed using a 7-point Likert scale (1 = "strongly disagree" to 7= strongly agree). Finally, basket size was measured based on the number of items purchased during the shopping experience (Nichols et al. 2015). See table 3 for all behavioural items used.

3.4.2 Assessing Channel Integration

We reviewed all known channel integration scales (Bendoly et al. 2005 ; Cao and Li 2015 ; Frasquet et al. 2017 ; Lee and Kim 2010) in the literature. A total of 63 items were reviewed; eight items from Bendoly et al. (2005); 27 items from Cao and Li (2015) organised in four evolutionary levels; 17 items from Frasquet et al. (2017) in two dimensions, reciprocity and coordination; and 19 items from Lee and Kim (2010) in five dimensions; information consistency, freedom in channel selection, email marketing effectiveness, channel reciprocity and appreciation of store-based customer service. Following an initial assessment, we observed several limitations. Firstly, several scales cover various aspects of integration (Bendoly et al. 2005 ; Frasquet et al. 2017 ; Lee and Kim 2010) but fail to outline the degree of integration (Cao and Li 2015) which are considered important to acknowledge since the scales were developed at various stages in the last twenty years. Secondly, due to the pace of evolution in channel integration (Verhoef et al. 2015), scales are likely to become quickly

outdated. To address these limitations, from the review of channel integration literature and current retailing practices e.g. Amazon Go, we created an additional 7 items. These items included integration activities between mobile and store, such as the inclusion of a barcode scanner on an app and integration between online devices such as basket storage across online channels. See Table 3.1 for updated integration items and descriptions.

We added the updated items to the 63 established scale items for a total of 70 items. We then assessed content validity and removed all duplicates, ambiguous or inappropriate items, which totalled 34 items. As we reviewed several retailers' integration from outside the firm, we removed 10 items relating to operations because they could not be objectively measured from outside the firm and have indefinite impacts on the customer experience. For example, 'Integration of merchandise planning system across channel' and 'Integration of database of clients across channels' (Cao and Li 2015) were organizational items relating to internal operations. Eliminating these items allows us to focus on those integration items that directly impact superior customer experience in the omnichannel environment. We removed a further three items because there was little evidence of their existence in one or both of the countries of study. For example, we found no social media advertised in-store in French retailers and Amazon Go technology is not yet available in other retailer stores. The final integration measure features 21 items.

Following Cao and Li (2015), we categorised the items in general stages of channel integration development, as opposed to dimensions. These follow the assumptions of evolution from traditional brick-and-mortar stores to multiple channel retailers in an omnichannel environment. Channel integration enables omnichannel retailing (Saghiri et al. 2017), therefore we focus on stages of evolution that support the strategic development of superior customer experience (Verhoef et al. 2015). These, evolutionary stages towards omnichannel are heavily based on technology adoption as brick-and-mortar stores introduce

online channels, website, mobile app, and centralised customer service activities (Herhausen et al. 2015). Therefore, the following developmental stages categorized in the items are inspired by omnichannel customer journeys; integration between online and offline, where online channels offer information and services that connect store channels; Alignment of fundamental service offerings, such as price, loyalty program and assortment; Online and mobile integration, which integrates elements of shopping between the mobile and website; Offline and online integration where the store channel incorporates the online channel; Online and customer service, which identifies service support in the online channels, and lastly; Offline and mobile integration, which connects the store channel and the mobile.

To establish order, pattern and hierarchy of firm-channel integration, we used a cumulative method called the Guttman scalogram analysis (1944, 1950). This hierarchical approach has been used to identify the order of marketing decision support systems (Wierenga et al. 1994), consumption response (Ganglmair-Wooliscroft and Wooliscroft 2013), customer service (Domegan 1996) and loyalty programs (Bruneau et al. 2018). Initially developed for dichotomous responses, the technique develops a probabilistic approach to increasing levels of difficulty so that a positive response to a more complex item implies also positive results to less complex items. For example, if there are two questions and the second is more difficult than the first, if the respondent answers the more difficult question, it is assumed that they will answer the easier question also.

To construct the scalogram, we observed each retailer (13 French retailers and 17 UK retailers for a total of 30 retailers) using the 21-item channel integration measure. We took the dichotomous data and inserted it in a matrix where the columns represent the integration items and the rows represent the retailers. Each cell within the matrix was completed with 0's or 1's to indicate the retailers' compliance (1) or non-compliance (0) with

Table 3: Constructs related to Seamless Experience

Related Construct	Definition	Relationship to Seamless Experience	Operational Definition	Items
Channel Integration	"The degree to which a firm coordinates the objectives, design, and deployment of its channels to create synergies for the firm and offer particular benefits for its consumers" (Cao and Li 2015).	The occurrence of seamless shopping is dependent on the consumer's choice of retailer and the extent to which channel integration is optimized (Cao and Li 2015 ; Hakanen and Jaakkola 2012).	Cao and Li (2015) developed an extensive channel integration measure that identified 4 levels of channel integration. Other channel integration scales have been developed by Frasquet and Miquel (2017); Lee and Kim (2010); Bendoly et al. (2005).	See Table 3.1
Loyalty	"The consumer's intention to be loyal to a particular retailer as demonstrated by the intention to buy from the retailer as a primary choice'' (Pappu and Quester, 2006)	Companies can manage interactions to create a positive experience that can build customer trust and loyalty. Interactions over several channels allow for better relationships, promoting more opportunities for personalized approaches, leading to loyalty (Seybold and Marshak, 2001).	Brand loyalty is a measure of loyalty to the brand (Yoo and Donthu, 2001) and was later adapted as a retailer loyalty dimension in a retailer equity scale (Papp and Quester, 2006). It discusses the relevance of the retailer to the customer, and refers to loyalty as an outcome. It does not include the movement of shopping across channels or value perception.	XYZ stores would be my preferred choice. (Aaker, 1991) I consider myself loyal to XYZ stores. (Arnett et al., 2003) I will not buy products from other retailers, if I can buy the same item at XYZ stores. (Yoo and Donthu, 2001)
Customer Engagement	"Customer engagement behaviours go beyond transactions and are defined as a customer's behavioural manifestations that have a brand or firm focus, beyond purchase, resulting from motivation drivers." (Van Doorn et al., 2010, p. 254)	Customers are more motivated to enhance their relationship with the firm as a result of seamless and consistent customer experience through engendering trust (Payne and Frow, 2004).	Hollebeek, Glynn and Brodie, (2014) identify an 11 item customer engagement scale in 2 dimensions; Cognitive processing and affection. Other scales to measure customer engagement are Vivek et al (2012) and Kumar and Pansari (2015).	*Cognitive Processing* Using x retailer gets me to think about x retailer. I think about x retailer a lot when I'm using it. Using x retailer stimulates my interest to learn more about x retailer. *Affection Factor* I feel very positive when I use x retailer. Using x retailer makes me happy.

				I feel good when I use x retailer. I'm proud to use x retailer.
Brand Switching	Termination of a relationship with the service provider (Zeelenberg & Pieters, 2004)	Cross-channel failures in multichannel retailing lead to lower satisfaction and prompts customers to switch to another retailer (Wallace et al. 2004). As seamless experiences take place over several channels, shopping problems may lead to channel switching.	Romani et al (2012) identified a 3-item brand switching scale. A 3-item switching intention scale was also developed by Jones and Taylor (2007).	I bought this brand less frequently than before I switched to a competing brand I stopped buying this brand and I will not buy it anymore in the future (Romani et al 2012)
Basket Size	The total number of items put in the shopping basket (Desai and Talukdar, 2003).	Seamless experiences over multiple channels lead to quicker purchase decisions because mobile shopping provides instant access to information (Fulgoni, 2014). Multiple channel consumers purchase up to four times more than those shopping in a single channel (Stone, Hobbs, and Khaleeli, 2002).	Nichols et al. (2015) measured shopping basket by the number of items purchased per shopping trip.	n/a

Table 3.1: Updated Channel Integration Items

Item	Source	Item Description	Sample Evidence
The customer basket/cart is stored across channels.	Morris (2019)	The customer places products in an online shopping cart/basket and it is automatically stored and can be accessed from any device/channel used throughout the experience.	Products in the shopping basket or cart are stored across channels so that the customer can start the shopping journey on any channel and finish on any channel (Morris 2019).
Customer registers presence in-store using their mobile device.	Grewal et al. (2020)	The consumer indicates their presence in-store by using their mobile device. The store recognises them and automatic payment is facilitated at the end of their shopping visit.	Mobile technology connects the consumer to the in-store experience, facilitating unassisted payment. “Amazon Go stores allow consumers to simply pick up items without needing to stop at the check-out (AI and cameras capture the purchase and charge the consumer)” (Grewal et al. 2020, p.97).
Past purchases online can be accessed in the store	Homburg et al. (2017); Payne and Frow (2005)	Consumer purchase history is recorded and can be easily recalled in the store channel either via a customer service assistant or kiosk.	The retailer keeps a "single view on the customer contact history across touchpoints" so that the customer’s purchase history can be quickly recalled (Homburg et al. 2017, p.390).
Dedicated staff coordinate channel integration processes.	Homburg et al. (2017)	A member of staff or a dedicated channel/touchpoint integration team coordinate the organisation of wide streamlined processes across all channels.	Coordination and collection of cross-channel performance indicators is facilitated by a dedicated monitoring team with cross-touchpoint responsibility” (Homburg et al. 2017, p.391).
The website is optimised for the mobile	Wang et al. (2015)	Customers can access the online store through their mobile. This facilitates connectivity between the online channels.	To influence consumer m-shopping, the retailer is required to have a mobile website that provides a user-friendly interface for shopping with the retailer (Wang et al., 2015).
Social media is advertised in-store to promote customer interaction with the retailer's social media.	Piotrowitz and Cuthbertson (2014)	Social media networks are advertised in-store, to encourage customers to interact with social media via their smartphone.	"Customers “bring” into the store their whole social network. Customers can check a product rating, promote a product or service, or contact someone (or a group) to ask a question, but also share in real-time thoughts, opinions, and videos and pictures, as well their satisfaction or dissatisfaction with the store offering of both products or services. Moreover, customers expect direct links from the store to their social network, so that they can comment straightaway and in real-time." (Piotrowitz and Cuthbertson 2014, p.9)
The retailer mobile app facilitates barcode scanning of products in-store.	(Molinillo et al., 2019)	Mobile applications have barcode scanning technology that allow customers to access to product inventory, information and/or reviews.	Providing a barcode scanner on app facilitates connectivity between online (mobile app) and offline (store channel). "The app might allow the consumer to switch between channels, for example by scanning the barcode in the store to buy online through the app" (Molinillo et al., 2019, p.8)

Table 3.2: Integration Measurement Items

Integration Type	Code	Rank order* Study 1 France	Rank order* Study 2 UK	Item	Source
Integration between online and offline	1	1	1	Retailer's online channels provide information about stores such as location, delivery points locations, access information and opening hours	Adapted from Frasquet and Miquel (2017); Lee and Kim (2010); Bendoly et al. (2005)
	2	1	1	Click and pick-up in-store	Cao and Li (2015)
	3	2	3	Buy online and return in-store	Cao and Li (2015)
	4	2	9	Allowing online consumers to browse the inventory in-store	Cao and Li (2015)
	5	6	12	Past purchases in the store can be found online	Frasquet and Miquel (2017)
Alignment	6	1	1	Align marketing message across channel	Cao and Li (2015)
	7	1	1	Align price across channel	Cao and Li (2015)
	8	1	2	Align loyal program across channel	Cao and Li (2015)
	9	2	2	Align assortment across channel	Cao and Li (2015)
	10	1	3	The retailer provides consistent product information across channels	Lee and Kim (2010)
	11	4	6	Align promotion across channel	Cao and Li (2015)
	12	4	7	Integrated marketing communication across channel	Cao and Li (2015)
Integration between online and mobile	13	1	1	The website is optimised for the mobile	New item, inspired by Wang et al (2015)
	14	3	3	The customer basket/cart online is accessible in the app or mobile website	New item, inspired by Close and Kukar-Kinney (2018)
Integration between offline and online	15	3	4	Employees at the firm's stores are knowledgeable and helpful regarding the use of its Website	Bendoly et al. (2005)
	16	3	5	The physical store allows for checking product availability online via a kiosk/mobile or customer service representative.	Lee and Kim (2010)
	17	5	7	(Retailer's) physical store allows me to do an order online	Frasquet and Miquel (2017)
	18	7	2	The firm advertises its website at its local stores	Bendoly et al. (2005)
	19	5	11	Past purchases online can be accessed in the store	New item, inspired by Homburg et al. (2017)
Integration between online and customer-service	20	7	8	Click-to-call or click-to-chat	Cao and Li (2015)
Integration between offline and mobile	21	8	10	The firm advertises its mobile app at its local stores	Based on Bendoly et al. (2005)

*All items were ranked according to their Guttman score in each study. A 1 represents the highest rank (All 30 retailers complied with the item) and 12 represents the lowest rank (low compliance). As the numbers of retailers were different for both countries/studies, the original Guttman rank score was uneven. This rank order was applied to enable comparison between country retailers/studies.

Table 3.3: Guttman Scalogram of French Retailers (Study 1)

Integration Item:	Retailer: Armand Thiery	Jennyfer	La Halle	Promod	H & M	Pimkie	Lacoste	Naf Naf	Mango	Etam	ZARA	Bershka	Kiabi	Pattern:
1	1	1	1	1	1	1	1	1	1	1	1	1	1	13
2	1	1	1	1	1	1	1	1	1	1	1	1	1	13
6	1	1	1	1	1	1	1	1	1	1	1	1	1	13
7	1	1	1	1	1	1	1	1	1	1	1	1	1	13
8	1	1	1	1	1	1	1	1	1	1	1	1	1	13
10	1	1	1	1	1	1	1	1	1	1	1	1	1	13
13	1	1	1	1	1	1	1	1	1	1	1	1	1	13
3	**1**	1	1	1	1	1	1	**0**	1	1	1	1	1	12
4	**1**	**0**	1	1	1	1	1	1	1	1	1	1	1	12
9	**1**	1	**0**	1	1	1	1	1	1	1	1	1	1	12
16	0	**1**	**0**	1	1	1	1	1	1	1	1	1	1	11
19	0	0	1	1	1	1	1	1	1	1	1	1	1	11
14	0	**1**	1	**0**	1	1	1	1	1	1	1	1	1	11
12	**1**	**1**	0	1	1	1	1	1	**0**	1	1	**0**	1	10
11	**1**	0	0	1	**0**	1	1	1	1	1	1	1	1	10
18	0	0	**1**	**1**	0	**0**	1	1	1	1	1	1	1	9
17	0	0	**1**	**1**	0	**0**	1	1	1	1	1	1	1	9
20	0	0	0	1	0	0	1	1	1	1	1	1	1	8
15	0	0	0	0	**1**	0	0	0	0	**0**	1	1	1	4
21	0	0	0	0	0	**1**	0	0	0	1	**0**	1	1	4
5	0	0	0	0	**1**	0	0	0	0	0	0	**0**	1	2
Score:	**12**	**12**	**13**	**17**	**16**	**16**	**18**	**17**	**17**	**19**	**19**	**19**	**21**	

Notes: All 1's signify compliance with the channel integration item whilst 0's signify non-compliance. Numbers that not fit the pattern are considered as errors and are shown in bold. Reproducibility coefficient = 1 – (Total number of errors/total number of responses): 1-(26/273) = 0.905

Table 3.4: Guttman Scalogram of UK Retailers (Study 2)

	Retailer:																	
Integra-tion Item:	**TK Maxx**	**Asda**	**Tesco**	**Matalan**	**Sports Direct**	**Debenhams**	**JD Sports**	**Topshop**	**Marks &Spencer**	**H&M**	**Next**	**Smyths**	**Zara**	**New Look**	**CurrysPCworld**	**John Lewis**	**Argos**	**Pattern:**
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
8	**1**	**0**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16
9	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16
15	**1**	1	**0**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16
3	**1**	0	1	1	**0**	1	1	1	1	1	1	1	1	1	1	1	1	15
10	0	**1**	1	1	**0**	1	1	1	1	1	1	1	1	1	1	1	1	15
14	0	**1**	1	1	1	1	**0**	1	1	1	1	1	1	1	1	1	1	15
16	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
19	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13
11	0	0	**1**	0	0	**0**	1	1	1	1	1	1	1	1	1	1	1	12
12	0	0	0	0	**1**	0	**1**	1	1	**0**	1	1	1	1	**0**	1	1	10
18	0	0	0	0	0	**1**	0	**0**	1	1	1	1	1	1	1	1	1	10
20	0	0	0	0	0	**1**	0	0	1	1	1	1	**0**	1	1	1	1	9
4	0	0	0	0	0	0	0	0	**1**	**0**	1	1	1	1	1	1	1	8
21	0	0	0	0	**1**	0	**1**	0	0	**1**	0	**0**	1	**0**	1	**0**	1	6
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Score:	8	9	11	12	13	15	15	15	18	17	18	18	18	18	19	20	21	

Notes: All 1's signify compliance with the channel integration item whilst 0's signify non-compliance. Numbers that not fit the pattern are considered as errors and are shown in bold. Reproducibility coefficient = 1 – (Total number of errors/total number of responses): 1-(28/357) = 0.922

each item. For example, if the retailer has 'aligned price across channels' then that retailer scored '1'. Using the same item, if a retailer had different prices on their website to that in-store, then that retailer scored '0'. Each retailer (rows) and each item (column) is then assigned a composite score. The row composite scores are then ranked in descending order and the columns' composite scores are ranked in ascending order. The hierarchy then emerges from the matrix identifying positive values on the right and zero values on the left, assigning ranking from top (higher integration) to bottom (lower integration). When more positive values feature to the left (lower integration), they are more likely to have positive values to the right (higher integration). The Guttman scalogram uses a probabilistic perspective and so a perfect result is unlikely. We therefore produce a reproducibility coefficient (Guttman, 1950) where we calculate the number of erroneous data that does not fit the pattern. The reproducibility coefficient of the patterns were .91 for study 1 and .92 for study 2, which are higher than the .9 recommended level (Guttman, 1950). Table 3.1 provides an index of firm-channel integration items, table 3.3 shows the Guttman scalogram for French retailers (Study 1) and table 3.4 shows the Guttman scalogram for UK retailers (Study 2).

3.4.3 Assessing Consumer Perceptions

The first consumer survey was carried out with French respondents (n=346, 31.9% female, average age: 35). To ensure semantic equivalence, items were translated and back-translated by several French and UK faculty members. Study 2 was carried out with UK retailers and consumers (n=344, 67.7% female, average age:37). Full demographic information for each study can be found in appendix table 3.6.

In each study, respondents were asked to recall a recent shopping experience that occurred within the last three months, to verify an accurate response. To ensure that the conditions were met for a seamless shopping experience, we asked respondents to recall a shopping

experience where they had used two or more channels. To verify the number of channels, we asked them to indicate the channels that they used during their experience at each phase of the shopping journey. Respondents identified which channels they used for the search, purchase and post-purchase. The channels specified all main channels used in omnichannel retailing, which were internet, telephone; mobile phone; smartphone, app, tablet, store or in-store interactive kiosk/tablet. Study 1 consumers were asked to rate their experiences based on the apparel product category, indicating shopping journeys with apparel retailers. In study 2, we extended product categories and retailers to a wider range to ensure that the research was relevant across a broad range of omnichannel retailers. UK Respondents were asked to rate their experiences based on the top omnichannel cited product categories (Saleh 2016), which were; consumer electronics, clothing/apparel, toys, home appliances, automotive and home improvements. In each study, we asked respondents to specify the retailer with which they had had their shopping experience.

In both studies, we imposed a pre-defined list based on the top-20 multiple-channel retailers by turnover. Following clarification of their recalled shopping experience, respondents were asked to rate the seamless shopping scale and outcomes. An instructional check was included to ensure that the participants read the items carefully. All consumer studies were carried out using reputable data collection agencies.

3.4.4 Cross-National Invariance

As several scales were tested using UK and French consumer samples, we assessed cross-validation across multiple groups using a standardized procedure (Baumgartner and Steenkamp 1998 ; Hair et al. 2010). As both studies were carried out to measure the same constructs, measuring invariance will determine whether the measurement of constructs are actually measuring the same attribute whilst under different conditions (Baumgartner and Steenkamp 1998). To enhance the validity of this research, we assess whether the measure

meets configural, metric, scalar and strict measurement invariance requirements. Configural, metric, scalar invariance of equal residuals produced identical results ($\chi 2$ =940.478 (111), RMSEA = .104, CFI = .871, TLI = 0.842). We then tested for strict invariance including factor means and this resulted in a significant increase in fit ($\chi 2$ =1514.814 (111), RMSEA = .116, CFI = .802, TLI = 0.799). The results therefore indicate that strict invariance at the equal residuals is supported for all constructs in both French and UK consumer samples.

3.5 Analysis and Results

3.5.1 Channel Integration Rank Test

An independent samples Wilcoxon Mann-Whitney (WMW) test was used to compare the level of integration and validate the measurement of integration between country retailers. The WMW test is a non-parametric test that is used to assess a null hypothesis, stipulating that the two samples belong to the same population. Therefore, the test assumes that the distribution in the two samples are similar (H_0). The levels of channel integration are identified in two samples: the 17 UK levels of integration in one sample, and the 13 French retailer levels of integration in the other. As the number of retailers were different for each country, the items were rank ordered a second time to enable comparison between studies. Retailers that scored a 17 or 13 on the Guttman rank order were re-ranked as 1, those that scored 16 and 12 were ranked 2 and so on. A table of the rankings for comparison are identified in table 3.2. We employed the WMW test, using SPSS, to compare these samples, which used the new rank order. The findings indicated that the level of integration amongst retailers is ranked slightly higher in France (22.55) compared to the UK (20.45). However, the insignificant result ($p > .05$) means that we do not reject the null hypothesis. This signifies

that the samples do not show differences in levels of integration between the UK and French samples, meaning that the two countries are similarly integrated.

3.5.2 Channel Integration Comparison between countries

By carrying out the Guttman scalogram technique in both the French and UK markets, we found that both sets of country retailers followed similar patterns, although there were some differences. Generally, both country scalograms followed similar patterns of integration, from most retailers having established the integration initiative to the least amount of retailers likely to have established the integration initiative. First, retailers generally integrate their brick-and-mortar store into their website, by advertising the store location, opening hours and delivery points. Next, retailers start integrating the website into their brick-and-mortar store by ensuring that employees are knowledgeable and helpful about the website and can order products for customers online. At the same time, retailers integrate their marketing communications, align promotions across channels and integrate customer service into the website by offering click-to-call or click-to-chat. A table of all items, categories and rank order can be found in table 3.2.

These results duplicate and extend the work of Cao and Li (2015). Firstly, the top two levels of integration in our study are the integration between online and offline followed by alignment. These two levels parallel level 3 (moderate multichannel) and level 4 (Alignment of fundamentals) in the measure of Cao and Li (2015). The next categories extend upon the results of the previous study by offering further levels of integration; mobile integration in the online channel (shared basket), integration between offline and online (e.g. advertising the website in-store), online and customer service (e.g. click-to-chat) and lastly, the mobile in the store channel (e.g. advertising the app in-store). This updated classification demonstrates the evolution from cross-channel (Cao and Li, 2015) to omnichannel.

When we compared retailers on an item-by-item basis between UK and France, all retailers studied aligned their marketing messages, price and loyalty program across channels. All retailers also had an optimised website for the mobile. Almost all retailers integrated their online offerings into their store channels by offering click-and-collect and click-and-return in-store. Almost all French retailers and around half of UK retailers aligned their marketing messages and promotions across channels. Surprisingly, only half of retailers in both countries enabled online orders from the store, some retailers even stating that there was little join up between stores and their website. Few retailers in both countries made customer service click-to-chat available via the website, with many relying on the social networking site, Facebook, to answer customer queries. Lastly, few retailers advertised the use of the mobile app in-store.

On average, French retailers were more integrated than UK retailers. Whilst two out of UK 17 retailers scored 20 and 21 out of the possible 21 integration items, there was a wider spread of levels of integration, with the lowest retailer scoring eight. In France, integration levels spanned 12 to 21 out of the possible 21 integration items, with one out of the 13 retailers scoring 21.

The biggest differences between countries were the online access to in-store inventory. On most French retailer websites, it is possible to browse the inventory in-store and customers can reserve items free of charge. Less than half of the UK retailers studied enable customers to check the inventory in stores or reserve items. There is slower adoption of online shopping in France than neighbouring countries (Statista 2013 ; Statista 2019) and this suggests that French retail stores have a larger part to play in the customer journey than with UK retailers. Perhaps this could explain the greater requirement for in-store inventory systems on the website, which enable customers searching online to more seamlessly connect their shopping journey in-store by avoiding unnecessary travel to the store if a product is not in stock

(Mirzabeiki and Saghiri 2020). Other differences between countries concern the recall of past purchase history in-store and online. French retailers are more likely to keep a record of past-purchase history online and in-store so that customers can check previous purchases, which enabled them to make future decisions e.g. to buy another colour, size to discuss any problems about products without the need for a receipt. Lastly, UK retailers advertise the website in-store more-so than French retailers. Perhaps this can be explained by the higher level of e-commerce in the UK compared to France (Statista 2019). This evidence suggests that online retail is more established in the UK and this would explain the heightened requirement to advertise the website in-store.

3.5.3 Multilevel Model

We used Multilevel modelling (MLM) to test the hypotheses. Since our data encounters an observed predictor variable (firm-channel integration) and perceived dependent variables as rated by customers of the firm, the MLM method allows for the nested structure within the data. This overcomes homogeneity of regression slopes as found in traditional SEM, and allows for variability in regression slopes. Thus, MLM accounts for differences amongst retailers and allows the data at both the customer and retailer levels to be considered simultaneously, whilst also allowing for interactions (cross-level) to be calculated between the levels. Furthermore, this approach more accurately estimates the standard errors, significance levels and confidence intervals than traditional structural equation modelling because MLM considers the bias of standard errors that result from independent observations common in the data (Field 2017). Ignoring the nested structure of the data would lead to misspecification of the model and standard error bias (Hox 2010). By using MLM, we can test the hypotheses by examining the indirect effects at both the retailer and customer levels. All hypotheses that

contain ‘A’ are focused on the relationships at the individual level, whilst all hypotheses that contain ‘B’ are focused at both the retailer and customer level.

We first undertook several procedures to examine the reliability and validity of the customer scales. First, we used exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to investigate the structure and variance for each data set. EFA and CFA revealed that each construct loaded onto its own factor and explained 66% for study 1 and 69% for study 2. The studies provided adequate model fit (Study 1; $\chi 2$ =508.399 (142), RMSEA = .066, CFI = .918, TLI = 0.907 and study 2; $\chi 2$ =568.281 (202), RMSEA = .073, CFI = .922, TLI = 0.911). The Cronbach’s alpha was calculated for each construct and ranged from .743 to .920 throughout all studies. In support of convergent validity, all CR’s were above the .7 threshold, and the AVE’s were above .5 (Fornell and Larcker 1981). To confirm discriminant validity, all AVE’s were found to be higher than the squared correlation between each pair of constructs (Fornell and Larcker 1981). To test common method variance, for each study, all items were loaded onto a single factor. In each study, all one-factor models provided a significantly worse fit than the structured model. The proportions of variance in the single factor models were also much lower than the structured models (study 1: 47.74%, and study 2: 43.63%). All results for reliability and validity for each study can be found in appendix table 3.7.

To examine the requirements for MLM, we tested the hierarchical structure of the data (consumers nested within retailers) by analysing the variance at the customer level. We estimated a baseline model, which contained no predictor variables for each study, to determine variability that is different from zero amongst consumers. To test for variance amongst groups, we carried out and an intraclass correlation test (ICC) (Duncan et al. 1997) and design effects calculations (DEFF) (Kish 1995) which are calculated as follows:

$$ICC = \sigma^2_B / \sigma^2_B + \sigma^2_w$$

where σ^2_B is the variance between groups and σ^2_w is the variance within groups.

DEFT = 1 + (c – 1) * ICC

Where c = average cluster size.

We found that variability amongst groups (ICC) was 8% in Study 1 to 6% in study 2. This indicates that up to 8% of the differences in customer perceptions could be attributed to retailer differences. The DEFT scores were 2.16 for study 1 and 1.2 for study 2. As these results were significantly different from zero ($p < .05$) (Swoboda et al. 2016), we therefore proceeded to carry out multilevel modelling on this data set.

MLM analysis procedures took place in a step-wise manner. In both studies, we initially carried out a baseline model, which contained only customer-level constructs. In the second step, the predictor variable integration was added. The third step included random intercepts only and the fourth step included random intercepts, slopes and cross-level variances. To test the hypotheses, we used the random intercept and random slopes models, containing cross-level interactions. The mediating variable, seamless shopping, was grand-mean centred, which allows us to investigate the within and between-group indirect effects (Krull and MacKinnon 2001 ; Tofighi and Thoemmes 2014).

3.5.4 Results

In this framework, we used a 2-1-1 MLM, where the '2' represents the higher level and '1' represents the lower level effects. The levels of each of the X (representing firm-channel integration, M (representing the mediator, seamless shopping) and Y variables (outcomes) dictate the within and between effects that can be measured and interpreted (Zhang et al. 2010). Within effects are those that happen within the groups, i.e differences in individual customer responses. 'Between' are the effects that take place between the groups, i.e differences between the groups. The relationship between the X and M variables means

that the traditional mediation 'path *a'* in our model takes place from level 2 (X) to level 1 (M) (Baron and Kenny 1986 ; Zhang et al. 2008). Therefore, we are only able to hypothesize, measure and interpret the between-group effects for path *a* in our model due to problems with conflated effects (Zhang et al. 2008).

In contrast to the *a* path, the *b* path occurring between M and Y in our model (All 'A' hypotheses) takes place at the individual customer level (the 1-1 part of the 2-1-1 model), therefore we measure and interpret the 'within' effects only. Next, we discuss the results of all studies in two sections; direct and indirect effects[2]. Table 3.5 contains the results of each hypothesis.

Direct Effects

Regarding the direct effects of firm-channel integration on seamless shopping, the effect was positive and significant; study 1: β =.15, $p < 0.05$ and study 2: β =.12 $p < 0.05$. Therefore, there is strong support for H1 in all studies. Firm-channel integration is positively related to consumer perceived seamless shopping. In support of H2A, positive and significant relationships were found between seamless shopping and loyalty (Study 1: β =.24, $p < .01$, Study 2: β =.30, $p < .001$). Results thus show that seamless shopping is a good predictor of loyalty.

In support of H3A, positive and significant relationships were found between seamless shopping and both customer engagement dimensions. For the cognitive dimension, Study 1: β =.23, $p < .05$, Study 2: β =.26, $p < .001$. For the affection dimension, Study 1: β =.35, $p < .001$, and in Study 2: β =.45, $p < .001$). Therefore, we find evidence to support that seamless shopping leads to customer engagement.

[2] We also investigated total effects, but found no significant results. Therefore, we do not report them.

Table 3.5: Multilevel Modelling Summary

						Study 1		Study 2	
Hypothesis	**Relationship**					***β***	**P-value**	***β***	**P-value**
H1	Integration	>	Seamless Shopping			.150*	.021	.118*	.015
H2A	Seamless Shopping	>	Loyalty			.241**	.009	.295***	.000
H3A	Seamless Shopping	>	Customer engagement (cognitive)			.345***	.000	.261***	.000
H3A	Seamless Shopping	>	Customer engagement (affective)			.345***	.000	.450***	.000
H4A	Seamless Shopping	>	Brand Switching			-.116	.115	-.382***	.000
H5A	Seamless Shopping	>	Basket Size			.373**	.002	.177*	.054
H2B	Integration	>	Loyalty			.030	.734	-.030	.627
H3B	Integration	>	Customer engagement (cognitive)			.044	.691	-.010	.863
H3B	Integration	>	Customer engagement (affective)			.044	.691	-.054	.428
H4B	Integration		Brand Switching			-.063	.374	.033	.454
H5B	Integration	>	Basket Size			-.089	.412	.088	.174
H2B	Integration	>	Seamless Shopping	>	Loyalty	.049*	.042	.035*	.030
H3B	Integration	>	Seamless Shopping	>	Customer engagement (cognitive)	.048*	.043	.031*	.034
H3B	Integration	>	Seamless Shopping	>	Customer engagement (affective)	.064*	.034	.053*	.021
H4B	Integration	>	Seamless Shopping	>	Brand Switching	-.022	.137	-.044*	.025
H5B	Integration	>	Seamless Shopping	>	Basket Size	.072*	.050	.021	.135

Notes: Test of significance: * $p < .05$ **, $p < .01$ ***, $p < .001$.

Negative significant indicators were found between seamless shopping and brand switching in both studies. For Study 1: β = -.12, p = .115 and in Study 2: β = -.38, p < .001. H4A is therefore supported in the UK study but not in the French study. This suggests that French consumers may be more loyal to retailers, even if channel integration is low. Lastly, in support of H5A, a positive and significant relationship was found between seamless shopping and basket size for Study 1: β =.37, p < .005 and for study 2, β =.18, p = .05. Therefore, H5A is supported. We find evidence that seamless shopping leads to basket size.

Indirect Effects

In addition to the direct effects, we investigated indirect effects. The direct paths from seamless shopping to loyalty are positive and significant whilst the direct paths between firm-channel integration and loyalty are not significant. In both studies, the indirect path between firm-channel integration and loyalty, mediated by seamless shopping is significant (study 1: β =.05, p < .05, study 2: β =.04, p < .05). We thus conclude that H2B is supported. Therefore, seamless shopping fully mediates the relationship between firm-channel integration and loyalty.

Indirect effects between firm-channel integration and customer engagement via seamless shopping are both positive and significant. This indirect effect is supported in both dimensions, cognitive and affection, in both study 1 and 2. For the cognitive dimension, in Study 1: β =.05, p < .05 and Study 2: β =.03, p < .05. For the affective dimension, in Study 1: β =.06, p < .05 and Study 2: β =.05, p < .05. As the direct paths between channel integration and both customer engagement dimensions are not significant, H3B is supported. Seamless shopping fully mediates the relationship between firm-channel integration and customer engagement.

The indirect effect between integration and brand switching, mediated by seamless shopping is not significant in study 1 (β = -.02, p = ns) but is significant in study 2 (β = -.04, p < .05). As the

direct paths are not significant, we thus conclude that only in study 2, H4B is supported. Seamless shopping fully mediates the relationship between firm-channel integration and brand switching for the UK population only. Lastly, the direct path between firm-channel integration and basket size is not significant (Study 1: β =.09, p = ns , Study 2: β =.09, p = ns), whilst the indirect effect is significant in study 1 (β =.07, p < .05) but not significant in study 2 (β =.02, p = ns). H5B is supported in study 1 but not in study 2. Therefore seamless shopping mediates the relationship between channel integration and basket size with the French population, but not with the UK population.

3.6 Discussion

In recent times, digitalization has provided both retailers and customers with opportunities to search, purchase and receive products across any choice of channel. This has created expansive competition amongst retailers, and considerable challenges in integrating their experiences across channels (Grewal et al. 2009). This competition has raised important questions regarding successful retail strategy. A deeper understanding of seamless shopping can be a key differentiator for developing fruitful and long-term relationships. This paper develops a framework around seamless shopping, and makes original theoretical contributions and suggestions for managers, as discussed below.

Theoretical Implications

This research aims to extend knowledge of the chain of events from channel integration to seamless shopping and behavioural outcomes, which is central to omnichannel retailing strategies. Based on servicescape theory (Bitner 1992), we developed hypotheses on main and mediating effects, and tested them with data from two different retail settings, adding to the generalizability of results. Our analysis confirmed that in two separate country

studies, channel integration leads to seamless shopping, and seamless shopping leads to loyalty, customer engagement, and a higher basket size. Solely found in UK consumers, seamless shopping also leads to a lower likelihood of switching brands. In almost all cases, our findings reveal that seamless shopping mediates the relationship between firm-channel integration and these behavioural outcomes, showing the important role that seamless shopping plays in omnichannel retailing. Responding to calls for more research leading to seamless purchases (Lemon and Verhoef 2016), these results are particularly notable, and we discuss associated conclusions in further detail.

Firstly, this study adds to the body of knowledge regarding the behavioural outcomes of seamless shopping. When seamless shopping is achieved, this creates desirable behavioural outcomes of loyalty, customer engagement, avoidance of brand switching and higher basket size. These results are important because the literature lacks a solid understanding of seamless shopping and the role that it plays in omnichannel retailing. The results also reinforce the importance of achieving seamless shopping, since the attainment of other established consumer behaviours in research may rely on it. Moreover, our research also provides clarification of the central role that seamless shopping plays in contribution to omnichannel retailing literature. Our developed framework provides an appropriate omnichannel model structure that extends previous multichannel findings. Although multichannel integration has been found to lead to loyalty directly (Bendoly et al. 2005) our study shows that consumers process the information across channels by evaluating seamless shopping, and this cognitive evaluation drives loyalty. This brings forth the literature from a multichannel context to an omnichannel context, by highlighting the necessity for seamless shopping in strengthening beneficial customer behaviours (Lemon and Verhoef 2016 ; Shankar et al. 2011). Our research also alleviates confusions posed by channel integration quality research, by showing the distinct differences between firm controlled channel integration and the internal consumer

process of seamless shopping, which is an internal customer response. We reinforce this distinct divide by employing a two-level multilevel design. Thus, this research is the first of its kind to provide empirical evidence of the causal relationships between channel integration, seamless shopping and behavioural outcomes.

Secondly, this research empirically confirms the relationship between channel integration and seamless shopping. Although the link between channel integration and seamless shopping has been suggested in the literature (Bendoly et al. 2005 ; Cao and Li 2015), we find that a strong omnichannel retailing strategy anchored in channel integration efforts is pivotal to achieving seamless shopping. Considering the challenges outlined in previous channel integration research, we sought to enhance the literature by empirically testing this relationship. Our results empirically explain this relationship using a rigorously tested valid and reliable seamless shopping scale. The relationship was confirmed using two sets of retailers and their customers in two different populations, which considerably strengthens this conclusion for both marketing scholars and retailers alike. Furthermore, the hierarchical data structure considering the two levels at which retailers and their customers function, allowed for testing effects of slopes and intercepts between retailers, which assists understanding of this impactful relationship. Despite differences between product categories researched, the channel integration-seamless shopping relationship was similar and equally significant in both countries. We call for more hierarchical regression approaches, which can be a more robust method of studying consumer outcomes relating directly to retailer processes. Studies that encompass both customer and retailer levels acknowledge differences in retailers that may vary in demographic and cultural setting, which in turn, may influence customer perceptions. Thus, our findings are generalizable across retailer settings. Based on our results, we conclude that channel integration research in omnichannel retailing plays a vital and valuable role in influencing seamless shopping.

Thirdly, this study extends pivotal research in the channel integration field by updating existing measures into the omnichannel environment (Cao and Li 2015 ; Herhausen et al. 2015 ; Neslin et al. 2006 ; Verhoef et al. 2015). Whilst recent research focuses on the importance of touchpoints during the customer journey (Herhausen et al. 2019 ; Homburg et al. 2017 ; Kuehnl et al. 2019), many retailers are still struggling at a basic and physical level to connect channels (Herhausen et al. 2015). This research attempts to acknowledge all channels and touchpoints found in the omnichannel environment, by updating and adapting existing measures into a 21-item channel integration measurement tool. For instance, the measure extends knowledge in channel integration literature by adding additional innovations in the mobile channel such as providing an optimised mobile website, access to in-store inventory and enabling continuous basket storage across online channels. These updates also acknowledge several emerging research fields such as mobile shopping (Ailawadi and Farris 2017 ; Verhoef et al. 2015) and customer journey research (Herhausen et al. 2015 ; Herhausen et al. 2019 ; Kuehnl et al. 2019). Ultimately, our results show that implementing this comprehensive set of integration activities, is likely to improve seamless shopping. Furthermore, we updated the classification of channel integration measurement index, which builds on the index of Cao and Li (2015). The new categories represent developments between online and mobile, offline and online, online and customer service and offline and mobile. Our results therefore demonstrate an evolution from cross-channel (Cao and Li, 2015) to omnichannel.

3.6.2 Managerial Implications

This research has direct and practical relevance for all retailers carrying out omnichannel strategies. Firstly, although the link between omnichannel retailing, channel integration and seamless shopping is connected in business, little empirical evidence of this relationship exists in theory and research. In two international studies, across an array of omnichannel retailers, and using data at both the retailer and consumer levels, we provide strong evidence to support the important relationship between firm-channel integration and seamless shopping customer perceptions. More integrated channels result in more seamless shopping, whilst less integrated retailers are likely to achieve lower seamless shopping. This result provides further evidence for managers to encourage directors or funders to invest in channel integration activities, to enhance their seamless shopping strategic objectives.

Firstly, omnichannel retailers should integrate channels to achieve seamless shopping. Since multiple channel retailers have traditionally been found to lag behind their online competitors (Cao and Li 2015), the 21-item firm-channel integration measurement tool serves as a checklist to help retailers compete against online retailers and assist them in reaching their seamless shopping goals. The scalograms show several areas where retailers can improve. Retailers are encouraged revaluate their data systems and consider keeping customer past purchase data to allow them to quickly deal with queries or problems across channels should they arise. This will enable retailers to better support customers and quickly overcome obstacles, which will improve seamless shopping. Whilst some retailers record purchases via the loyalty card or store (credit) card, not all customers have access to this. Although all retailers were found to have optimised websites, not all websites and apps kept searched items in the basket when moving between the online channels. As customers now use several channels to shop, keeping an updated basket between channels allows customers to continue their journey where they left off, and saves them time searching for items again. Although many firms had mobile apps, often with helpful barcode scanners or an in-store mode, there

was little advertising of apps in-store. Making customers aware of the mobile app can enhance the in-store experience and help customers to find items without having to wait for customer service assistants. Lastly, allowing customers to access customer service in real-time via the website (click-to-chat) can allow customers to seek help directly when they need it. This avoids waiting for responses, and delays in the experience. By integrating channels in these ways, retailers can enhance their seamless shopping experience.

Secondly, following analysis of both French and UK retailers, we find continuing evidence that retailers are failing to align prices and promotions, which forms some of the basic levels of integration in our research. For example, Gap stores and gap.eu, and Sephora.fr and Sephora in France operate different price and promotion strategies. A Chanel perfume on Sephora.fr costs 96€, where the same perfume in the Sephora store costs 128€.[3] Despite claims regarding Sephora's success in omnichannel retailing, and providing a seamless experience (Magaud 2019), over a 30€ difference and a 33% increase in price from one channel to another calls into question whether the brand is operating as one brand for the customer. This leads to a poor seamless shopping experience. We conclude that managers operating under the same brand, should consider basic channel integration efforts such as price, promotion and assortment that promote continuity of the experience across channels. Brands failing to operate basic channel integration activities that promote seamless shopping perceptions are likely to fall behind the competition, given current shopping behaviours across channels (Piotrowicz and Cuthbertson 2014).

Our research also opens up opportunities in channel integration that retailers can exploit to achieve seamless shopping. Several categories of integration showed evidence of low compliance. Firstly, whilst integration of store into the online channels was strong, online integration into the store channel was low. Whilst it may seem obvious that all retailers have

[3] Comparison was made on a Chanel Coco Madmoiselle eau de parfum 100ml on 10/11/2019, using Sephora.fr and Sephora store, grand place, Lille.

online channels, promoting online access to the retailer in-store may create brand stimulus and remind customers to continue their purchase online or search or purchase online during their next customer journey. Offering ways to pay online whilst in-store such as providing a kiosk or enabling online orders for home delivery may enhance customer choice and convenience during the customer journey. New categories also appear to be emerging between online and customer service, and store and mobile. Retailer investment in customer service online and better advertising of the mobile in-store opens new avenues to get ahead of the competition and strengthen seamless shopping.

Failing to understand the relationship between firm-channel integration and seamless shopping potentially jeopardizes consumer loyalty, brand switching, brand engagement and basket size. However, French customers appear to be more loyal than UK customers as they are less likely to switch channels when seamless shopping is low. Brand image and engagement may thus be more important in France. Generally, our results are very encouraging for the achievement of positive outcomes following seamless shopping. The results of this study provide further encouragement that the seamless shopping objective is successful and prosperous as a strategic aim. Managers and marketers can use the seamless shopping scale to help predict these desirable outcomes and in turn, optimize their channel integration strategies. Since channel integration activities do not directly result in these desirable outcomes, the seamless shopping construct suggests a more optimized experience measure that can be used to improve loyalty, customer engagement, avoid brand switching and increase customer basket size.

3.6.3 Limitations and Future Research

Whist the results are fairly stable across countries and retailers, there are some undiscovered challenges that warrant investigation, which extends beyond the scope of this research. Firstly, repeated country studies would assist the managerial outcomes with regards to brand switching as these results were not consistent across studies. Whilst there was some evidence of seamless shopping resulting in fewer intentions to switch brands, further studies would help confirm or disconfirm this outcome. This information could be useful to managers who are concerned about loyalty or those who heavily invest in gaining new customers whilst long-term customers are leaving their brand.

Secondly, channel integration items were numerous and considerable in their scope. However, they did not signify the quality or extent of the channel integration activities. For example, whilst the click-and-collect service may be available with a retailer, the availability of collection times may be limited, the prices, assortment or promotions may have been different across channels or once purchased, the number of products delivered may differ to those ordered. Studying the quality of integration would be worthwhile to assess whether these quality issues lead to seamless shopping or detract from it. Furthermore, channel integration can include operational activities. Although operational items were outside the scope of this study, it is acknowledged that omnichannel retailing stretches far and wide within a company, through strategy, vision, departments and supply chain. For a wider understanding of channel integration, future studies should consider these items, which may provide further clarity for retailers.

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3.8 Appendices

Table 3.6: Demographic Information for all studies

Study 1			**Study 2**		
	Frequency	**Percent**		**Frequency**	**Percent**
Gender			**Gender**		
Male	179	51.73	Male	111	32.27
Female	167	48.27	Female	233	67.73
Total	346	100,0	Total	344	100,00
Age			**Age**		
18 - 29	124	35.84	18 - 29	71	20.64
30 - 39	94	27.17	30 - 39	127	36.92
40 - 49	73	21.10	40 - 49	78	22.67
50 - 59	27	7.80	50 - 59	47	13.66
60 +	28	8.09	60 +	21	6.1
Occupation					
Employé qualifié	137	39.60	Employed	230	66.86
Employé non-qualifié	39	11.27	Self-employed	27	7.85
Cadres et professions intellectuelles supérieures	70	20.23	Student	15	4.36
Profession intermédiaire	49	14.16	Homemaker	41	11.92
Ouvriers qualifié	24	6.94	Unemployed	13	3.78
Ouvriers non-qualifié	15	4.34	Retired	12	3.49
Artisans. commerçants. chefs d'entreprises	12	3.47	Disability	6	1.74
Education					
Sans diplôme. CEP. brevet des collèges	23	6.65	GCSE or equivalent	62	18.02
Baccalauréat	93	26.88	A Level or equivalent	100	29.07
Bac + 3	130	37.60	Bachelor Degree	135	39.24
Diplôme de Master	48	13.87	Postgraduate Degree	46	13.37
CAP. BEP	43	12.43	Other	1	0.29
Other	9	2.60			
Total	346	100,0	Total	344	100

Table 3.7: Reliability and Validity

		Study 1		N=346					**Study 2**		N=344				
Construct	**Item**	**Mean**	**SD**	**EFA**	α	**CFA**	**CR**	**AVE**	**Mean**	**SD**	**EFA**	α	**CFA**	**CR**	**AVE**
Value Harmonization (VP)	VH1	4,529	1,349	0,642	0,768	0,517	0,760	0,523	5,131	1,413	0,604	0,759	0,681	0,772	0,530
	VH2	4,569	1,229	0,649		0,772			5,483	1,168	0,680		0,764		
	VH3	4,590	1,379	0,519		0,840			5,613	1,200	0,655		0,738		
Uninterupted Shopping Journey (USJ)	USJ1	4,974	1,017	0,798	0,881	0,686	0,861	0,609	5,494	1,039	0,830	0,746	0,832	0,875	0,636
	USJ2	4,627	1,075	0,653		0,758			5,337	1,174	0,751		0,772		
	USJ3	5,012	0,969	0,650		0,796			5,465	1,095	0,752		0,785		
	USJ4	4,460	1,316	0,533		0,871			5,299	1,120	0,783		0,801		
Loyalty (LOY)	LOY1	4,777	1,460	0,629	0,905	0,823	0,870	0,690	4,663	1,390	0,755	0,909	0,791	0,834	0,626
	LOY2	5,072	1,389	0,678		0,844			4,314	1,634	0,791		0,818		
	LOY3	4,760	1,468	0,636		0,824			4,456	1,472	0,723		0,763		
Engagement: Cognitive (CECOG)	CECOG1	4,344	1,447	0,587	0,848	0,814	0,736	0,690	4,549	1,399	0,691	0,800	0,749	0,796	0,566
	CECOG2	4,751	1,386	0,639		0,674			4,326	1,460	0,673		0,732		
	CECOG3	4,408	1,507	0,692		0,739			3,869	1,540	0,726		0,775		
Engagement: Affective (CEAFF)	CEAFF1	5,315	1,221	0,755	0,920	0,750	0,826	0,543	5,235	1,219	0,756	0,871	0,759	0,875	0,637
	CEAFF2	5,078	1,219	0,757		0,731			5,017	1,294	0,819		0,818		
	CEAFF3	5,347	1,042	0,763		0,745			5,110	1,268	0,809		0,805		
	CEAFF4	5,023	1,305	0,722		0,721			4,991	1,321	0,804		0,809		
Brand Switching (BS)	BS1	2,960	1,450	0,743	0,879	0,822	0,740	0,706	2,576	1,531	0,781	0,856	0,849	0,904	0,759
	BS2	3,130	1,440	0,782		0,858			2,358	1,405	0,843		0,880		
	BS3	2,225	1,413	0,806		0,840			1,843	1,304	0,845		0,884		
Item Parcels	SS	4,680	0,851	0,260	0,779	0,341	0,712	0,551	5,403	0,914	0,324	0,743	0,687	0,919	0,696
	LOY	4,667	1,282	0,815		0,867			4,335	1,350	0,764		0,858		
	CECOG	4,501	1,224	0,777		0,831			4,248	1,286	0,792		0,891		
	CEAFF	5,191	1,020	0,902		0,903			5,089	1,146	0,864		0,851		
	BS	2,772	1,263	0,541		0,657			2,259	1,271	0,815		0,869		
Goodness of Fit for the structured model		$\chi2$ =508.399 (142), RMSEA = .066, CFI = .918, TLI = 0.907							$\chi2$ =568.281 (202), RMSEA = .073, CFI = .922, TLI = 0.911						
Goodness of Fit or 1 factor model		$\chi2$ =1607.410 (209), RMSEA = .139, CFI = .628, TLI = 0.589							$\chi2$ =2540.121 (210), RMSEA = .180, CFI = .503, TLI = 0.453						

CHAPTER 4: Examining the Moderating Effects of Consumer Characteristics on the Relationship between Channel Integration and Seamless Shopping: A Multilevel Analysis

4.1 Abstract

Although omnichannel retailers increasingly compete on customer experience, little is known about the conditions that affect seamless shopping. Our study analyses the effects of psychographic characteristics including multichannel ability, loyalty proneness, price consciousness, time pressure and product involvement on seamless shopping. To investigate these characteristics, we test a two-level hierarchical model containing data collected from 17 retailers and 344 customers. The results indicate that the relationship between channel integration and seamless shopping is more strongly impacted by low levels of multichannel ability, loyalty proneness and product involvement whilst consumer price consciousness and time pressure have no significant impact. Our findings provide theoretical implications for achieving seamless shopping and offer practical guidance for practitioners conducting competitive omnichannel strategies.

4.2 Introduction

"Any organisation that can successfully create customer service experiences that are seamless, and branded regardless of the channel in which they are delivered will be the most successful." (Smith and Wheeler 2002, p.156).

Omnichannel presents many challenges for retailers as channel integration and cross-channel marketing becomes more digitalised and complex. As retailers strive to compete effectively, constructing superior customer experiences is critical to maintaining position in the market. As retailers increasingly seek to manage the customer experience across channels, understanding customers has never been so important. The UK's largest clothing retailer, Marks and Spencer, has continually faced declines in sales since 2000 due to failures in

understanding the value perceptions of modern-day customers (Cameron 2018). This has led the retailer to initiate a customer insights program and invest in technology to improve its seamless experience (Cameron 2018 ; Carlander 2019). Whilst several retailers have invested in integrating their channels to respond to inherent customer needs, seamless shopping still appears to be a long-term desirable objective.

Although it has been suggested that retailers integrate channels to deliver seamless shopping (Banerjee 2014 ; Goersch 2002), there is limited knowledge about how customer characteristics affect retailer efforts. As multichannel is moving to omnichannel retailing, consumers are using several channels in one shopping experience (Verhoef et al. 2015), and they desire seamless shopping so that they can transition effortlessly across channels (Kumar et al. 2019). When customers perceive seamless shopping, they will derive more value from their experience, be more satisfied, loyal, engaged and less likely to switch channels (refer to chapters 2 and 3). Recent research shows that customers have certain preferences and behaviours towards channels based on psychographic characteristics (Nakano and Kondo 2018 ; Sands et al. 2016). For instance, Sands et al. (2016) found that customer characteristics (e.g. price consciousness, time pressure etc.) affect the choices of channels at different stages throughout the customer journey, prompting a more strategic retailing approach towards channel integration.

Researchers often study consumer psychographic variables to better understand customer characteristics that impact firm performance (De Keyser et al. 2015 ; Konuş et al. 2008 ; Sands et al. 2016) and affect consumer behaviours (e.g. satisfaction and loyalty; Herhausen et al. 2019). For example, Konus et al. (2008) identify three characteristics of multichannel shopping journeys; consumers who shop over multiple channels and have no preference for any channel; online orientated consumers who are more price-conscious, and store-focussed shoppers who are loyal to the store channel. De keyser et al. (2015) later

extends these findings to research shoppers, who search online and purchase in-store, and are generally more involved. More recent studies update these findings over extended channels. Sands et al. (2016) found that time-pressured consumers favoured social media for after-sales services and internet-prone shoppers tend to be less loyal. Nakano and Kondo (2018) found that multiple channel consumers are more loyalty prone. Whilst these studies identify important consumer characteristics for the purpose of general segmentation, few studies examine the effects of these characteristics on strategic outcomes (e.g. loyalty, satisfaction and seamless shopping, Herhausen et al. 2019). To our knowledge, few studies identify these characteristics towards the achievement of seamless shopping. Furthermore, omnichannel research is in its infancy and there is a pressing need to strengthen customer experiences that address customer needs (Piotrowicz and Cuthbertson 2014). Motivated by constructing improved seamless customer journeys and aiding strategic implementation, this study investigates important psychographic characteristics that influence the effects of firm based channel integration on customer perceived seamless shopping.

In this study, we investigate five characteristics that impact consumer behaviours towards multiple channel shopping; multichannel ability, loyalty proneness, price consciousness, time pressure and product involvement. As channels differ in their scope and purpose across retailers, consumer decisions may affect the whole customer journey. For instance, we study multichannel ability, which refers to consumer knowledge and skills in using several shopping channels in succession (Meuter et al. 2005). Rooted in self-efficacy theory (Bandura 1980), multichannel ability has been applied to self-service technologies (Meuter et al. 2005 ; Van Beuningen et al. 2009), online shopping (Dash and Saji 2008 ; Faqih 2013) and offline and offline channels (Herhausen et al. 2019), however to our knowledge, it has been rarely applied to the full scope of channels in the omnichannel environment. Understanding these impacts will strengthen omnichannel research, by

responding to calls for further research regarding the creation of seamless purchases (Marketing Science Institute 2018). Furthermore, we study these characteristics on the relationship between firm-channel integration and seamless shopping. Examining the conditions of this relationship strengthens theoretical and empirical evidence and highlights the relationship's importance to the achievement of omnichannel retailing strategy (Grewal et al. 2016 ; Herhausen et al. 2019). Lastly, we investigate these conditions on the firm-channel integration – seamless shopping relationship across several retailers. In doing so, we enhance market understanding by generalizing results across the retail sector.

We investigate these moderations by applying multilevel modelling, which is seldom used (Swoboda et al. 2016). This applies a more appropriate analysis in this research, which accounts for differences in customers that are attributable to retailers. Since previous studies have mainly analysed customer data using Latent-Class Cluster Analysis (De Keyser et al. 2015 ; Konuş et al. 2008 ; Nakano and Kondo 2018 ; Sands et al. 2016), multilevel analysis offers a different perspective, that is attributable to retailers' level of integration. In this sense, multilevel modelling applies a richer understanding of the theory by including both retailer and customer data nested within those retailers, thus extending previous study. Furthermore, the product categories studied in this research (consumer electronics, apparel/clothing, toys, home appliances and home improvements) offer a richer diversity than more recent studies (De Keyser et al. 2015 ; Nakano and Kondo 2018 ; Sands et al. 2016) which expands the scope of the findings and impact on seamless shopping in an omnichannel environment.

We broaden chapter 2 findings, by adopting the full mediated model into this research, which includes all outcomes of seamless shopping. We thus test each significant moderating variable separately on the full mediated model, between the channel integration and seamless shopping relationship. Thus, we examine five models in total in this chapter, which allows us to analyse not only the moderating effects but also examine how the moderating impacts

affect the outcomes. By testing the moderating effects on the mediated model, we determine impacts on loyalty (Yoo and Donthu 2001), customer engagement (Hollebeek et al. 2014), brand switching (Romani et al. 2012) and basket size (Nichols et al. 2015). This contributes further knowledge to this important research topic and enhances knowledge for practitioners.

This study is organised as follows. First, we discuss the conceptual model and hypothesise all moderating variables. Secondly, we empirically test the framework, using a series of multilevel moderated mediated models. Thirdly, we analyse the results and discuss the findings. Lastly, we offer research implications, managerial directions and discuss the limitations of the research.

4.3 Conceptual Framework

To extend the chapter 3 mediated model, we now discuss the hypotheses of the moderating variables of this relationship. The moderators have been chosen for their relevance to current consumer behaviours of shopping across channels, which is where managers and researchers are currently paying much attention (Herhausen et al. 2019 ; Verhoef et al. 2015). These behaviours refer to the whole customer journey from search, to purchase and aftersales (Shankar et al. 2011 ; Verhoef et al. 2009). In this framework, we borrow from consumer value-consciousness theory (Ailawadi et al. 2001). When selecting channels, certain consumer characteristics have been identified, that are associated with shopping benefits, costs, and goals (Ailawadi et al. 2001 ; Konuş et al. 2008). For example, when a customer identifies a need to consume a product or service, they structure their shopping goals accordingly and decide on which channel to use based on its associated benefits and costs. Marketers attribute psychographic characteristics to consumer decision-making which helps predict consumer behaviours (Christensen et al. 2016).

Specific psychographic characteristics have developed from recent literature (De Keyser et al. 2015 ; Herhausen et al. 2019 ; Konuş et al. 2008 ; Sands et al. 2016), which we test in this framework; loyalty proneness (Sproles and Sproles 1990), price consciousness (Lichtenstein et al. 1993), time pressure (Kleijnen et al. 2007) and product involvement (Zaichkowsky 1985). This study also presents a fifth characteristic, multichannel ability, based on customer self-efficacy towards channel usage (Bandura 1980 ; Herhausen et al. 2015 ; Meuter et al. 2005) which extends the research through focussing on the intersection between customer knowledge and retailing technology. Next, we develop our hypotheses. We start by discussing each moderator using theoretical arguments and providing empirical evidence.[4]

4.3.1 Multichannel ability

Multichannel ability refers to consumer knowledge and skills in using several channels in succession when shopping (Meuter et al. 2005). Customer ability is based on self-efficacy theory, which stipulates that consumers require self-belief in order to perform and accomplish a task (Bandura 1977). The task itself may differ in complexity, which influences the degree to which the consumer perceives that they will succeed in a task (Ford and Dickson 2012). Research has found that customer use of self-service technologies is affected by consumer ability (Meuter et al. 2005 ; Van Beuningen et al. 2009), online shopping intentions (Dash and Saji 2008 ; Faqih 2013) and technological innovation (Ellen et al. 1991). Furthermore, consumer ability was found to increase service evaluations (Van Beuningen et al. 2009) and improve certain consumer behaviours (Meuter et al. 2005).

Each channel of a retailer can have varying functions, requiring different sets of customer-associated skills. For example, UK omnichannel retailer, Curries PC-World, has a

[4] The positive and significant effects between firm-channel integration and seamless shopping can be found in chapter 3.

'point and place' mobile app that uses artificial reality (AR) to enable consumers to artificially place the product within their home. Conversely, there is an initial screen that shows a set of instructions on usage, which suggests that some customers will not instinctively know how to use it. Whilst the app assists during the search phase of shopping, it does not allow consumers to purchase, which forces them to switch to another channel to continue their shopping journey. Subsequently, the website presents an alternative function, interface and associated set of skills required. Consumers are therefore required to have diverse skills when shopping across several channels. When customers are knowledgeable and skilful on multiple channels, it is more likely that they will overcome challenges presented during the customer journey that would otherwise interrupt it. When customers are not experienced with technology required to join channels (eg. click and collect), this promotes negative emotions towards shopping experiences which may affect seamless shopping perceptions (Larivière et al. 2017). Drawing on self-efficacy theory, we propose that consumers who believe that they are capable and confident in using several channels will be more willing and able to use new channels or several channels in succession, even if these channels are not fully integrated. This will contribute to the capability to hold a seamless shopping experience for any level of retailer integration. Whereas for customers who have lower multichannel ability, non-integrated retailers are less likely to produce seamless shopping. Therefore, we propose that customers who have low multichannel ability will highly value retailer efforts to integrate channels, which will result in a higher perception of shopping seamlessness, more so than customers who have high multichannel ability.

H1: Multichannel ability moderates the effect of firm-channel integration on seamless shopping such that integration has a stronger impact on seamless shopping for customers who

have low multichannel ability compared to customers who have high multichannel self-efficacy.

4.3.2 Loyalty Proneness

Loyalty proneness refers to learned behaviours that influence consumers' general and habitual patterns towards shopping (Sproles and Sproles 1990). Loyalty proneness refers to loyalty as a learned behaviour, which affects the consumer decision-making style (Sproles and Sproles 1990). Loyalty prone shoppers carry out their shopping out of habit and are more likely to use several channels (Nakono and Kondo, 2018).

Previous research has found that loyalty proneness influences channel behaviour, where more loyalty prone consumers are likely to shop in multiple channels (Nakano and Kondo 2018). Customers become more loyal to the brand as they gain experience of using several channels. Loyalty proneness is also related to brand switching where loyalty prone customers will be less likely to switch to other retailers (Ailawadi et al. 2001 ; Konuş et al. 2008). Channel integration is evolving with consumer behaviours and requires customers to adapt to new ways of shopping over channels. If loyalty prone shoppers experience more channels during their shopping journey, they will have more interactions with different channels. With more interactions, loyalty prone consumers will be less likely to run into shopping difficulties since they are accustomed to navigating across different retailer channels. They have developed more learned behaviours with the channels that they choose, and in turn, hold a more positive perception of seamless shopping whatever the level of integration of the retailer. Whereas, less loyalty prone customers will be less accustomed to certain channels and have less habitual behaviours with a retailer. As a result, they may encounter difficulties that limit the perception of seamless shopping particularly when the retailer has a low level of integration. Therefore, we propose the following hypothesis:

H2: Loyalty proneness moderates the effect of firm-channel integration on seamless shopping such that integration has a stronger impact on seamless shopping for customers who have low loyalty proneness compared to customers who have high loyalty proneness.

4.3.3 Price consciousness

Lichtenstein et al. (1993, p.235) defined price consciousness as "the degree to which the consumer focuses exclusively on paying a low price". During the shopping journey, price consciousness influences search intentions regarding both price and discounts (Alford and Biswas 2002). Consumers who have high price consciousness will spend longer searching for low prices, whilst less price-conscious consumers will place little significance on finding the best prices (Alford and Biswas 2002 ; Konuş et al. 2008). Several studies have found that that price-conscious consumers chose channels carefully based on their price perceptions (Baker et al. 2002 ; Montoya-Weiss et al. 2003 ; Verhoef et al. 2007). For example, price-conscious consumers prefer to use the internet channel for search and purchase because they can quickly and easily compare prices (Sands et al. 2016).

In omnichannel, integrated channels consider aligned price, product and promotion, whilst seamless shopping includes the perception of the same price over channels. As price-conscious consumers are accustomed to searching for prices between channels and choose their channels and retailers more carefully, they are more likely to perceive seamless shopping regardless of the level of channel integration. Whereas, customers who are less price-conscious are likely to use fewer channels of the retailer, and in turn, will not be astute to inconsistencies in price. Thus, channel integration is more likely to have an impact on seamless shopping perception for customers who are more price conscious in comparison to customers who are less price conscious. Therefore, we propose the following hypothesis:

H3: Price consciousness moderates the effect of firm-channel integration on seamless shopping such that integration has a stronger impact on seamless shopping for customers who have high price consciousness compared customers having a low price consciousness.

4.3.4 Time Pressure

Time pressure is defined as a consumer's tendency to consider time as a precious resource (Kleijnen et al. 2007). Mobile phones enable consumers to access goods and services anytime, anywhere, prompting them to consider their time more resourcefully (Kleijnen et al. 2007). Since the mobile has become a prolific channel in the customer journey, several studies examine the impact of time pressure on channel and touchpoint usage (Herhausen et al. 2019 ; Konuş et al. 2008 ; Sands et al. 2016).

When time is considered scarce, consumers use fewer channels and touchpoints because they do not have time to search extensively (Kleijnen et al. 2007 ; Konuş et al. 2008). Consumers who feel that they have limited time may extract less value from the shopping experience, thereby minimising the potential to perceive shopping benefits (Wünderlich et al. 2019). As time-pressured consumers use fewer channels, they will be more likely to seek convenient and efficient experiences to save time. They may also choose their channels more wisely, based on learned experience. Time pressured consumers may be more attracted to cross-channel services such as click and collect, which helps consumers save time (Jara et al. 2018). Therefore, consideration over the time allocated to shopping may lead consumers to place more importance on channel integration activities that lead to seamless shopping compared to customers who have low time pressure.

H4: Time pressure moderates the effect of firm-channel integration on seamless shopping such that integration has a stronger impact on seamless shopping for customers who have high time pressure compared to customers who have low time pressure.

Product Involvement

Zaichkowsky (1985, p.342) defined product involvement as "a person's perceived relevance of the object based on inherent needs, values, and interests". Often interchangeably used with involvement relating to purchase decisions (Clarke and Belk 1979 ; Demoulin and Willems 2019), customers who have high product involvement invest more time, effort and resources into researching the product. In contrast, a customer who has low product involvement puts little effort into analyzing, scrutinizing and researching products (Celsi and Olson 1988 ; Pansari and Kumar 2017 ; Putrevu and Lord 1994 ; Wallace et al. 2004). Overall, involved customers pay more attention to the quality of the shopping experience (Swinyard 1993) and invest more time and effort into the shopping journey than less involved consumers (Celsi et al. 1993 ; Clarke and Belk 1979).

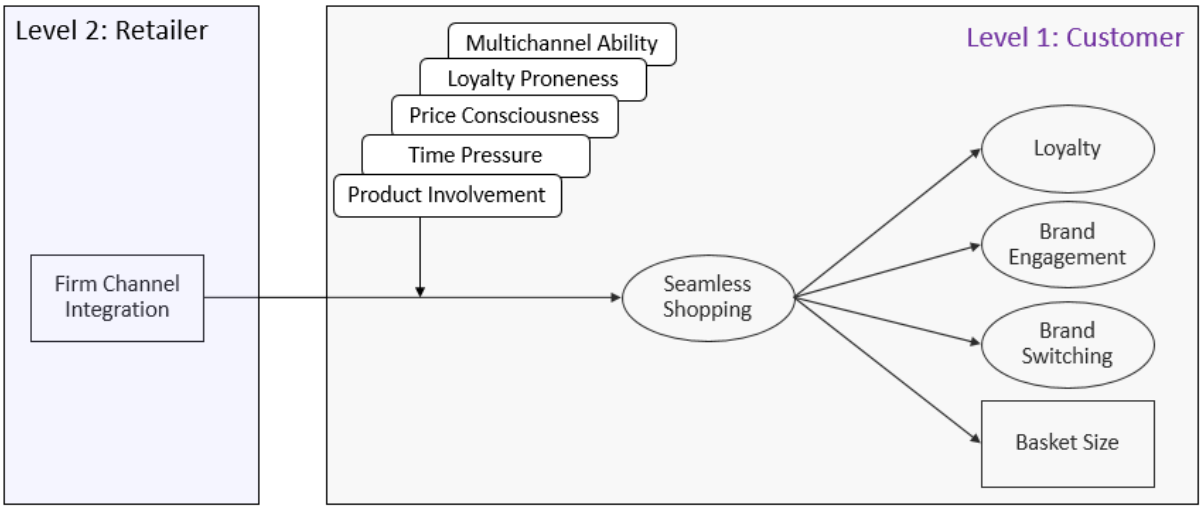
Prior research has suggested that involvement is related to channel usage behaviours where uninvolved shoppers have fewer preferences for certain channels during the customer journey (Konuş et al. 2008) and multi-touchpoint customers are more involved than store-focused customers (Herhausen et al., 2019). Furthermore, integration has an impact on information processing, where more involved shoppers are likely to search for more information and accept fewer alternatives (Broderick and Mueller 1999). Involved shoppers are likely to appreciate and pay more attention to the products, prices, assortment and promotions, and are more likely to switch channels to find the specific product that they are searching for. Therefore, highly involved consumers may be more involved in the act of obtaining the product rather than paying attention to switching between channels. Whereas,

less involved consumers are likely to put less effort into switching channels since they search for alternatives, and will benefit more from channel integration activities. Therefore, channel integration is likely to have a higher impact on seamless shopping for less involved consumers than highly involved consumers. Therefore, we propose that:

H5: Product involvement moderates the relationship between channel integration and customer seamless shopping such that integration has a stronger impact on seamless shopping for customers who have low product involvement compared to customers who have high product involvement.

To extend the findings of chapter 3, each moderator is tested on the relationship between channel integration and seamless shopping, which forms part of a larger conceptual framework. The full conceptual model also contains outcomes of loyalty (Yoo and Donthu 2001), customer engagement (Hollebeek et al. 2014), brand switching (Romani et al. 2012) and basket size (Nichols et al. 2015). We present the full conceptual model in figure 4. Next, we test the framework and discuss the results.

Figure 4: Conceptual Framework



4.4 Methodology

4.4.1 Sample and Procedure

To develop the sample, we collected observational data of 17 UK based retailers across a broad spectrum of omnichannel related product categories. The UK retailing sector contains a rich diversity of omnichannel retailers offering a variety of omnichannel products (Saleh 2016). To identify the top omnichannel retailers, a pilot study was carried out that asked consumers to recall a seamless experience within the last 3 months and specified that the experience must have included two or more channels.

First, a filter question was included which asked respondents to specify if they had used the mobile or internet for shopping, to determine the likelihood that they use two or more channels for shopping. Respondents who rarely or never used the internet for shopping were screened out. Next, we asked respondents if they had used two channels or more for shopping, they identified the channels and then specified the retailer that they had the experience with. The 17 nominated retailers were then used to inform the rest of the research procedures.

Next, a survey of 344 UK consumers (67.7% female, average age: 37) was carried out using a data collection agency. A breakdown of the sample distribution can be found in appendix table 4.2. Respondents were again asked to fulfil the criteria specified in the pilot study. Consumers rated their experience with one of the 17 retailers using the 7-item seamless shopping scale. Next, respondents were asked to assess their level of all moderating variables; multichannel ability, loyalty proneness, price consciousness, time pressure and product involvement towards shopping. Lastly, we asked respondents to rate their attitudes towards all outcome variables; loyalty (Yoo and Donthu 2001), customer engagement (Hollebeek et al. 2014), brand switching (Romani et al. 2012) and basket size (Nichols et al. 2015).

In parallel, the top retailers specified by respondents in the pilot study were subjected to a channel integration observation study. We observed the 17 retailers on channel integration criteria outlined in the literature (Bendoly et al. 2005 ; Cao and Li 2015 ; Emrich et al. 2015 ; Frasquet et al. 2017 ; Lee and Kim 2010). This is discussed further in chapter 3 and in the next section (Section 4.4.2 Measures).

Multilevel modelling was deemed appropriate for this study as two levels of data were identified; customers nested within retailers. Ignoring this nested structure could lead to misspecification and biased error results. We tested the requirement to run multilevel modelling by estimating a baseline model containing no predictor variables. If no variance exists between retailers, then multilevel modelling is not deemed appropriate (Swoboda et al. 2016). We carried out and an intraclass correlation test (ICC) (Duncan et al. 1997) and found that 6% of the differences in seamless shopping could be attributed to retailer differences. Thus, multilevel modelling was deemed appropriate.

We tested the hypotheses in a systematic manner, which commenced with the calculation of the baseline model containing the level 2 predictor, firm-based channel integration, and the level 1 outcome, seamless shopping. We then added the outcome variables to the model, and seamless shopping formed the mediating variable between firm- channel integration and the outcomes. Lastly, we added each moderator between firm-channel integration (antecedent) and seamless shopping (mediator), first varying the intercepts and secondly, the intercepts, slopes and cross-level interactions for each of the five models. The level 1 variable, seamless shopping, and all moderating variables were all grand-mean centred (Hox 2010). The model was calculated separately for each moderator using GSEM in Stata 16, which led to the estimation of five separate multilevel moderated mediations. Additionally, we calculated the explained variance for each moderator using a calculation by Hox (2010). The effect sizes were calculated following Marsh et al. (2009).

4.4.2 Measures

Seamless shopping and all moderating variables were operationalised using 7-point Likert scales drawn from the literature, with ratings from 1 (strongly disagree) to 7 (strongly agree). Seamless shopping was based on a 7-item scale that identifies the consistency and continuity of experience across channels. Multichannel ability was measured using a 4-item scale adapted from Jones (1986), Oliver and Bearden (1985) and Meuter et al. (2005). A 4-item Loyalty proneness scale was used from Sproles and Sproles (1990), 4-item price consciousness scale (Lichtenstein et al. 1993) and a 7-item time pressure scale was used from Kleijnen et al. (2007). Lastly, a 3-item product involvement scale was measured using a scale developed by Zaichkowsky (1985).

As identified in chapter 3, we reviewed all existing multiple channel integration scales found in the literature (Bendoly et al. 2005 ; Cao and Li 2015 ; Frasquet et al. 2017 ; Lee and Kim 2010) and found no suitable scales that encompassed all up-to-date omnichannel integration criteria. We reviewed all 63 existing scale items for their suitability within an omnichannel context and added 7 updated scale items which were developed from more recent channel integration literature. The updated scale items related mainly to the interactions regarding mobile use in-store such as “the customer basket/cart is stored across channels” (Morris 2019), “Past purchases online can be accessed in the store” (Homburg et al. 2017 ; Payne and Frow 2005) and “social media is advertised in-store to promote customer interaction with retailer's social media” (Piotrowicz and Cuthbertson 2014). Following a review of all items for validity and internal consistency, we removed 36 ambiguous, duplicate and inappropriate items. A further 10 items relating to internal operations were removed due to the inability to measure them and a further 3 items were removed due to little evidence of existence across retailers. We then rated each retailer based on whether or not each criterion was fulfilled. To establish a hierarchy of integration, we subjected the data to a Guttman

scalogram analysis (1944, 1950) which identified patterns of integration across retailers. The reproducibility coefficient of the pattern was .92, which is higher than the .9 recommended level (Guttman, 1950). See chapter 3 for more information. This provided a level of integration for each retailer, which contributed to a continuous variable used during data analysis.

The data were analysed using multilevel structural equation modelling in Stata 16. We first ensured reliability and validity by testing each measure in the structural model. The first model resulted in the deletion of six unsatisfactory items with loadings below .6; one item for multichannel ability, 4 items for time pressure and 1 item for price consciousness. All remaining items loaded onto their designated factors and were statistically significant. The coefficient alphas exceeded the acceptable level of .7. Supporting convergent validity, the composite reliabilities (CR) for each construct was higher than the recommended .7 and the average variance extracted (AVE) were higher than .5 (Fornell and Larcker 1981). In support of discriminant validity, all squared AVE's were higher than the correlation between each pair of constructs (Fornell and Larcker 1981). Thus, all measures were deemed reliable and valid. Table 4 summarizes the reliability and validity results. We also tested correlations between variables to verify relationships and view patterns in the data (see appendix table 4.3).

4.5 Results[5]

4.5.1 Moderating Effects

Hypothesis 1 predicted that multichannel self-efficacy moderates the effect of firm-channel integration on seamless shopping, and integration has a stronger impact on seamless shopping for customers who have low multichannel self-efficacy compared to customers who have high multichannel self-efficacy. As stated in table 4.1, the interaction between channel

[5] For the main effects, all models show a positive and significant relationship between firm-channel integration and seamless shopping, ranging from b = .62 to .86 p< 0.05.

integration and multichannel ability was significantly but negatively related to multichannel ability (β = -.14 p< 0.05). The negative interaction effect[6] can be explained by customers who have low multichannel ability, who have a stronger perception of seamless shopping, at different levels of channel integration than customers who have high multichannel ability. As shown in figure 4.1, when channel integration is low, customers who have low multichannel ability will perceive less seamless shopping. When channel integration is high, customers who have low multichannel ability perceive high seamless shopping. Whereas for customers who have high multichannel ability, the perception of seamless shopping is relatively unaffected by the level of channel integration. This shows that low multichannel ability has a significant impact on seamless shopping, that is attributed to changes in channel integration, but less significant impacts for customers who have high multichannel ability. Therefore, channel integration and the perception of seamless shopping is more important for customers who have low multichannel ability. Thus, these results support hypothesis 1.

Hypothesis 2 predicted that loyalty proneness moderates the effect of firm-channel integration on seamless shopping, which has a stronger impact on seamless shopping for customers who have low loyalty proneness compared to customers who have high loyalty proneness. We found that loyalty proneness has a significant negative effect on the channel integration and seamless shopping relationship (β = -.16, p< 0.01). As shown in figure 4.1, channel integration has a stronger impact on seamless shopping for customers who are less loyalty prone. When channel integration is low, customers who are less loyalty prone perceive low seamless shopping. When channel integration is high, less loyalty prone customers perceive higher seamless shopping.

6 The negative interaction effect between channel integration and multichannel ability, and subsequent negative interaction effects of moderators can be explained by fewer effects in the high moderator conditions compared to the low moderator conditions.

Table 4: Reliability and Validity of Measurement

Items	Item Code	Mean	SD	α	EFA	CFA	CR	AVE
I am fully capable of using several channels for shopping.	MA1	6.215	.837	.881	.861	.875	.893	.677
I am confident in my ability to use several channels for shopping.	MA2	6.195	.833		.865	.884		
Using several channels for shopping is well within the scope of my abilities.	MA3	6.166	.947		.695	.779		
My past experiences increase my confidence that I will be able to successfully use several channels for shopping.	MA4	5.988	.910		.653	.743		
I generally do my shopping in the same way.	LP1	5.192	1.132	.756	.556	.711	.816	.526
The brand of the product is important for me in my purchase decisions.	LP2	4.439	1.530		.717	.752		
I generally purchase the same brands.	LP3	4.683	1.398		.631	.782		
The place where I do my shopping is very important to me.	LP4	4.765	1.439		.637	.649		
It is important for me to have the best price for the product.	PC1	5.756	1.027	.884	.748	.803	.903	.699
I compare the prices of various products before I make a choice	PC2	5.759	1.105		.788	.837		
I am willing to go to extra effort to find lower prices.	PC3	5.619	1.159		.834	.864		
I will shop at more than one store to take advantage of low prices.	PC4	5.622	1.232		.776	.838		
I like to make to-do lists to help sequence my activities	TP1	4.802	1.642	.744	.756	.836	.857	.667
I prefer to be able to plan in advance what shopping tasks I need to do	TP2	4.965	1.412		.739	.830		
I often combine tasks to optimally use my time	TP3	5.206	1.196		.628	.782		
I chose this product very carefully	PI1	5.610	1.024	.903	.788	.847	.901	.752
The product that I buy matters a lot to me	PI2	5.488	1.161		.810	.855		
Choosing this product is an important decision for me	PI3	5.317	1.260		.881	.899		
Product availability is the same in all channels	SS1	5.131	1.413	.890	.625	.703	.907	.584
Offers are consistent across channels	SS2	5.483	1.168		.703	.751		
Prices are the same across channels	SS3	5.613	1.200		.686	.746		
I am able to continue the shopping experience on any channel	SS4	5.494	1.039		.799	.814		
I can use channels interchangeably during the search and purchase stage	SS5	5.337	1.174		.723	.756		
I can move easily from one channel to another	SS6	5.465	1.095		.730	.766		
My shopping journey is continuous across channels	SS7	5.299	1.120		.780	.807		
Parcelled items								
Multichannel Ability	MA	6.140	.778					
Loyalty Proneness	LP	4.770	1.060					
Price consciousness	PC	5.689	.976					
Time Pressure	TP	4.991	1.162					
Product Involvement	PI	5.472	1.098					
Seamless Shopping	SS	5.403	.914					

Notes: EFA = Exploratory factor analysis, CFA = Confirmatory factor analysis, CR = Composite reliability and AVE = Average Variance Extracted. MA = Multichannel Ability, LP = Loyalty Proneness, PC = Price consciousness, TP = Time Pressure and PI = Product Involvement and SS = Seamless Shopping.

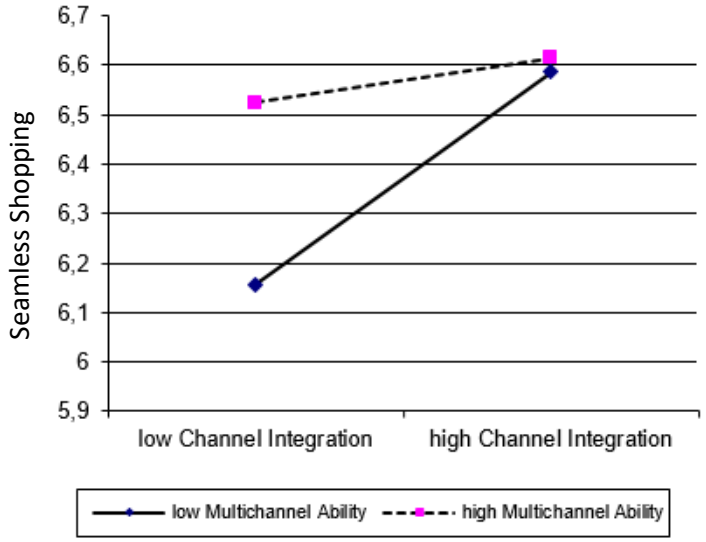
Table 4.1: Moderation results

			Baseline Model		Multichannel Ability		Loyalty Proneness		Price Consciousness		Time Pressure		Product Involvement	
			β	***p***	***β***	***p***	***β***	***p***	***β***	***p***	***β***	***p***	***β***	***p***
Intercept					6.47***	.000	5.30***	.000	6***	.000	5.34***	.000	5.52***	.000
Integration	>	SS	.118*	.015	.127*	.006	.130**	.005	.071	.510	.141**	.003	.116	.059
Moderating Variable	>	SS			.152*	.032	.247***	.000	.304***	.000	.113	.070	.204***	.000
Integration x moderating variable	>	SS			-.138*	.050	-.156**	.003	-.024	.720	.009	.889	-.100*	.043
Explained Variance					.37		.31		.35		.35		.33	
Effect Size					.393		.469		.626		.120		.374	

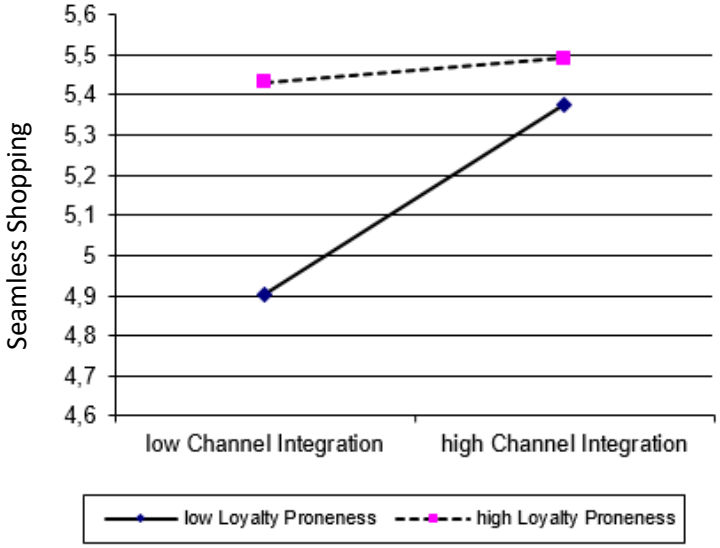
Notes: SS = Seamless Shopping. For tests of significance; * p < .05. ** p < .01. *** p < .001. All results are shown for models containing varying intercepts, slopes and covariances. Effect sizes were computed as (2*b*SDpredictor)/SDoutcome where b = unstandardised regression coefficient. SDpredictor is standard deviation of the predictor and SDoutcome is the standard deviation of the outcome variable (Marsh et al. 2009). We can compare this effect size to Cohen's d (Cohen 2013). Variance explained = 1- (Slope variance with moderator as predictor/ Slope variance without moderator as predictor) (Hofmann 1997).

Figure 4.1: Moderating effects of multichannel ability, loyalty proneness and product involvement

Multichannel Ability

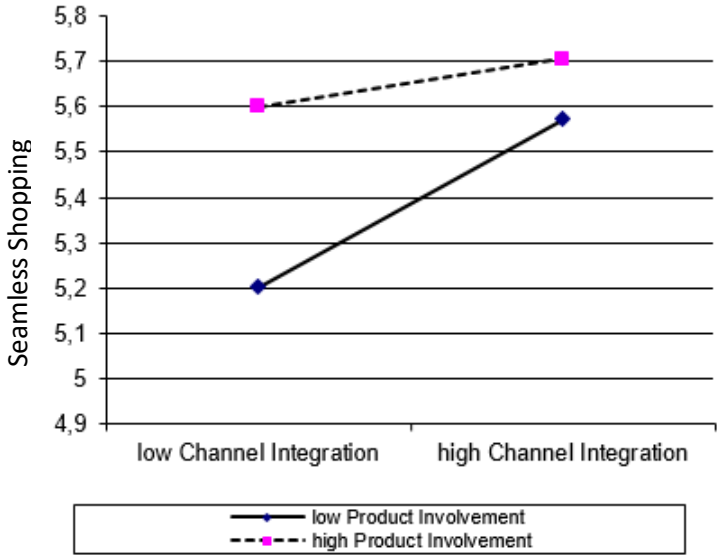


Loyalty Proneness



Product Involvement

3.1.1



customers who have low loyalty proneness in comparison to highly loyalty prone customers, hypothesis 2 is supported.

Next, we examined the effect of price consciousness in relation to hypothesis 3, which predicted that price consciousness moderates the effect of firm-channel integration on seamless shopping such that integration has a stronger impact on seamless shopping for customers who have high price consciousness compared to customers who are less price consciousness. The interaction effect of price consciousness on the channel integration-seamless shopping relationship was insignificant (β = -.02, p= ns), meaning that the data fails to support hypothesis 3. This is surprising since price sensitivity is likely to have an impact on channels and price conscious consumers spend longer searching for prices (Baker et al. 2002 ; Montoya-Weiss et al. 2003 ; Verhoef et al. 2007). Therefore, we would expect more price conscious consumers to be influenced by any inconsistencies in pricing, which would impact their seamless shopping perception. This could be explained by price-conscious consumers' preference for the internet channel for easy price comparison. Perhaps price-conscious consumers complete the purchase on the channel that they choose and are less likely to use several channels, meaning that they would limit their exposure to potential inconsistencies in pricing between channels.

Next, we investigated the moderator, time pressure, where we hypothesised that time pressure moderates the effect of firm-channel integration on seamless shopping such that integration has a stronger impact on seamless shopping for customers who have high time pressure compared to customers who have low time pressure. We found that the interaction effect was not significant (β = .01, p= ns). Therefore, hypothesis 4 is not supported. Perhaps this could be explained by time pressured shopper preferences for single-channel use as opposed to multiple channels, thus failing to demonstrate the requirements to perceive seamless shopping (Konuş et al. 2008).

Lastly, we examined the result of product involvement on the channel integration-seamless shopping relationship. We hypothesised that product involvement moderates the relationship between channel integration and seamless shopping such that integration has a stronger impact on seamless shopping for customers who have low product involvement compared to customers who have high product involvement. We found a significant interaction effect for product involvement (β = -.10, p=0.05) on the channel integration, seamless shopping relationship and that integration had a stronger impact on seamless shopping for consumers with low product involvement. Whereas, channel integration had a smaller effect on customers who have high product involvement. When channel integration is low, customers who are less involved perceive low seamless shopping. When channel integration is high, less involved customers perceive higher seamless shopping. In contrast, customers who have high product involvement perceive higher seamless shopping when channel integration is low. As the perception of seamless shopping is highly impacted by the level of channel integration for customers who have low product involvement but a lesser effect was found with highly involved customers, hypothesis 5 is supported.

For the significant moderators, multichannel ability explains 37% of the variance, loyalty proneness explains 31% of the variance and lastly, product involvement explains 33% of the variance. All results for main effects and moderating effects can be found in table 4.1. Graphs of the significant interactions of multichannel ability, loyalty proneness and product involvement can be found in figure 4.1.

4.6 Discussion and Conclusions

Both practitioners and researchers believe that seamless shopping can strengthen the customer experience. As channels develop in their depth and scope, retailers attempt to manage the

customer experience. In research, however, investigating the conditions under which seamless shopping is achieved, has received little empirical attention. This study contributes new knowledge to the important customer experience field, both theoretically and managerially. We aimed to identify consumer psychographic characteristics in relation to firm-channel integration and its effect on customer perceived seamless shopping. Building on consumer value-consciousness theory (Ailawadi et al. 2001), our empirical investigation suggests that multichannel ability, loyalty proneness, price consciousness, time pressure and product involvement affects how consumers use multiple channels during the customer journey. More specifically, we expected that integration would have a stronger impact on seamless shopping for consumers who have low multichannel ability, loyalty proneness and product involvement than consumers who have higher values. We also expected that integration would have a stronger impact on seamless shopping for customers who have high price consciousness and time pressure. Our results show that whilst multichannel ability, loyalty proneness and product involvement has a significant effect on the channel integration-seamless shopping relationship, the effect of price consciousness and time pressure is insignificant. We found that multichannel ability, loyalty proneness and product involvement differentially moderate the linkages between integration and seamless shopping, depending on the level of integration. Integration has a stronger impact on seamless shopping when consumers have low multichannel ability, loyalty proneness and product involvement. Customers who have high multichannel ability, loyalty proneness and product involvement have little effect on the impact of firm-channel integration on seamless shopping. Price consciousness and time pressure do not significantly strengthen or weaken the effects of integration on seamless shopping.

4.6.1 Theoretical Implications

Responding to calls for more research that lead to seamless purchases (Marketing Science Institute 2018), this study enhances knowledge of the role that psychographic characteristics play in the modern-day omnichannel environment. Consumer characteristics do not only influence shopping goals,(Ailawadi et al. 2001), channel usage (De Keyser et al. 2015 ; Herhausen et al. 2015 ; Konuş et al. 2008 ; Nakano and Kondo 2018 ; Sands et al. 2016), satisfaction and loyalty (Herhausen et al. 2019), but also influence seamless shopping. Since seamless shopping is a strategic goal within omnichannel retailing (Grewal et al. 2016 ; Kumar 2018) and channel integration research is evolving (Cao and Li 2015 ; Herhausen et al. 2015 ; Neslin et al. 2006), this study sheds new light on the conditions that affect modern-day omnichannel shopping journeys in relation to wider strategic aims of seamless shopping.

The results of the moderations support the existence of three important underlying mechanisms that affect the perception of seamless shopping. Channel integration has a stronger effect on seamless shopping for consumers who have low multichannel ability, loyalty proneness and product involvement. These findings highlight the role that consumer characteristics play in meeting omnichannel objectives of seamless shopping. Although consumers expect seamless shopping, they may be more or less confident and efficient in shopping over channels, and select channels based on their benefits. In turn, consumer perception of their own multichannel ability affects the perception of seamless shopping, depending on the level of channel integration. Channel integration has a stronger impact on seamless shopping when multichannel ability is low than when there is high consumer multichannel ability.

To complement this finding, consumers who are less loyalty prone are also likely to perceive lower seamless shopping from non-integrated channels than those who have high

loyalty proneness. Subsequently, the amount of consumer product involvement influences the effect of integration on seamless shopping perception. Consumers who have low involvement are likely to perceive lower seamless shopping when channels are not integrated. These findings suggest that customers who have low multichannel ability, loyalty proneness and product involvement are likely to benefit the most from higher channel integration, leading to seamless shopping. Additionally, customers who have low multichannel ability, loyalty proneness and product involvement will require more assistance from a retailer in order to enhance seamless shopping when channels are less integrated. On the contrary, the channel integration – seamless shopping relationship is less affected by customers who have high multichannel ability, loyalty proneness and product involvement as their seamless shopping perception is high, regardless of the level of channel integration. The findings of these theoretically grounded set of characteristics help identify the specific conditions, which are essential to the advancement of existing knowledge in the seamless shopping field.

Contrary to expectations, we find no empirical results for time pressure and price consciousness moderating this framework. These psychographic characteristics have no bearing on customer perceptions of seamless shopping. This is a surprising result since cross-channel services such as click-and-collect provide convenient time saving options for time-pressured consumers (Jara et al. 2018). Our inconclusive findings regarding price-conscious consumers suggest that they may use fewer channels which limits their exposure to potential inconsistencies in pricing between channels. This finding agrees with Sands et al. (2016) who found that price conscious consumers preferred the internet channel. Further research could consider the benefits of cross-channel services to understand the influence of time pressure and price consciousness on seamless shopping.

4.6.2 Managerial Implications

The results of this study provide new insights that may enhance seamless shopping objectives in practice. Our results highlight customer characteristics that affect the achievement of seamless shopping. Whilst it may seem intuitive for managers to integrate their channels as a whole, the results of this study show where to allocate significantly more time and effort to enhance certain desirable characteristics that are more likely to meet seamless shopping objectives.

We find that multichannel ability can affect the retailer integration-seamless experience relationship, particularly for customers who have low multichannel ability. Customers with high multichannel ability appear resistant to differing levels of channel integration and are likely to be able to quickly adapt to changes in channel integration and have seamless shopping experiences. Whereas, for customers with low multichannel ability, their seamless shopping perception is heavily influenced by the level of channel integration. Managers can use this information to find ways to boost consumer confidence towards technology and motivate those with low multichannel ability to use channel integration services. Managers can improve channel usage and new channel activities by providing simple and clear instructions or quick walk-through videos. When advertising across channels, it is important that customers are aware of other channels (e.g. advertising the mobile app in-store) but also how to use them. Retailers can show pictures of how to use cross-integration activities when introducing them in-store or on social media. For example, when advertising a new barcode scanner on the app, a quick walkthrough video can show the customer accessing the app, clicking on the correct buttons and scanning the item, whilst the voiceover can discuss the benefits. This will not only provide information but will boost consumer confidence by advertising the simplicity. This will enhance their potential for seamlessness during the customer journey. Furthermore, customers with low multichannel

ability may be more susceptible to requiring assistance. Delays in overcoming shopping problems or difficulties during the customer journey for these customers may cause frustration and hinder seamless shopping (Larivière et al. 2017). To improve problem solving when inconsistencies arise during the customer journey (e.g. website menus not working, barcode scanner temporary unavailable, kiosk functioning issue), retailers should consider the use of chatbot's, click-to-call, or click-to-speak to another customer, so that they can access assistance quickly and directly. Good customer service in-store can assist mobile customers or those using in-store kiosks to access services that connect channels.

Our findings also indicate that consumers who are loyalty-prone are more likely to perceive seamless shopping than those who are less loyalty prone. This suggests that highly loyalty-prone customers have developed more habitual behaviours towards retailers. They better know how to use different channels and can extract more value from their experiences, which enhances their perception of seamless shopping. To engage less loyalty-prone customers and improve their seamless shopping perception, retailers can encourage customers to use other channels, to enhance their customer journey by experiencing other useful channel integration activities. On a basic level, employees of the firm's stores should be knowledgeable about the website or mobile app and help or encourage customers to use the online channels (Bendoly et al. 2005). Furthermore, retailers can advertise mobile use in-store, to promote finding and ordering other products online if they are not available in-store. In-store employees or marketing communications can promote use of app barcode scanner to get more product information or to visualise the product in their own space (augmented reality). More or improved communications to customers will promote learning on other channels and in turn, will improve seamless shopping perceptions.

Product involvement moderates the retailer channel integration-seamless shopping relationship such that for both highly involved and low involved shoppers, channel integration

affects the seamless shopping perception. However, low involvement customers are more affected by different levels of channel integration whereas high involvement customers are affected to a lesser degree. However, the importance of involvement on the channel integration – seamless shopping relationship is prominent. Integrating channels is important for retailers selling high involvement products because when channel integration is high, the seamless shopping evaluation is likely to be high. For retailers selling high involvement products, being able to check availability of stock in-store may be very important because customers are more invested in finding that particular product. Channel integration is very important for retailers with low involvement products since this more highly impacts on their seamless shopping perception and retailers risk their customers going elsewhere. Low involvement shoppers are more likely to choose an alternative retailer if the original product is not available (eg. phone charger, cables) (Celsi and Olson 1988). Whilst decisions to add online availability checking software may encompass logistical and operational investments, low involvement shoppers will be likely to extract more value from well-integrated channel services, which will heighten their seamless shopping perception. Therefore, retailers selling low involvement products are encouraged to improve or maintain a high level of channel integration to be competitive. The 21-item channel integration scale serves as a starting point for retailers of low involvement products.

4.6.3 Limitations and Further Research

Our findings should be viewed as a preliminary step to achieving seamless shopping. Further research is required to overcome the following limitations. The limited results of this study may have been affected by the study design. Our study specified that respondents must have used more than two channels to qualify for seamless shopping (i.e. transitioning over several channels). Many segmentation studies distinguish impact of price consciousness, time

pressure and loyalty based on the number of channels used (De Keyser et al. 2015 ; Konuş et al. 2008 ; Nakano and Kondo 2018 ; Sands et al. 2016). This often involves comparisons between multiple channel shoppers and one-channel shoppers, of which the latter were not accounted for in this research. These studies also often involved thousands of participants, increasing the likelihood of finding significant results. Therefore, the consumer psychographics as moderating variables are likely to have reduced impact in our study, proven by the low effect sizes and negative significant results. To enhance the academic and managerial implications of this research, increasing the number of respondents may enhance the significance of the two moderators, time pressure and price consciousness in particular, and improve the effect sizes. With additional respondents, separating the research into product categories may also enhance the outcomes of this study, for both research and practice.

To increase the generalisability of our findings and enhance the significance of time pressure and price consciousness, further research could be undertaken in additional countries. Time pressure may be more prominent in other cultures, for example, the American culture, where Americans report feeling more time pressure in comparison to the previous 10 years (Assael 2004). In nations where average sleep is less and working hours are more such as Canada, we are likely to find a more significant result (Venter 2006). For price consciousness, different retailer experiences or different product categories in other cultures may improve this result since price conscious customers tend to prefer the internet channel (Verhoef et al. 2007) and ecommerce adoption rates differ across countries (Statista 2019). By examining this research in further countries, we could improve the significance of the results and in turn, enhance the outcomes of this research.

As the outcomes of this research are limited to the effects of psychographic characteristics, further studies can investigate service quality of channel integration activities

as a further antecedent or as a control variable. Whilst our research measures the presence of several channel integration items, it does not measure the quality of these services and whether they are effective or efficient. Apps may be accessible less than 100% of the time, past purchases can only be accessed 1 month after purchase or past purchases can only be found when linked to a credit card loyalty account (permitted based on consumer credit rating). This means that channel integration activities are not always efficient or available for all customers at all times. Therefore, future study should control for service quality which may provide more comprehensive results of the consumer psychographic moderations. If service quality was included as an antecedent in this framework, it also may enhance managerial implications.

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4.8 Appendices

Table 4.2: Sample Distribution

Retailer	n	Gender (in percent)		Age Group				
		Male	Female	18 to 29	30 to 39	40 to 49	50 to 59	60 plus
Argos	81	42,0	58,0	15	27	21	14	4
Asda	38	26,3	73,7	8	20	4	4	2
CurrysPCworld	25	68,0	32,0	3	6	7	4	5
Debenhams	21	14,3	85,7	2	6	7	4	2
H&M	17	0,0	100,0	5	9	2	1	0
JD Sports	9	55,6	44,4	5	2	2	0	0
John Lewis	18	44,4	55,6	2	8	6	2	0
Marks and Spencer	27	22,2	77,8	3	4	8	10	2
Matalan	13	15,4	84,6	2	5	2	2	2
New Look	13	15,4	84,6	5	5	2	0	1
Next	25	24,0	76,0	3	9	10	1	2
Smyths	12	25,0	75,0	3	8	1	0	0
Sports Direct	7	57,1	42,9	2	2	1	2	0
Tesco	23	43,5	56,5	5	12	4	1	1
TK Maxx	6	0,0	100,0	2	3	1	0	0
Topshop	4	0,0	100,0	4	0	0	0	0
Zara	5	20,0	80,0	2	1	0	2	0

Table 4.3: Correlations for variables used in moderations

	Multichannel Ability	Loyalty Proneness	Time Pressure	Price consciousness	Product Involvement	Seamless Shopping	Channel Integration
Multichannel Ability	**.817**						
Loyalty Proneness	.178***	**.725**					
Time Pressure	.245***	.190***	**.817**				
Price consciousness	.175***	.224***	.248***	**.759**			
Product Involvement	.181***	.369***	.171***	.332***	**.867**		
Seamless Shopping	0.067	.248***	.181***	.237***	.222***	**.764**	
Channel Integration	-0.037	-0.074	0.002	0.168	0.057	.146**	n.a

Note: Test of significance is based on a two-tailed test. * p < .05. ** p < .01. *** p < .001. Numbers in bold show the square root of the AVEs

Descriptive Statistics

Table 4.4: Multichannel Ability by Age Group

			Age in categories					
			18 - 29	30-39	40-49	50-59	60 plus	Total
Multichannel Ability								
Low		1	0	0	0	0	0	0
		2	0	0	0	0	0	0
		3	1	1	0	0	0	2
		4	1	2	1	3	0	7
		5	11	10	9	4	2	36
		6	35	65	37	22	6	165
	High	7	23	49	31	18	13	134
	Total		71	127	78	47	21	344

*Multichannel Ability was measured on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

Table 4.5: Product Involvement by Product Category

			Product Category					
			Consumer Electronics	Clothing/ Apparel	Toys	Home Appliances	Home Improvements	Total
Product Involvement	Low	1	0	1	0	0	0	1
		2	1	2	0	1	0	4
		3	1	7	1	1	2	12
		4	6	22	3	7	1	39
		5	15	62	10	10	9	106
		6	27	67	14	14	5	127
	High	7	15	26	3	8	3	55
Total			65	187	31	41	20	344

*Multichannel Ability was measured on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

Table 4.6: Channel Selection over the Customer Journey

	Customer Journey stages				
Channel Selection	Search	Checked Availability	Purchase	Collection	Total %age
Website	148	159	155		33,6
Mobile	83	90	65		17,3
more than 2 channels	54	28			6,0
In-store	29	45	120	224	30,4
Web and store	20	10			2,2
Web and mobile	10	8			1,3
Kiosk		4	4		0,6
Collection point/Locker				12	0,9
Delivery at home				108	7,8

*All respondents used two or more channels over the customer journey.

CHAPTER 5: Concluding Remarks

Firms are continually searching for new opportunities to manage a complex array of channels that drive consumers' seamless purchases (Marketing Science Institute 2018). This research provides a thorough investigation into seamless shopping, demonstrating conceptual thinking, empirical enquiry and practical applications. The theoretical and managerial implications can have immediate impact on the perspectives of both academics and managers. By developing the topic, we summarise current literature and broaden it by providing a conceptualisation of seamless shopping and presenting an accompanying scale development. This lays down solid foundations, while the rest of the dissertation provides a network of information on how to arrive at the seamless shopping destination and the potential rewards of the onward journey. There is no direct route from channel integration to loyalty, customer engagement, brand switching and basket size outcomes. The desirable outcomes are generated through the customer perception of seamless shopping. Certain consumer psychographics also impact the relationship between channel integration and seamless shopping, enhancing knowledge about the conditions that affect it. This dissertation enhances omnichannel research with new knowledge regarding seamless shopping and explains its important role in assisting the achievement of omnichannel retailing. We demonstrate the importance of seamless shopping and the potential impacts on both academic research and practitioners in the subsequent sections.

5.1 Theoretical Implications

Although several authors emphasise the relevance of seamless shopping across customer experience, channel integration and omnichannel retailing literature, research on this topic remains scarce. Given that the majority of customers now shop across several channels

simultaneously, this research enhances knowledge on what customers demand from customer experiences across the customer journey nowadays. We extend knowledge of seamless shopping by conceptualising it and developing an accompanying scale, which establishes firm foundations for this much-needed research. The seamless shopping literature review enhances customer experience research by proposing further evidence that can strengthen experiences over the customer journey (Lemon and Verhoef 2016). Knowledge of the nature of seamless shopping also enhances omnichannel and channel integration research by highlighting integral components of consistent and continuous shopping journeys. By predicting outcomes of seamless shopping (satisfaction, shopping value and loyalty), this reinforces its important role in modern-day shopping journeys. These contributions develop a strong base ion which to build further research.

In chapter 3, we test the newly developed seamless shopping scale within a conceptual framework, which gives important direction to the topic area. The framework, grounded in servicescape theory (Bitner 1992), applies retailer-based inputs that link to customer behavioural outputs tested in two studies over two populations (UK and France). This adds to the generalisability of results. By demonstrating that the scale improves customer engagement, avoids brand switching and leads to a higher basket size, we evidence how seamless shopping can strengthen customer journeys. Since many retailers are struggling at a basic and physical level to connect channels (Herhausen et al. 2015), we find that seamless shopping is the customer response of firm-channel integration. This relationship reinforces that channel integration is pivotal to providing seamless shopping. We test these relationships across multiple retailers, using multilevel SEM, which offers a comprehensive and robust analysis from both a retailer and customer perspective. Lastly, we extend channel integration research by updating existing measures into an omnichannel context. Overall, this study

provides novel research on the omnichannel chain of events from both a firm and customer perspective.

In chapter 4, we investigate the conditions that affect the relationship between firm-channel integration and seamless shopping. The results suggest that customers with low perceived ability, confidence and skills in using several channels lead to a greater likelihood of seamless shopping when channels are integrated. Subsequently, loyalty-prone customers are more likely to have developed learned behaviours over channels and are less affected when integration is low than less loyalty-prone customers. Lastly, customers who are less involved perceive low seamless shopping, when channel integration is low. Therefore, improving channel integration is more important for retailers carrying low-involvement products than those selling high involvement products. This study sheds new light on the conditions that affect modern-day omnichannel shopping journeys concerning the wider strategic aims of seamless shopping.

This dissertation provides a highly relevant contribution to the literature. By joining the three literature streams (channel integration, omnichannel and customer experience), we introduce seamless shopping and provide a thorough framework to support omnichannel research.

5.2 Managerial Implications

This research generates new and helpful insights for practitioners wishing to enhance the effectiveness of omnichannel retailing strategies. Firstly, our conceptualization provides clarification within the customer experience field and establishes the characteristics of seamless shopping, which include easy movement from channel to channel, interchangeable nature of channels, consistency perceptions, and continuation of the customer journey. This provides retailers with a distinct direction to aim for, and a common understanding between members within a firm. The newly developed scale can be adopted in practice to assist

retailers in meeting their objectives. Using the scale in practice will indicate issues when introducing new channels, implementing or withdrawing channel integration activities, altering services or for testing new initiatives. The scale can thus be used as an efficiency indicator or as a comparison tool, which will help retailers to assess their omnichannel strategies.

Our results are very encouraging for the achievement of several positive outcomes following seamless shopping. We found that seamless shopping leads to satisfaction, shopping value, loyalty, customer engagement, increased basket size and avoidance of brand switching. These outcomes further reinforce the use of the seamless shopping scale, which is short and simple to implement in practice. We tested these outcomes across several omnichannel product categories and therefore, this research is relevant to all retailers selling consumer electronics, clothing/apparel, toys, home appliances, automotive and home improvements goods. Managers can use these strong results to argue for more investment in channel integration activities that create seamless shopping. Since seamless shopping predicts important desirable outcomes, this reinforces the pivotal role that seamless shopping plays in omnichannel.

Whilst the link between seamless shopping, channel integration and omnichannel retailing is widely discussed in the retailing environment, we empirically reinforce this relationship and provide clear evidence to support its implementation in practice. More integrated channels result in more seamless shopping, whilst less integrated retailers are likely to result in lower seamless shopping perceptions. This emphasizes the importance of integrating channels for retailers who wish to achieve seamless shopping. The updated channel integration and classification tool provide information for retailers on which channel integration activities affect seamless shopping. In particular, retailers can use this tool as a thorough up-to-date checklist for ensuring that they meet seamless shopping objectives.

Furthermore, retailers that fail to integrate their channels are unlikely to achieve seamless shopping and will fall behind the competition (Piotrowicz and Cuthbertson 2014).

Lastly, we evidence that consumer multichannel ability, loyalty proneness and product involvement affect the firm-channel integration-seamless shopping relationship. Retailers can use this knowledge to ensure customers feel confident and skilled on all channels, by firstly providing simple and clear instructions and quick walkthrough videos. Customers can also be supported when shopping, by providing chatbot's, click-to-call, or click-to-speak to another customer. This will allow customers to access quick assistance and to feel more confident when any shopping problems arise across channels. Customer service in-store can also boost multichannel ability by assisting mobile customers or those using in-store kiosks. To convert less loyalty-prone customers, retailers can encourage learned behaviours across channels by prompting customers to use other channels that they may not be aware of. These activities may provide opportunities to educate customers who are less confident in using multiple channels and in turn, improve their seamless shopping perception. Regarding product involvement, channel integration is of higher importance for retailers selling low involvement products than high involvement products. For retailers of low involvement goods, ensuring online customers can check availability in-store through the website and implementing consistent price, information, promotion, assortment and loyalty program across channels will help customers to improve their seamless shopping perception.

As omnichannel retailers face increasing challenges to compete in a crowded market, they can benefit from this research by clarifying their business-wide objective of seamless shopping, strengthen customer experiences and enhance their ability to meet their objectives.

5.3 Limitations and Further Research

Despite providing significant contributions, this dissertation contains certain shortcomings and is subject to several limitations. We acknowledge these limitations whilst presenting opportunities for further research.

Firstly the conceptualisation and scale development of seamless shopping focus on customer cognitive aspects of consistency and continuity when switching amongst channels. On a broader level, the purpose of this research concerns improvements towards omnichannel retailing strategy, which encompasses the management of channels. However, since the start of this dissertation, research regarding previously little-known touchpoints has considerably picked up pace (Baxendale et al. 2015 ; Herhausen et al. 2019 ; Kuehnl et al. 2019). Since seamless shopping was found to solely contain the cognitive dimension and customer experience considers several dimensions, touchpoint research could potentially extend the scope of seamless shopping to include physical, social and emotional dimensions (Verhoef et al. 2009). For example, augmented reality in shopping may increase the emotional connections (eg.excitement, joy) when used in-store (Hilken et al. 2017). Touchpoint literature also draws connections to brand image, brand design and brand experience, which could open up new directions for seamless shopping research. For example, utilitarian brand attitude has been associated with touchpoints in customer journey design research (Kuehnl et al. 2019). Therefore, brand attitude could moderate the relationship between seamless shopping and the outcomes of loyalty, brand engagement and channel switching. Touchpoint literature may thus extend the scope of future seamless shopping research.

Secondly, this research considers a wide variety of channel integration activities that we updated to ensure all current integration activities were included. We observed 21 items in two countries for their presence, on a binary yes/no scale. Although the items are considerable

and produced significant results for these studies, measuring the quality of these activities may provide further scope on the link to seamless shopping. For example, retailers can pay for items or scan products using the mobile phone in-store, but if these services are not available or differ in their level of user-friendliness, this could affect seamless shopping. Further research could also consider the impacts of new shopping tools on the channel integration-seamless shopping relationship. For example, augmented reality tools such as virtual fitting rooms and virtual assistants are slowly being introduced into the shopping experience (Scholz and Duffy 2018). AR for shopping is an evolving area of research that may enhance shopping across channels, therefore it may impact seamless shopping. Further research could thus be carried out on the impact of channel integration quality and shopping tools on the channel integration-seamless shopping relationship. This may identify further information on implementing omnichannel strategies.

Thirdly, a limitation of chapter 4 potentially lays in the survey design, which specified multiple channel use as an important filter to fulfil the requirements of seamless shopping (i.e. transitioning channels). Whilst this created impactful results overall, the effect size of the moderating variables were potentially limited by a lack of comparison with single-channel experiences. Several prior segmentation studies were able to clearly distinguish these variables (e.g. price consciousness, time pressure, loyalty proneness) by the usage of channels, including single-channel experiences (De Keyser et al. 2015 ; Konuş et al. 2008 ; Nakano and Kondo 2018 ; Sands et al. 2016). Whilst it was found that the majority of global consumers (i.e. 73%) use multiple channels throughout shopping journeys, (Sopadjieva et al. 2017), there was less distinction between psychographic characteristics of these multiple channel customers in our study. Further empirical research of psychographic characteristics should consider an increase in the number of respondents to enhance the effect size since the pool of multichannel respondents are already potentially limited. With further respondents,

further research could also consider separating the research by product categories, which could provide more precise managerial implications.

Overall, we hope that this dissertation provides a catalyst for further research on seamless shopping as we firmly believe that it can inspire future omnichannel related projects.

List of Tables

List of Figures