Service Science

Cross-Channel Integration and Customer Experience in Omnichannel Retail Services

Kyunghwa Chung, Kyung Wha Oh, Minjeong Kim

Please scroll down for article—it is on subsequent pages

With 12,500 members from nearly 90 countries, INFORMS is the largest international association of operations research (O.R.)
and analytics professionals and students. INFORMS provides unique networking and learning opportunities for individual
professionals, and organizations of all types and sizes, to better understand and use O.R. and analytics tools and methods to
transform strategic visions and achieve better outcomes.
For more information on INFORMS, its publications, membership, or meetings visit http://www.informs.org

informs.

Cross-Channel Integration and Customer Experience in Omnichannel Retail Services

Kyunghwa Chung,[a,*] **Kyung Wha Oh,**[b] **Minjeong Kim**[c]

[a] College of Business and Management, VinUniversity, Vinhomes Ocean Park, Gia Lam District, Hanoi 008404, Vietnam; [b] Department of Fashion Design, College of Arts, Chung-Ang University, Daedeok-myeon, Anseong-si, Gyeonggi-do, South Korea; [c] School of Art, Architecture + Design, Indiana University Bloomington, Bloomington, Indiana 47405
*Corresponding author
Contact: kyunghwa.c@vinuni.edu.vn, https://orcid.org/0000-0002-8160-277X (KC); kwhaoh@cau.ac.kr,
https://orcid.org/0000-0002-8602-2950 (KWO); kim2017@indiana.edu, https://orcid.org/0000-0002-4684-5442 (MK)

Abstract. Despite the increasing attention being given to cross-channel integration services, an understanding of the impact of cross-channel integration on customer experience is still lacking. This study fills this gap. With a focus on retail brand experience, this study demonstrates that cross-channel integration impacts customer experience and further results in changes in perception and behavioral intention. A conceptual model that illustrates the customers' psychological mechanism responding to cross-channel integration was developed. To test the model, a scenario-based online experiment was conducted. The results show that perceived channel integration impacts retail brand experience, which in turn impacts perceived service convenience, satisfaction, and patronage intention. Creating a better experience is a key challenge for retailers to ensure customer satisfaction and brand loyalty. Our results show that cross-channel integration services can play a pivotal role in the shaping of retail brand experience in today's competitive retail environment that continuously evolves, owing to digital technology. The findings of this study add valuable new knowledge to the growing omnichannel retailing literature and provide practical insights to develop omnichannel retail services.

1. Introduction

In a fast-changing retail environment, multichannel operation has become a vital strategy for retail firms. With the proliferation of multichannel retailers and the wide adoption of mobile technology, consumers today are creating numerous new ways to integrate multiple channels (Jocevski et al. 2019). To satisfy individual needs, some consumers practice webrooming, and other consumers practice showrooming (Ruiz-Molina et al. 2021). According to Thygesen (2018) customer clickstream data analysis, a customer's shopping journey is as unique as each customer, such that no two customers have the same journey.

Responding to evolving consumers' channel utilization patterns, multichannel retailers are providing omnichannel services, integrating on- and offline channels better. Buy Online Pickup In Store (BOPIS hereafter) service is widely provided, and Buy Online Return In Store (BORIS hereafter) service is also increasing. The COVID-19 pandemic is further fueling this omnichannel service trend. With the changes resulting from the pandemic (e.g., lockdown, quarantine, reduced store hours,

etc.), consumers were bound to a limited shopping environment, heavily relying on online shopping regardless of their previous channel preferences. To tackle this situation, new omnichannel services such as curbside pickup are being introduced, and channel integration has become a critical factor for consumers to choose a retailer (Heiman et al. 2022).

Increasing numbers of researchers are investigating the impact of cross-channel integration on consumer behavior. Building on extant research, the current study investigates the effect of cross-channel integration on retail brand experience. In a multichannel shopping process, a consumer comprehensively experiences a retail brand while using the brand's different channels. Therefore, seamless channel switching can play a crucial role in the shaping of retail brand experience. Walmart, which is well known for its innovative, cutting-edge multichannel system, shows that channel integration creates a superior brand experience, strengthening brand equity. Walmart keeps innovating its omnichannel services through new technologies such as an automated pickup tower and self-checkout app. Through the sleek,

advanced omnichannel shopping process, consumers can have an excellent experience and positive perception of Walmart. Owing to its continuous efforts to provide advanced omnichannel services, Walmart has been listing its name on the list of innovative brands consistently.

Despite the high plausibility that cross-channel integration impacts retail brand experience, little is known about it. Although increasing numbers of studies are investigating the impact of cross-channel integration, previous studies have focused mostly on its impact on consumer perceptions (see, e.g., Hsieh et al. 2012, Emrich et al. 2015, Herhausen et al. 2015, Kazancoglu and Aydin 2018, and Savastano et al. 2019). Recently, how consumer emotions and experiences are affected by cross-channel integration has begun to be explored (see, e.g., Lee et al. 2019, Shen et al. 2018, and Le and Nguyen-Le 2021). However, research that examines the impact of cross-channel integration on customer experience at the retail brand level is very limited.

Well-connected channels provide an innovative and convenient shopping process, which enables consumers to experience a retail brand in a better manner. The current study empirically examines the psychological mechanism of consumer responses to cross-channel integration. Brand experience is an important antecedent of brand associations and perceptions (Brakus et al. 2009). Retail brand experience can be a strategic weapon that ensures higher prices and customer satisfaction (Nikhashemi et al. 2019). In a rapidly changing retail environment, the competition among retailers is intensifying, and retailers are required to enhance customer loyalty by building strong brand equity. By investigating the effect of cross-channel integration on retail brand experience, the current study provides essential information needed to build a successful retail service strategy. The findings of this study not only add valuable new knowledge to the growing omnichannel retailing literature but also provide deep insights into retail service management.

2. Literature Review
2.1. Cross-Channel Integration
In the previous research, two different viewpoints on cross-channel integration were found. Early discussions on cross-channel integration emphasized consistency through homogenized operations and uniform management across different channels (see, e.g., Goersch 2002, Coelho and Easingwood 2003, and Schramm-Klein and Morschett 2006). However, as the discussion deepened, coordination and synergy through complementary operations across channels were highlighted (see, e.g., Sousa and Voss 2006, Cao and Li 2015, Verhoef et al. 2015, Galipoglu et al. 2018, and Bèzes 2021). Sousa and Voss (2006) provided a conceptual understanding of cross-channel integration from the coordination perspective. Noting

the holistic formation of customer experience in the multichannel setting, they proposed that multichannel service quality comprises virtual, physical, and integration quality and defined channel integration quality as the ability to provide customers with a seamless service experience across multiple channels. Bèzes (2021) also suggested that perception of integration is an outcome of judgments about the degree of congruence between different channels. Through an empirical study, he found that, when perceiving congruence, consumers selectively adopt the attributes of each channel and cumulatively combine information from different channels. The current study understands cross-channel integration as a coordination because, to meet increasingly diverse customer needs, flexible operational efficiency is important while leveraging the unique strengths of different channels. Therefore, in this study, cross-channel integration is defined as the degree to which the shopping process at a retail brand is seamless across its different channels.

With the growing importance of cross-channel integration in retail services, increasing numbers of researchers are investigating its impacts on consumers. Previous studies found that cross-channel integration influences consumers' shopping benefits (Emrich et al. 2015, Kazancoglu and Aydin 2018, Savastano et al. 2019), quality perceptions such as perceived service quality and perceived multichannel quality (Hsieh et al. 2012, Herhausen et al. 2015), fluency (Shen et al. 2018), customer engagement (Lee et al. 2019), satisfaction (Hsieh et al. 2012, Frasquet and Miquel 2017, Cotarelo et al. 2021), loyalty (Cotarelo et al. 2021, Ruiz-Molina et al. 2021), etc. Although significant attention was paid to cross-channel integration, its impact on customer experience has not yet been fully explored. Filling this gap, the current study examines the impact of cross-channel integration on customer experience. In particular, among the various experiences arising in a multichannel shopping process, the current study examines retail brand experience. In the following, based on a thorough review of previous studies, we develop a conceptual model in which perceived channel integration plays a role in shaping retail brand experience and further leads to perceptual and behavioral changes.

2.2. Retail Brand Experience
Brand experience is internal, and behavioral consumer responses are evoked by brand-related stimuli (Brakus et al. 2009). In the current study, retail brand experience is operationalized as consumers' subjective, internal responses evoked by stimuli related to a retail brand while shopping across a retail brand's multiple channels. We posit that cross-channel integration influences retail brand experience. Experience occurs in a variety of settings during a consumer's purchase process (Bagdare and Jain 2013, Becker and Jaakkola

2020, Paik and Lee 2021). In a multichannel environment, a consumer experiences a retail brand in a complex way while traversing different channels of a retail brand (Lemke et al. 2011, Lemon and Verhoef 2016). Consumers search for a product using mobiles and tablets, try at physical shops, and make purchases through social media as well as stores and websites. In this process, numbers of touchpoints are generated between consumers and a retail brand (Paik and Lee 2021). Consumers holistically experience a retail brand through countless encounters, and channel switching is also included in the critical moments at which consumers experience a retail brand.

In a consumer's mind, a retail brand is a retail brand regardless of the channels the consumer engages in. Thus, retail brand experience evolves by comprehensively combining and integrating experiences from individual channels and channel-switching processes (Khan and Rahman 2015, Lemon and Verhoef 2016, Yrjölä et al. 2018). Even if an offline experience is superior, a bad online experience or inconvenient channel-switching process would undermine the total experience at the brand level. Therefore, it is reasonable to presume that cross-channel integration affects retail brand experience. If channels are well connected seamlessly, positive responses such as positive feelings (e.g., pleasure and enjoyment) and thinking (e.g., positive image perception of a retail brand) would be stimulated, leading to superior retail brand experience. However, if a consumer experiences friction, failing to go through a seamless, personalized shopping journey, it will trigger negative thoughts and emotions (e.g., disappointment and stress), impairing an overall experience with a retail brand.

although the studies that examined the impact of cross-channel integration on retail brand experience are limited, we can presume it based on the findings of several previous studies. For instance, Shen et al. (2018), who explored the drivers of omnichannel service usage, demonstrated that channel integration quality influences perceived fluency, which in turn positively affects omnichannel service usage. Perceived fluency was defined as the extent to which customers feel the cross-channel experience is natural, unhindered, and continuous, which means consumers' perception of cross-channel experience. Lee et al. (2019) investigated the relationship between channel integration and customer engagement. Through an analysis of survey data about multichannel brands, they demonstrated that consumers are more engaged with brands when channel integration is ensured throughout the purchasing journey. Recently, Le and Nguyen-Le (2021) examined the influence of channel integration on customer experience that they operationalized as a second-order construct of two dimensions, satisfaction with the experience and positive emotions. They found that channel integration increases

customer empowerment by offering controllability over the shopping journey, which mediates the impact of channel integration on customer experience. These studies imply that channel integration positively impacts cross-channel experience comprising retail brand experience and makes consumers more engaged with a retail brand in a shopping process. Therefore, the current study postulates that channel integration positively impacts retail brand experience by allowing consumers to have a better cross-channel experience and to engage with a retail brand's stimuli more intensively.

The current study considers positive and negative experiences as two subconstructs contributing to retail brand experience (Westbrook 1987). Experience has both positive and negative valences and varies in strength and intensity (Brakus et al. 2009, Lemke et al. 2011). The complex multichannel environment often triggers both positive and negative consumer responses concurrently, and consumers frequently experience ambivalent emotions and mixed feelings in a single shopping journey. Feeling a positive emotion does not preclude the occurrence of negative emotion and vice versa (Westbrook 1987, Babin et al. 1998). For example, a consumer who has a positive experience from online searching can also possibly develop a negative experience if notified that the product searched online is not available at stores when he or she visits an offline store. To facilitate different psychological mechanisms of positive and negative experiences, this study employs both positive and negative experiences as subconstructs of retail brand experience. We expect that perceived channel integration positively affects positive experience (H1) and negatively affects negative experience (H2).

2.3. Perceived Service Convenience

Service convenience refers to consumers' time and effort perceptions related to buying or using a service, representing the degree to which consumers can save time and effort for shopping (Berry et al. 2002, Seiders et al. 2007). A fast checkout system or a competent salesperson offering prompt service at stores enhances service convenience (Berry et al. 2002). In the current study, perceived service convenience is operationalized as the perceived easiness of cross-channel shopping at a retail brand resulting from the perception of saved time and effort for multichannel shopping.

In a multichannel shopping process, consumers' time and effort spent on shopping are significantly influenced by cross-channel integration. If a retailer provides BOPIS service, consumers can pick up an online purchase at stores at their convenience without having to wait at home. On the other hand, if a retailer does not integrate customer data across different channels, customers should provide their information again, spending additional time and effort. Therefore, consumers' evaluation of how easy and convenient cross-channel

shopping offered by a particular retailer is is influenced by the level of the retailer's channel integration.

The current study postulates that perceived channel integration influences perceived service convenience via retail brand experience. Brand experience can be articulated on micro-, meso-, and macrolevels (Andreini et al. 2018). Among them, we focus on brand experience at the microlevel, which is a psychological variable that serves as a basis for further evaluation and belief formation (Brakus et al. 2009, Andreini et al. 2018). In the current study, retail brand experience is nondeliberative, spontaneous responses and reactions, which are promptly evoked by retail brand-related stimuli encountered during cross-channel shopping (Brakus et al. 2009, Becker and Jaakkola 2020). On the other hand, perceived service convenience represents consumers' evaluation of the degree of the easiness of cross-channel shopping at a particular retail brand. Retail brand experience is distinguished from conscious evaluations (Becker and Jaakkola 2020). Perceptions and judgmental evaluations such as perceived service quality and satisfaction are evaluative outcomes of experience (Brakus et al. 2009, Becker and Jaakkola 2020).

The impact of experience on subsequent cognitive processes (i.e., evaluation and judgment) can be explained by appraisal theory and feeling as information theory (Pham et al. 2001, Pham 2004, Ding and Tseng 2015). Applying appraisal theory, brand experience allows consumers to engage in cognitive appraisals (Ding and Tseng 2015). Consumers assess whether the brand experience offered values manifested by superior services and, based on that, make affective judgments on the brand. In other words, brand experience plays a role as an intrinsic cue for subsequent evaluations (Zeithaml 1988, Mathwick et al. 2001). Feeling as information theory also supports that consumers use positive/negative feelings that comprise brand experience as information in evaluating a retail brand (Pham et al. 2001). Because consumers rely on experiences as information, if consumers indulge in positive experiences with a retail brand, they perceive the brand in a better manner (Pham 2004, Park et al. 2010, Ramaseshan and Stein 2014).

Previous studies empirically evidence that brand experience serves as a vital source for subsequent evaluations or judgments of a brand. In the previous studies, it is demonstrated that brand experience influences evaluative variables such as brand evaluation (Bapat and Thanigan 2016), perceived quality (Ding and Tseng 2015), brand trust (Ramaseshan and Stein 2014, Khan and Fatma 2017), brand credibility (Khan and Fatma 2017), brand image (Cleff et al. 2014), and brand personality (Brakus et al. 2009, Ramaseshan and Stein 2014). Perception of service convenience of a retail brand represents consumers' evaluation of a retail brand in terms of the level of convenient service and easiness of

shopping. Consumers would evaluate the easiness of cross-channel shopping at a retail brand based on what they experienced while using the brand's multiple channels. Therefore, it is presumed that perceived service convenience is formed as an evaluative outcome of retail brand experience. Based on these, we expect that whereas positive experience positively affects perceived service convenience (H3), negative experience negatively affects perceived service convenience (H4).

2.4. Satisfaction

Consumer satisfaction refers to the perceived discrepancy between prior expectations and the perceived performance of consumption, representing pleasurable fulfillment when shopping outcomes perform well (Oliver 1980). Well-executed cross-channel integration brings an excellent shopping experience at a particular retail brand beyond expectations, which can increase satisfaction. Previous studies empirically support the impact of cross-channel integration on satisfaction. Frasquet and Miquel (2017) analyzed survey data of multichannel apparel shoppers and found that channel integration has significant effects on satisfaction and loyalty. Channel integration influenced loyalty directly and also indirectly via satisfaction. Hsieh et al. (2012) investigated multichannel operations in the banking sector and found that channel integration positively affects satisfaction via multichannel service quality. Zhang et al. (2022) developed a measurement scale to assess integrated store service quality that includes channel integration as one of the core aspects and demonstrated the positive impact of integrated store service quality on satisfaction. Sorkun et al. (2020) also found that retailers' omnichannel capability, consisting of channel consistency, channel integration, and social media adoption, impacts customer satisfaction.

We posit that perceived channel integration increases satisfaction via retail brand experience and perceived service convenience. According to the research of Brakus et al. (2009), the stronger consumers experience a brand, the more satisfied they are with the brand. Khan and Rahman's (2015) qualitative study shows that retail experience is shaped by retail factors such as packaging and salesperson, which in turn impacts satisfaction. Morgan-Thomas and Veloutsou's (2013) research revealed that the positive experience of an online search engine brand increases satisfaction. Therefore, it is presumed that positive experience from a well-integrated multichannel system increases satisfaction, and negative experience due to frictions across channels lowers it. We hypothesize that whereas positive retail brand experience positively affects satisfaction (H5), negative retail brand experience negatively affects satisfaction (H6).

Previous studies also support the positive impact of service convenience on satisfaction. Benoit et al. (2017)

analyzed a Western European retailer's customer survey data and found that service convenience positively impacts satisfaction. Lloyd et al. (2014), who analyzed survey data of shopping mall visitors in Hong Kong, also found the positive impact of service convenience on satisfaction and the mediation effects of hedonic and utilitarian values. In a multichannel shopping environment, consumers' time and energy required to complete the shopping across different channels are critical factors in determining satisfaction. We postulate that perceived service convenience positively affects satisfaction (H7).

2.5. Patronage Intention
As the last variable in our model, patronage intention, which refers to consumers' behavioral intention to choose and remain loyal to a retailer, is examined (Cronin et al. 2000). Patronage intention is a critical variable in retailing because it helps retailers identify valuable customers who generate profits (Pan and Zinkhan 2006). We postulate that perceived service convenience and satisfaction, which are impacted by channel integration perception, positively affect patronage intention. Retail factors that increase consumer convenience, such as close location, extended operating hours, and efficient store design, positively influence patronage intention (Pan and Zinkhan 2006, Seiders et al. 2007). In the cross-channel shopping context, if a consumer thinks cross-channel shopping is easy and has a high service convenience perception at a particular retail brand, the consumer would have a higher patronage intention. The positive effect of satisfaction on loyalty, repurchase intention, and recommendation intention, which are the cores of customer patronage, is also supported in the previous retail studies (see, e.g., Cronin et al. 2000, Khan and Rahman 2015, Frasquet and Miquel 2017). Therefore, we hypothesize that perceived service convenience (H8) and satisfaction (H9) positively affect patronage intention to a retail brand. Based on the reviews, a conceptual model is developed (See Figure 1).

# 3. Method
3.1. Data Collection
A scenario-based online experiment was conducted to test the developed conceptual model using a panel of a South Korean survey company. Considering different multichannel shopping environments between large versus small cities, participants were recruited from Seoul, the biggest city in South Korea, where a multichannel shopping environment is mature. An invitation email including a URL to the research website was sent to prospective participants. After being directed to the research website, participants read a shopping scenario that uses multiple channels and answered the survey questionnaire. A small monetary gift was given as a reward.

To test consumer responses to cross-channel integration without any potential interference from the impact of existing relationships with real retail brands, a fictitious retail brand was used in the scenario. The scenario consisted of a consumer's shopping process using multiple channels of a fictitious retail brand. A consumer purchases an outfit online, but it does not look good on the consumer, who thus returns it and purchases another at a store. To facilitate participants to experience different levels of cross-channel integration, four different types of scenarios with varying levels of channel integration were developed. Considering that order-fulfillment and promotion integrations are the most prevailing channel integration strategies, order-fulfillment integration (i.e., whether BORIS is available or not) and promotion integration (i.e., whether an online coupon is usable at a store or not) were manipulated. One of the four scenarios was randomly assigned to participants.

3.2. Measures
Most of the variables in the conceptual model were measured using measurement items adapted from the existing scales, of which the reliability and validity were established. Positive and negative experiences were measured using four items, respectively, that

Figure 1. Conceptual Model of Consumer Response to Cross-Channel Integration
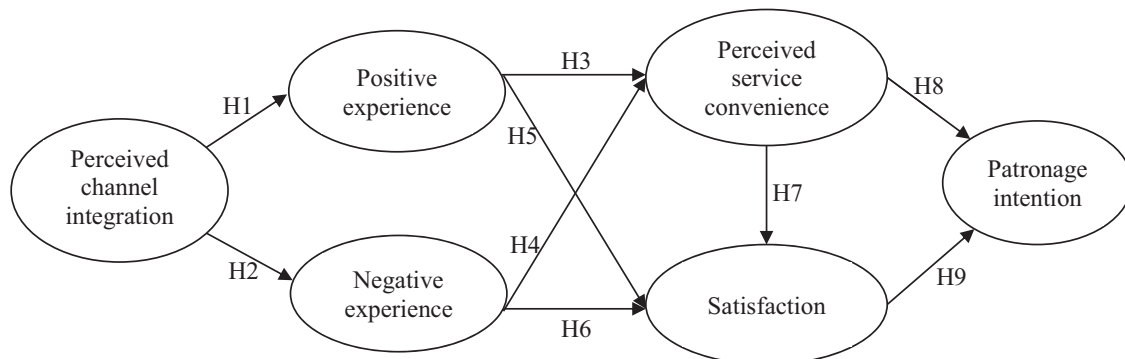
were adapted from Brakus et al.'s (2009) brand experience scale. Perceived service convenience was measured using four items adapted from Seiders et al.'s (2007) service convenience scale. Satisfaction was measured using four items adapted from the satisfaction scale of Oliver (1980). Patronage intention was measured using two items adapted from the study by Grewal et al. (2003). To measure perceived channel integration, two items that measure the degree of channel integration in terms of order fulfillment and promotion were developed. All items were measured using a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree). Demographic questions were included at the end of the questionnaire.

4. Results
4.1. Sample Description
A total of 312 responses were collected. After excluding seven incomplete responses, 305 responses were used for analysis. Among the 305 participants, 60% (n = 182) were women and 40% (n = 123) were men. Age distributions were fairly consistent. About two-thirds of participants had a college degree. In terms of occupation, 35% (n = 107) were office workers, 22% (n = 66) were housewives, 13% (n = 39) were professionals, and 9% (n = 27) were college students. Regarding monthly household incomes, 10% (n = 31) had less than $1,800,

15% (n = 47) had \$1,800 – 2,700, 21% (n = 65) had \$2,700 – 3,600, 19% (n = 57) had \$3,600 – 4,500, 13% (n = 39) had \$4,500 – 5,400, and 22% (n = 66) had equal to or more than \$5,400.

4.2. Hypotheses Testing
Because the variation of the level of perceived channel integration was facilitated using multiple scenarios, prior to the hypotheses testing, the normality of the distribution of perceived channel integration was checked. The skewness and kurtosis of perceived channel integration were −0.424 and 0.277, respectively, indicating normal distribution (George and Mallery 2003).

To test hypothesized relationships among consumer response variables, we employed covariance-based structural equation modeling (SEM) using AMOS 18.0. Following the two-step approach (Anderson and Gerbing 1988), the measurement model was tested first to assess the reliability and validity of constructs. A confirmatory factor analysis (CFA) was conducted for the measurement model (see Tables 1 and 2). The results of the CFA showed acceptable fit indices [χ^2 = 229.788 (df = 155), p < 0.001; GFI = 0.931, NFI = 0.963, CFI = 0.987, RMSEA = 0.040] and met the goodness of model fit criteria (Hair et al. 2010) because all factor loadings were greater than 0.7 and significant (p < 0.001). All average

Table 1. Measurement Items (Standardized Loadings)

Items	Factor loading
Perceived channel integration (CR = 0.70, AVE = 0.72, Cronbach's α = 0.84)	
This brand's order-fulfillment processes, such as product pickup, delivery, and returns, are integrated across retail channels.	0.854
This brand's promotions, such as coupons and sales, are integrated across retail channels.	0.843
Positive experience (CR = 0.90, AVE = 0.79, Cronbach's α = 0.94)	
The experience at this brand was positively interesting in a sensory way.	0.885
I had positive emotions while I was shopping at this brand.	0.919
I engaged in positive physical actions and behaviors while I was shopping at this brand.	0.840
I engaged in positive thinking while I was shopping at this brand.	0.911
Negative experience (CR = 0.84, AVE = 0.72, Cronbach's α = 0.91)	
The experience at this brand was negatively interesting in a sensory way.	0.848
I had negative emotions while I was shopping at this brand.	0.897
I engaged in negative physical actions and behaviors while I was shopping at this brand.	0.729
I engaged in negative thinking while I was shopping at this brand.	0.901
Perceived service convenience (CR = 0.87, AVE = 0.67, Cronbach's α = 0.89)	
This brand offered convenient locations for shopping.	0.806
It was easy to find the products I am looking for at this brand.	0.853
It was easy to evaluate the merchandise at this brand.	0.818
Deciding to shop at this brand was quick and easy.	0.803
Satisfaction (CR = 0.94, AVE = 0.85, Cronbach's α = 0.96)	
My choice to do shopping at this brand was a wise one.	0.928
I felt good about my decision to do shopping at this brand.	0.915
I think that I did the right thing when I decided to do shopping at this brand.	0.936
I am satisfied with the shopping experience at this brand.	0.901
Patronage intention (CR = 0.92, AVE = 0.90, Cronbach's α = 0.95)	
The likelihood that I would shop at this brand is high.	0.960
I would be willing to buy products at this brand.	0.937

Note. χ^2 = 229.788 (df = 155) p < 0.001, χ^2/df = 1.483, GFI = 0.931, NFI = 0.963, CFI = 0.987, RMSEA = 0.040, CR = construct reliability.

Table 2. Means, Standard Deviations, Construct Correlations, and Average Variance Extracted (Diagonal Elements)

	Mean	SD	Perceived channel integration	Positive experience	Negative experience	Perceived service convenience	Satisfaction	Patronage intention
Perceived channel integration	4.29	1.39	0.72					
Positive experience	4.19	1.19	0.812	0.79				
Negative experience	3.75	1.25	−0.572	−0.683	0.72			
Perceived service convenience	4.64	0.97	0.575	0.533	−0.428	0.67		
Satisfaction	4.35	1.16	0.842	0.802	−0.638	0.686	0.85	
Patronage intention	4.52	1.19	0.804	0.709	−0.501	0.695	0.822	0.90

variance extracted (AVE) for each construct was greater than 0.6. All construct reliability (CR) for each construct was equal to or greater than 0.7. All measurement items had adequate internal consistency because all of the Cronbach's alpha-values calculated to test the reliability of measurement items were higher than 0.8. Based on these results satisfying criteria (Hair et al. 2010), convergent validity was established. To test discriminant validity, we compared AVE estimates and squares of correlations between constructs. For every pair of two constructs, both AVE estimates of the two constructs were greater than the square of those two constructs' correlation, confirming discriminant validity.

To test H1-9, the structural model was tested. The model fit of the structural model met the goodness of model fit criteria (Hair et al. 2010) [χ^2 = 337.319 (df = 161), $p < 0.001$; NFI = 0.945, CFI = 0.970, RMSEA = 0.060]. All hypothesized paths were significant, except that the path represents the effect of negative experience on perceived service convenience (Table 3). Perceived channel integration increased positive experience (β = 0.885, t = 15.600, $p < 0.001$), whereas it mitigated negative experience ($\beta = -0.673$, $t = -11.438$, $p < 0.001$).

Positive experience positively influenced perceived service convenience (β = 0.472, t = 6.568, $p < 0.001$), whereas negative experience did not influence perceived service convenience significantly (p = 0.087). Positive experience increased satisfaction (β = 0.563, t = 10.899, $p < 0.001$), whereas negative experience decreased satisfaction ($\beta = -0.135$, $t = -3.083$, $p < 0.01$). Perceived service convenience increased both satisfaction (β = 0.323, t = 7.300, $p < 0.001$) and patronage intention (β = 0.240, t = 4.409, $p < 0.001$). Lastly, satisfaction positively affected patronage intention (β = 0.662, t = 11.927, $p < 0.001$). Based on these results, all hypotheses among H1-9, except H4, were supported.

We expected that negative experience would negatively influence perceived service convenience. However, the effect was not significant. This might result from consumers' low expectations for cross-channel integration. Although multichannel retailers' operational practices geared toward integrating channels are increasing, the implementation of cross-channel integration strategies has been a difficult challenge to tackle. Many retailers continue to struggle with cross-channel integration. Given this circumstance, consumers' expectations for cross-channel integration might

Table 3. SEM Results

Path	Standardized estimates	T statistics
H1. Perceived channel integration → positive experience	0.885***	15.60
H2. Perceived channel integration → negative experience	−0.673***	−11.44
H3. Positive experience → perceived service convenience	0.472***	6.57
H4. Negative experience → perceived service convenience	−0.120	−1.71
H5. Positive experience → satisfaction	0.563***	10.90
H6. Negative experience → satisfaction	−0.135**	−3.08
H7. Perceived service convenience → satisfaction	0.323***	7.30
H8. Perceived service convenience → patronage intention	0.240***	4.41
H9. Satisfaction → patronage intention	0.662***	11.93

Note. χ^2 = 337.319 (df = 161) $p < 0.001$, χ^2/df = 2.095, NFI = 0.945, CFI = 0.970, RMSEA = 0.060.
**$p < 0.01$; ***$p < 0.001$.

still be low; thus, even if consumers have negative experience due to frictions between channels, they might not perceive inconveniences.

5. Discussion and Conclusion
5.1. Theoretical Implications

Despite increasing attention given to cross-channel integration in retailing research, an understanding of the impact of cross-channel integration on consumer behavior is still lacking. In particular, little is known about how the retail brand experience is affected by channel integration. Because consumers' channel utilization is increasingly getting complex, channel integration service has become a critical criterion to choose a retailer, influencing perception and evaluation of a retail brand. The effect of cross-channel integration needs to be investigated at a retail brand level. Previous studies on retail experience have focused on single-channel experience, either online experience (see, e.g., Rose et al. 2012 and Trevinal and Stenger 2014) or offline experience (see, e.g., Ofir and Simonson 2007 and Bagdare and Jain 2013). Interactions and reciprocal influence among different channel experiences were noted (Khan and Rahman 2015). But few studies empirically examined retail brand experience that arises while consumers go through a cross-channel shopping process. By noting today's consumers' complex channel utilization pattern, the current study revealed how retail brand experience shapes in an omnichannel context. The findings of this research shed new light not only on the omnichannel research area but also on the retail brand research area.

To date, many studies have categorized consumers as online versus offline consumers based on their purchase channel regardless of other channels adopted in other shopping stages (i.e., information search, pick up, return, etc.) and measured the utility of each channel based only on sales. This approach has produced controversial and confounding results regarding the effect of channel expansion. Whereas some studies have found that the addition of a new channel cannibalizes consumers of pre-existing channels (see, e.g., Kollmann et al. 2012 and Baal 2014), other studies have confirmed the positive effect of channel expansion (see, e.g., Kwon and Lennon 2009 and Soysal and Krishnamurthi 2015). However, today's consumers' channel utilization shows a much more complex pattern. Consumers who purchase primarily offline also go online to search for information, and the reverse is also true for consumers who purchase mostly online. Our results imply that the channel expansion issue needs to be approached from the perspective of an omnichannel system that can create synergy rather than the utility of individual channels. Research on an effective omnichannel system that configures a convenient cross-channel shopping environment and efficiently supports all cross-channel shopping stages is needed.

We demonstrated that cross-channel integration affects the shaping of retail brand experience. An innovative channel integration service can work as a novel environmental stimulus that facilitates an excellent experience of a retail brand. This implies that the advantages of coordinating and harmonizing operations across different channels are not limited to cross-selling or customer service improvement but include creating a superior brand experience. A better brand experience increases key marketing factors, including satisfaction, loyalty, and brand equity, which ensure a retailer's success (Zarantonello and Schmitt 2013, Iglesias et al. 2019). To stay competitive in the rapidly changing retail environment in which cutting-edge new technologies are applied at an ever-changing pace, retailers need to build strong brand equity. Researchers need to further investigate omnichannel service strategies that can create a strong brand experience and increase retail brand value.

5.2. Managerial Implications

In the emerging omnichannel era, the success of retailers depends on cross-channel integration. According to the resource-based view, a firm's capabilities enabled by valuable and unique resources create sustainable competitive advantages (Barney 1991). In a multichannel retailing context, a well-integrated cross-channel system and omnichannel management ability can be idiosyncratic and valuable resources and capabilities, which create sustainable competitive advantages (Oh et al. 2012). Our findings suggest that channel integration can help build strong retail brand equity. From the perspective of retail brand management beyond the perspective of channel operation or service management, retailers should develop strategies to maximize synergistic interactions between different channels and achieve an optimized omnichannel system. The following practices might be helpful. First, an order-fulfillment process that is a decisive stage blurring the boundary between online and offline should be integrated. Although BOPIS and BORIS are now the basic and least services required for omnichannel management, some retailers are still not providing these services due to limited resources. Some retailers that are currently employing these services do not provide them at all their stores. A store management strategy that can efficiently support the pickup and return of online purchases with minimal cost and resources needs to be developed. Strategic partnerships that allow using partners' offline assets could be an option. Current order-fulfillment integration services also can be improved by adding simple functions such as mixed cart order that allows choosing both direct ship and BOPIS for selected items, respectively, in one order. Second, promotion should be carefully coordinated between different channels. Offline coupons need to include codes that allow consumers to use them online, and online codes should be designed to be redeemable

at stores. Channel-specific promotions should clearly indicate exclusivity so that consumers do not experience any unexpected inconvenience. Lastly, information management should also be integrated. The real-time store inventory information needs to be provided online. Customer data storage and management plans should be systematically designed so that the data can be efficiently shared and utilized between different channels.

5.3. Limitations and Future Research Directions

The current study examined consumer responses to cross-channel integration through an experimental study. Because experimental studies can involve the external validity issue, the generalizability of the results might be questioned. This raises the need for future research that uses data from actual multichannel retailers. With data from real retailers, analysis of pre-existing consumer variables is also possible; thus more ample information will be able to be drawn. As an early-stage study empirically examining retail brand experience in an omnichannel context, this study focused on testing the causal relationship between perceived channel integration and retail brand experience. Thus, a fictitious retail brand was used, and pre-existing brand-related variables were not included. However, consumer variables like attitude, expectation, and loyalty have been employed as moderators in many previous brand studies (see, e.g., Chung et al. 2014 and Choi et al. 2018), and such variables can result in different consequences. In our results, the effect of negative experience on perceived service convenience was not significant, and low expectation for cross-channel integration was suggested as a reason. The moderating role of expectation needs to be further investigated using real retail brand data.

With the long-lasting lockdown during the pandemic, online shopping has increased remarkably, and consumers have experienced various new fulfillment services such as contactless curbside pickup. As consumers experience new cross-channel services, their perceptions and expectations of cross-channel integration would change. The differences due to this change also might be considered in future research. Postpandemic consumers who have rich experiences of cross-channel services might respond to channel integration differently.

References

Anderson JC, Gerbing DW (1988) Structural equation modeling in practice: a review and recommended two-step approach. *Psychol. Bull.* 103(3):411–423.

Andreini D, Pedeliento G, Zarantonello L, Solerio C (2018) A renaissance of brand experience: Advancing the concept through a multi-perspective analysis. *J. Bus. Res.* 91:123–133.

Baal S (2014) Should retailers harmonize marketing variables across their distribution channels? An investigation of cross-channel effects in multi-channel retailing. *J. Retailing Consum. Serv.* 21: 1038–1046.

Babin BJ, Darden WR, Babin LA (1998) Negative emotions in marketing research: Affect or artifact? *J. Bus. Res.* 42:271–285.

Bagdare S, Jain R (2013) Measuring retail customer experience. *Int. J. Retail Distrib. Management* 41(10):790–804.

Bapat D, Thanigan J (2016) Exploring relationship among brand experience dimensions, brand evaluation and brand loyalty. *Glob. Bus. Rev.* 17(6):1357–1372.

Barney J (1991) Firm resources and sustained competitive advantage. *J. Management* 17(1):99–120.

Becker L, Jaakkola E (2020) Customer experience: fundamental premises and implications for research. *J. Acad. Marketing Sci.* 48:630–648.

Benoit S, Klose S, Ettinger A (2017) Linking service convenience to satisfaction: dimensions and key moderators. *J. Serv. Marketing* 31(6):527–538.

Berry LL, Seiders K, Grewal D (2002) Understanding service convenience. *J. Marketing* 66(3):1–17.

Bèzes C (2021) At the source of integrated interactions across channels. *Internat. J. Retail Distrib. Manag.* 49(7):899–918.

Brakus JJ, Schmitt BH, Zarantonello L (2009) Brand experience: what is it? How is it measures? Does it affect loyalty? *J. Marketing* 73:52–68.

Cao L, Li L (2015) The impact of cross channel integration on retailers' sales growth. *J. Retailing* 91(2):198–216.

Choi Y, Thoeni A, Kroff MW (2018) Brand actions on social media: Direct effects on electronic word of mouth (eWOM) and moderating effects of brand loyalty and social media usage intensity. *J. Relationsh. Marketing* 17(1):52–70.

Chung K, Youn C, Lee Y (2014) The influence of luxury brands' cross-border acquisition on consumer brand perception. *Cloth. Text. Res. J.* 32(4):219–234.

Cleff T, Lin IC, Walter N (2014) Can you feel it? The effect of brand experience on brand equity. *IUP J. Brand Management* 11(2):7–22.

Coelho F, Easingwood C (2003) Multiple channel structures in financial services: a framework. *J. Financ. Serv. Marketing* 8(1):22–34.

Cotarelo M, Calderón H, Fayos T (2021) A further approach in omnichannel LSQ, satisfaction and customer loyalty. *Int. J. Retail Distrib. Management* 49(8):1133–1153.

Cronin JJ, Brady MK, Hult GTM (2000) Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *J. Retailing* 76(2):193–218.

Ding CG, Tseng TH (2015) On the relationships among brand experience, hedonic emotions, and brand equity. *Eur. J. Marketing* 49(7/8):994–1015.

Emrich O, Paul M, Rudolph T (2015) Shopping benefits of multichannel assortment integration and the moderating role of retailer type. *J. Retailing* 91(2):326–342.

Frasquet M, Miquel MJ (2017) Do channel integration efforts pay-off in terms of online and offline customer loyalty? *Int. J. Retail Distrib. Management* 45(7/8):859–873.

Galipoglu E, Kotzab H, Teller C, Yumurtaci Hüseyinoglu IÖ, Pöppelbuß J (2018) Omni-channel retailing research – state of the art and intellectual foundation. *Int. J. Phys. Distrib. Logist. Management* 48(4):365–390.

George D, Mallery P (2003) *SPSS for Windows Step By Step: A Simple Guide and Reference 11.0 Update.* (Allyn & Bacon, Boston, MA)

Goersch D (2002) Multi-channel integration and its implications for retail web sites. Proceedings of the 10th European Conference on Information System, ECIS, Wrycza S, ed., pp. 748–758.

Grewal D, Baker J, Levy M, Voss GB (2003) The effects of wait expectations and store atmosphere evaluations on patronage intentions in service-intensive retail stores. *J. Retailing* 79:259–268.

Hair JF, Black WC, Babin BJ, Anderson RE (2010), *Multivariate Data: A Global Perspective*, vol. 7 (Pearson Education, Inc., Upper Saddle River, NJ).

Heiman A, Reardon T, Zilberman D (2022) The effects of COVID-19 on the adoption of "On-the-Shelf Technologies": Virtual dressing room software and the expected rise of third-party reverse-logistics. *Serv. Sci.* 14(2):179–194.

Herhausen D, Binder J, Schoegel M, Herrmann A (2015) Integrating bricks with clicks: retailer-level and channel-level outcomes of online-offline channel integration. *J. Retailing* 91(2):309–325.

Hsieh Y, Roan J, Pant A, Hsieh J, Chen W, Lee M, Chiu H (2012) All for one but does one strategy work for all? Building consumer loyalty in multi-Channel distribution. *Management Serv. Qual.* 22(3):310–335.

Iglesias O, Markovic S, Rialp J (2019) How does sensory brand experience influence brand equity? Considering the roles of customer satisfaction, customer affective commitment, and employee empathy. *J. Bus. Res.* 96:343–354.

Jocevski M, Arvidsson N, Miragliotta G, Ghezzi A, Mangiaracina R (2019) Transitions towards omni-channel retailing strategies: a business model perspective. *Internat. J. Retail Distrib. Management* 47(2):78–93.

Kazancoglu I, Aydin H (2018) An investigation of consumers' purchase intentions towards omni-channel shopping: A qualitative exploratory study. *Internat. J. Retail Distrib. Management* 46(10):959–976.

Khan I, Fatma M (2017) Antecedents and outcomes of brand experience: an empirical study. *J. Brand Management* 24(5):439–452.

Khan I, Rahman Z (2015) Brand experience anatomy in retailing: an interpretive structural modeling approach. *J. Retailing Consum. Serv.* 24:60–69.

Kollmann T, Kuckertz A, Kayser I (2012) Cannibalization or synergy? Consumers' channel selection in online–offline multichannel systems. *J. Retailing Consum. Serv.* 19(2):186–194.

Kwon W, Lennon SJ (2009) Reciprocal effects between multichannel retailers' offline and online brand images. *J. Retailing* 85(3):376–390.

Le ANH, Nguyen-Le XD (2021) A moderated mediating mechanism of omnichannel customer experiences. *Internat. J. Retail Distrib. Management* 49(5):595–615.

Lee ZWY, Chan TKH, Chong AYL, Thadani DR (2019) Customer engagement through omnichannel retailing: the effects of channel integration quality. *Ind. Marketing Management* 77:90–101.

Lemke F, Clark M, Wilson H (2011) Customer experience quality: an exploration in business and consumer contexts using repertory grid technique. *J. Acad. Marketing Sci.* 39:846–869.

Lemon KN, Verhoef PC (2016) Understanding customer experience throughout the customer journey. *J. Marketing* 80(6):69–96.

Lloyd AE, Chan RYK, Yip LSC, Chan A (2014) Time buying and time saving: effects on service convenience and the shopping experience at the mall. *J. Serv. Marketing* 28(1):36–49.

Mathwick C, Malhotra N, Rigdon E (2001) Experiential value: conceptualization, measurement and application in the catalog and Internet shopping environment. *J. Retailing* 77(1):39–56.

Morgan-Thomas A, Veloutsou C (2013) Beyond technology acceptance: brand relationships and online brand experience. *J. Bus. Res.* 66:21–27.

Nikhashemi SR, Jebarajakirthy C, Nusair K (2019) Uncovering the roles of retail brand experience and brand love in the apparel industry: non-linear structural equation modelling approach. *J. Retailing Consum. Serv.* 48:122–135.

Ofir C, Simonson I (2007) The effect of stating expectations on customer satisfaction and shopping experience. *J. Marketing Res.* 44(1):164–174.

Oh L, Teo H, Sambamurthy V (2012) The effects of retailer channel integration through the use of information technologies on firm performance. *J. Oper. Management* 30:368–381.

Oliver RL (1980) A cognitive model of the antecedents and consequences of satisfaction decisions. *J. Marketing Res.* 17(November):460–469.

Paik H, Lee JH (2021) Analytical framework, typology and retail experience design process for integrated relational brand experience. *Int. J. Retail Distrib. Management* 49(4):466–490.

Pan Y, Zinkhan GM (2006) Determinants of retail patronage: a meta-analytical perspective. *J. Retailing* 82(3):229–243.

Park CW, MacInnis DJ, Priester J, Eisingerich AB, Iacobucci D (2010) Brand attachment and brand attitude strength: Conceptual and empirical differentiation of two critical brand equity drivers. *J. Marketing* 74(6):1–17.

Pham MT (2004) The logic of feeling. *J. Consum. Psychol.* 14(4):360–369.

Pham MT, Cohen JB, Pracejus JW, Hughes GD (2001) Affect monitoring and the primacy of feelings in judgment. *J. Consumer Res.* 28(2):167–188.

Ramaseshan B, Stein A (2014) Connecting the dots between brand experience and brand loyalty: The mediating role of brand personality and brand relationships. *J. Brand Management* 21(7):664–683.

Rose S, Clark M, Samouel P, Hair N (2012) Online customer experience in e-retailing: an empirical model of antecedents and outcomes. *J. Retailing* 88(2):308–322.

Ruiz-Molina ME, Gómez-Borja M-Á, Mollá-Descals A (2021) Can offline–online congruence explain online loyalty in electronic commerce? *Internat. J. Retail Distrib. Management* 49(9):1271–1294.

Savastano M, Bellini F, D'Ascenzo F, De Marco M (2019) Technology adoption for the integration of online–offline purchasing: Omnichannel strategies in the retail environment. *Internat. J. Retail Distrib. Management* 47(5):474–492.

Schramm-Klein H, Morschett D (2006) Retail channel portfolios: channel-attributes or integration-benefit – what counts more? *Eur. Adv. Consumer Res.* 7:377–384.

Seiders K, Voss GB, Godfrey AL, Grewal D (2007) SERVCON: developing and validation of a multidimensional service convenience scale. *J. Acad. Marketing Sci.* 35(1):144–156.

Shen XL, Li YJ, Sun Y, Wang N (2018) Channel integration quality, perceived fluency and omnichannel service usage: the moderating roles of internal and external usage experience. *Decis. Support Syst.* 109:61–73.

Sorkun MF, Yumurtacı Hüseyinoğlu IÖ, Börühan G (2020) Omni-channel capability and customer satisfaction: mediating roles of flexibility and operational logistics service quality. *Internat. J. Retail Distrib. Management* 48(6):629–648.

Sousa R, Voss CA (2006) Service quality in multichannel services employing virtual channels. *J. Serv. Res.* 8(4):356–371.

Soysal G, Krishnamurthi L (2015) How does adoption of the outlet channel impact customers' spending in the retail stores: conflict or synergy? *Management Sci.* 62(9):2692–2704.

Thygesen A (2018) Beyond the traditional marketing funnel–A new formula for growth. Retrieved November 7, 2020, https://www.thinkwithgoogle.com/consumer-insights/consumer-trends/marketing-funnel/.

Trevinal AM, Stenger T (2014) Toward a conceptualization of the online shopping experience. *J. Retailing Consumer Serv.* 21(3):314–326.

Verhoef PC, Kannan PK, Inman JJ (2015) From multi-channel retailing to omni-channel retailing. Introduction to the special issue on multi-channel retailing. *J. Retailing* 91(2):174–181.

Westbrook RA (1987) Product/consumption-based affective responses and postpurchase processes. *J. Marketing Res.* 24(3):258–270.

Yrjölä M, Saarijärvi H, Nummela H (2018) The value propositions of multi-, cross-, and omni-channel retailing. *Internat. J. Retail Distrib. Management* 46(11-12):1133–1152.

Zarantonello L, Schmitt BH (2013) The impact of event marketing on brand equity: The mediating roles of brand experience and brand attitude. *Internat. J. Advert.* 32(2):255–280.

Zeithaml VA (1988) Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *J. Marketing* 52(3):2–22.

Zhang M, Li Y, Sun L, Moustapha FA (2022) Integrated store service quality measurement scale in omni-channel retailing. *Internat. J. Retail Distrib. Management* 50(7):839–859.