

Article

Revitalization of Offline Fashion Stores: Exploring Strategies to Improve the Smart Retailing Experience by Applying Mobile Technology

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Abstract: With the reduction in offline fashion stores, retailers are trying to revitalize offline stores by applying smart retail technologies. This study aimed to determine how factors related to the offline–mobile connected smart retailing experience affected satisfaction through perceived quality and perceived risk. An online survey was conducted on female consumers in their 20s and 30s, and 302 questionnaires were distributed. The analysis, which utilized a structural equation model, confirmed that, from among five smart retailing experience-related factors, perceived advantage, perceived enjoyment, and interactivity affected perceived quality and that perceived advantage and interactivity significantly affected perceived risk. However, perceived control and personalization did not affect perceived quality and perceived risk. Furthermore, perceived quality significantly affected overall satisfaction, offline satisfaction, and mobile satisfaction, while perceived risk did not affect mobile satisfaction. This study confirmed that the perceived advantage and interactivity of smart retailing experiences play an important role in enhancing customer satisfaction.

Keywords: smart retailing experience; perceived advantage; perceived enjoyment; perceived control; personalization; interactivity; perceived quality; perceived risk; satisfaction



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1. Introduction

With the development of information and communication technology, online and mobile consumption is rapidly increasing, while traditional offline sales are decreasing. Specifically, due to the development of e-commerce, the need for offline stores has rapidly declined, and the number of offline stores has decreased accordingly. In particular, as the recent pandemic continues, department store chains such as Macy's, Sears, and JCPenney have closed several branches, as have famous brands such as Polo and Abercrombie & Fitch. According to a *Wall Street Journal* report, more than 5000 retail stores have closed in the United States since April, 2020 [1]. As the “untact” lifestyle spreads further, the scale of e-commerce has gradually increased, and the COVID-19 pandemic has become an opportunity for e-commerce brands to grow rapidly, while offline-based companies are responding to crises by expanding omnichannel strategies. The omnichannel strategy is one that can reduce risks and increase opportunities for companies because it employs various channels such as offline, online, and mobile. However, even if the retail environment is changing, offline stores are an important retail channel for fashion consumers who want to inspect products for quality and purchase them immediately. Accordingly, many fashion companies are striving to provide opportunities for offline stores to move forward while also increasing online and mobile growth through retailing strategies using various channels, such as omnichannels.

McKinsey [2] suggested that traditional offline stores should redesign the in-store shopping experience as a strategy for responding to changes in the retail sector. The goal of strategies centered on customer experience is to engage consumers, become part of their lives and memories, and foster an emotional bond between the company and the customer [3]. Consumers want more than products; they also want experiences, for which

they show willingness to pay more [3]. As a result, many new marketing approaches, including experiential marketing and sensory marketing, have emerged [4,5]. Retailers are striving to meet the customers' changing expectations by providing new technologies and services, allowing consumers to easily access various channels within a store and optimizing the customer-centered shopping experience [6]. For fashion retailers specifically, as developing hedonistic experiences is particularly important, they are increasingly investing in experiential retail services [7].

In line with these changes, many fashion stores are evolving into smart shopping spaces that maximize consumer convenience by utilizing cutting-edge technology. Accordingly, a new concept called "smart retailing" has emerged. Smart retailing refers to a platform where retailers offer customers smart technologies to recreate and strengthen their role in a sustainable economy and improve consumer experience quality [8]. Thus, fashion retailers are trying to revitalize offline stores by introducing advanced technology to provide a variety of shopping experiences, such as convenient shopping experiences, product-related experiences, and customized services tailored to individual consumers, thereby evolving into smart retailing environments. Recently, retailers have been using various smart retail technologies, such as artificial intelligence (AI), augmented reality (AR), virtual reality (VR) interactive displays, smart shopping carts, radio frequency identification systems (RFID), shopping assistance systems, and near-field communication systems (NFC). Such smart technology can improve the consumer experience by providing excellent and customized retail services [9,10]. In particular, as a large part of smart retail technology (e.g., AR, QR codes, NFC, etc.) is delivered by connecting with consumers' mobile devices, there is a growing need to explore smart technology that links offline and mobile shopping environments and related consumer experiences.

As technologically sophisticated retail services gradually expand, it is necessary to examine how consumer experiences with smart retail technology are structured and what outcomes these experiences will achieve. Research has been conducted on smart retail technologies, such as AR and VR [11–19], shopping assistants, and RFID [20–23], as well as factors that induce consumer adoption of smart retail technology [24–27]. However, prior studies have mainly focused on how technical characteristics affect consumer perceptions, intentions, or behaviors. To date, research on consumer experiences in an offline store environment that utilizes smart retail technology has been insufficient, and it is particularly difficult to find studies on consumer experiences with mobile and smart technology use in fashion stores. This study aimed to examine the offline–mobile smart retailing experience in fashion stores from the consumer's point of view and the effect of that experience on customer satisfaction through consumer evaluation. The research questions specifically devised to achieve the research objectives were as follows. First, how would the smart retailing experience factors in fashion offline stores affect consumers' evaluation and satisfaction? Second, what are the important smart retailing experience factors that influence customer satisfaction?

2. Theoretical Background and Research Hypotheses

2.1. Smart Retailing Experience

Smart retailing represents a differentiated stage of information and communication technology development, in which the physical and digital dimensions of retailing are combined [8,27]. Whereas traditional retailing emphasizes retail channels and dual interactions (i.e., the relationship between retailers and consumers), smart retailing emphasizes interactions between customers, smart devices, products, retailers, and retail channels. Smart retailing enables interconnections between smart devices through wireless technology and enables the connection of offline and mobile channels in a retail context. As such, through smart retailing that connects the physical and digital worlds, retailers can acquire new capabilities [28,29]. In addition, by using various smart retail technologies, shopping value can be created for customers and the customer shopping experience can be improved [27]. Since customer experience affects consumers' preferences and purchasing decisions, and

plays an important role in deciding a company's success [30], it is important to obtain positive outcomes from smart retailing experiences.

In this study, we considered smart retailing to be an offline–mobile interconnected retail system that improves customer experience based on smart technology use, and attempted to examine the impact of such smart retailing experiences. Therefore, a “smart retailing experience” was defined as “a technology-mediated retailing experience that links offline and mobile environments.” Recently, retailers have been changing the retail environment to enhance the consumer experience by using smart retail technologies that utilize mobile applications in stores, such as augmented reality, QR codes, and payment systems. In offline stores, consumers can enjoy a seamless smart retailing experience, such as using their mobile devices to access additional product information. The mobile-linked smart retailing experience addressed in this study can be connected to performance through consumer evaluation, as the partnership between customers and retailers is the foundation. Therefore, compared to retail technology that is unilaterally provided by offline stores, mobile-linked technology is thought to be able to further enhance consumer experience in that consumers must experience it through their mobile devices.

2.2. Research Framework

Internet and mobile technologies have provided retailers with opportunities to retain existing customers and acquire new ones through personalized offers and in-store push notifications [31]. Recent empirical evidence has confirmed that, compared to traditional shopping experiences that do not utilize technology, smart retail technology is simpler, easier to use, more attractive, and provides a more meaningful customer experience [32–34]. As such, retailers are recognizing that smart retail technology provides a retail experience that drives customer satisfaction. Therefore, to increase both operational efficiency and profits, retailers now encourage customers to actively use smart retail technology in their stores.

Technology adoption theory can help explain corporate outcomes of potential customer experiences related to smart retailing technology. According to technology adoption theory, the relationship between system attributes and outcomes can be mediated by user evaluation of the technology [35,36]. By applying the technology adoption framework, previous studies showed that quality and risk perception play important mediating roles in services connecting various channels [37–40]. Thus, improvements in perceived quality and reductions in perceived risk for technology-related products and services have been shown to positively effect retailer performance. Therefore, in this study, we aimed to identify how factors related to the smart retailing experience influence customer satisfaction through the mediators of perceived quality and perceived risk.

2.3. Smart Retailing Experience and Customer Evaluation

For decades, retail marketing researchers have explored the relationship between in-store retail environments and consumer experiences [13,41–43]. With the advent of smart technology, the number of contact points between companies and consumers has increased, making it necessary to monitor various experiences created at those contact points. Technology-related consumer experiences are known to be formed by combining factors from several areas, such as perception, cognition, behavior, and emotion [44].

Previous studies on smart retailing experiences examined several related factors, including cognitive factors, such as relative advantages [45] and perceived interaction [10]; emotional factors, such as perceived enjoyment [46,47] and perceived control [48]; and behavioral factors, such as personalization [8,49]. Further, as the smart retailing experience includes direct interaction with a customer's smart technology [50,51], this study also focused on cognitive, emotional, and behavioral factors. Specifically, we aimed to investigate the effects of the following five smart retailing experience factors: perceived benefits, perceived enjoyment, perceived control, personalization, and interactivity.

The first element of the smart retailing experience is perceived advantages, which refers to the degree to which consumers perceive smart technology in a retail environment to be superior to existing retail technology [52] and reflects advantages in terms of technology, convenience, and function [53]. Customers are more likely to have a favorable opinion of technology if it provides benefits above what they could expect without it, such as time-saving and convenience [24,54]. Therefore, the following hypotheses were established:

Hypothesis 1a (H1a). *Perceived advantages in the smart retailing experience will have a positive effect on perceived quality.*

Hypothesis 2a (H2a). *Perceived advantages in the smart retailing experience will have a negative effect on perceived risk.*

The second factor, perceived enjoyment, is the degree to which consumers view smart retailing experiences as being enjoyable [46]. Perceived enjoyment emphasizes the emotional aspect of the smart retailing experience apart from its potential functional performance. Consumers can experience novelty through using smart retailing technology, which is linked to the fun or pleasure of the retail experience [55]. Previous studies have shown that enjoyment in using a specific type of information technology affects positive attitudes or intentions [56] and can significantly influence retailer success [57]. Therefore, it was expected that perceived enjoyment in the smart retailing experience would increase perceived quality and lower perceived risk, hypothesized as follows:

Hypothesis 1b (H1b). *Perceived enjoyment in the smart retailing experience will have a positive effect on perceived quality.*

Hypothesis 2b (H2b). *Perceived enjoyment in the smart retailing experience will have a negative effect on perceived risk.*

The third factor is perceived control, indicating the degree to which consumers perceive themselves to be in control when using smart retailing technology [58]. Studies reported that when individuals encounter an event with high uncertainty, believing they can maintain psychological control tends to alleviate negative experiences, such as avoidance intention, and facilitate positive experiences, such as satisfaction. [59,60]. Tucker [61] suggested that the overall control consumers perceive when using online services can significantly reduce purchase-related risks. Further, previous research has shown that smart service business customers view lack of control options as a major obstacle to smart service adoption, and such customers express a strong desire for control [10,62]. Thus, the following hypotheses were established with the expectation that consumers can increase perceived quality and reduce risk if they can exercise control to achieve their shopping goals and obtain desirable results:

Hypothesis 1c (H1c). *Perceived control in the smart retailing experience will have a positive effect on perceived quality.*

Hypothesis 2c (H2c). *Perceived control in the smart retailing experience will have a negative effect on perceived risk.*

The fourth factor is personalization. Technology-mediated personalization is based on information technology [63], and smart retail technology's ability to provide personalized or customized services to consumers is personalization in a smart retail environment [49]. This is a behavioral aspect of the smart retailing experience. Smart retail technology enables technology-based personalization by combining historical and real-time data to individual customers in stores to provide relevant and context-sensitive information.

Through personalization, companies can promote quality improvement, increase consumer value, and improve satisfaction [64,65]. Thus, it was expected that personalization would positively affect perceived quality and negatively affect perceived risk, hypothesized as follows:

Hypothesis 1d (H1d). *Personalization in the smart retailing experience will have a positive effect on perceived quality.*

Hypothesis 2d (H2d). *Personalization in the smart retailing experience will have a negative effect on perceived risk.*

The fifth factor, interaction, is a multidimensional concept that can be divided into three categories: user-to-user, user-to-content, and user-to-system [66]. Among them, user-to-system interactivity occurs when consumers create or use data [67,68]. As technology advances and new media evolves, the concept of interaction is also changing [66]. The perceived interaction within smart retail experiences is related to the overall assessment of smart retail technology and consumer interaction [69]. Moreover, as interactive experiences during technology use evoke the strongest emotions and reactions in users [70], interactive experiences can leave a deep impression on a consumer's memory [71]. Technology-based interactions can increase user interactions with brands and, ultimately, increase customer satisfaction [18]. Therefore, the following hypotheses were established:

Hypothesis 1e (H1e). *Interactivity in the smart retailing experience will have a positive effect on perceived quality.*

Hypothesis 2e(H2e). *Interactivity in the smart retailing experience will have a negative effect on perceived risk.*

2.4. Customer Evaluation and Smart Retailing Experience Outcomes

Based on the theory of technology adoption, this study explored how the smart retailing experience influences customer satisfaction through perceived quality and perceived risk. Satisfaction is a concept that reflects the degree to which consumers believe that a consumption experience evokes positive emotions [72]. Satisfaction is a criterion for evaluating a company's performance [73], and achieving customer satisfaction is important to retailers because it has the potential to impact consumer behavioral intentions and retention [74]. In this study, outcome variables related to the smart customer experience were divided into offline satisfaction, mobile satisfaction, and overall satisfaction.

Prior research on channel recognition emphasized that perceived quality and risk are important drivers of overall customer satisfaction according to the technology adoption framework [40]. Perceived quality refers to the overall assessment of a store's perceived performance [75]. It is a concept distinct from objective quality [76] and can help companies differentiate themselves by providing improved satisfaction, encouraging repeat purchases, and building customer loyalty [75]. Previous studies have shown a positive relationship between perceived quality and customer satisfaction [77–82]. For example, Zhao et al. [81] found that cognitive-based service quality had a positive effect on satisfaction, and Yang et al. [82] showed that the perceived quality influences satisfaction in online and mobile-integrated environments. As such, consumers' positive evaluations of perceived quality can lead to customer satisfaction.

Conversely, perceived risk, which differs from objective risk, is defined as the degree to which consumers perceive the dangers in the process of use, and the degree of anxiety they feel about unexpected results that may occur when purchasing or using a product [83]. Thus, perceived risk is the overall assessment of the uncertainty and negative consequences of a retail experience [84]. Perceived risk depends on the likelihood of negative consequences arising from using a product or service and the severity of losses such consequences may cause [85]. Previous studies have indicated that perceived

risk increases with new products, higher prices, technical complexity, and lack of experience or confidence in use [86,87]. If risk is perceived in relation to a technology-based, offline–mobile connected smart retailing experience, it is expected that this would lead to negative consumer evaluations and reduced satisfaction. In this study, we assumed that the perceived quality of the offline-mobile connected smart retailing experience would constitute a positive effect on overall satisfaction, as well as offline and mobile satisfaction, while perceived risk would have a negative effect. Accordingly, the following hypotheses were established:

Hypothesis 3 (H3). *Perceived quality in the smart retailing experience will have a positive effect on (a) overall satisfaction, (b) offline satisfaction, and (c) mobile satisfaction.*

Hypothesis 4(H4). *Perceived risk in the smart retailing experience will have a negative effect on (a) overall satisfaction, (b) offline satisfaction, and (c) mobile satisfaction.*

Figure 1 shows the study’s research model designed based on the above. According to this research model, we aimed to explore the impact of the smart retailing experience on customer satisfaction through consumer evaluations and clarify the important factors that influence consumer satisfaction in this process.

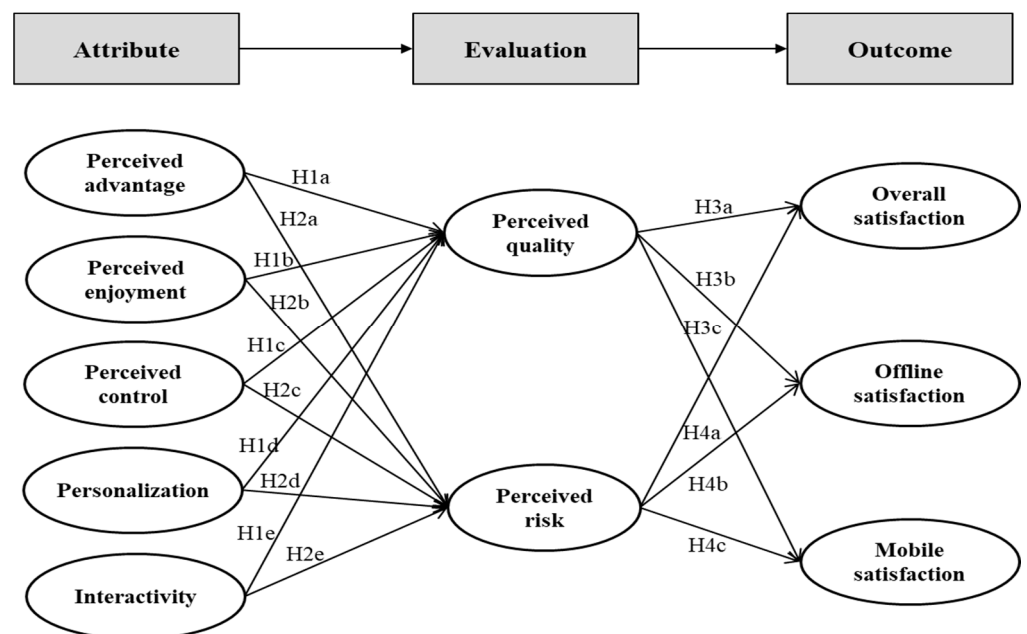


Figure 1. Research model.

3. Methodology

3.1. Participants

For empirical verification of the research hypothesis, an online survey was conducted from 20–27 July 2019, with 302 female fashion consumers in their 20s and 30s residing in the Korean metropolitan area. Participants were selected from a panel of specialized research institutes who had had experience with using mobile apps in offline fashion stores within the last year. Participants voluntarily participated in the survey and were informed in writing that the survey was conducted anonymously and that there was no compensation for completing the questionnaire.

Women in their 20s and 30s tend to be more involved in fashion than men, purchase more fashion products, and use various shopping channels [88,89]. Further, individuals in this generation are generally familiar with multichannel shopping using both offline and mobile channels. Therefore, the survey was conducted with female consumers in this age

group residing in a metropolitan area in Korea. Of the participants, 42.73% (128) were in their 20s and 57.3% (172) were in their 30s; 73.3% (220) were single and 26.7% (80) were married (Table 1). Once the data were collected, frequency and reliability analyses using SPSS were performed, and identification factor analysis and structural equation modeling analysis were performed using AMOS 18.0.

Table 1. Sample description.

Characteristics	Frequency	Percentage	Characteristics	Frequency	Percentage
Age			Average monthly household income (Unit: 10,000 won)		
20–29	128	42.3	Less than 200	25	8.3
30–39	174	57.6	More than 200–less than 300	63	20.9
Marital status			More than 300–less than 400	45	14.9
Single	221	73.2	More than 400–less than 500	38	12.6
Married	81	26.8	More than 500–less than 600	38	12.6
Education			More than 600–less than 800	41	13.6
Less than High school graduate	22	7.3	More than 800–less than 1000	24	7.9
College student	41	13.6	More than 1000	28	9.3
College degree	221	73.2	Average monthly fashion product purchase cost (Unit: 10,000 won)		
Master's/Doctoral degree	18	6.0	Less than 10	55	18.2
Occupation			More than 10–less than 20	108	35.8
Student	51	16.9	More than 20–less than 30	74	24.5
Office work	166	55.0	More than 30–less than 40	32	10.6
Management/Professional	25	8.2	More than 40–less than 50	13	4.3
Functional	12	4.0	More than 50	20	6.6
Service	16	5.3			
Freelancer	14	4.6			
Etc.	18	6.0			

3.2. Procedure and Measures

An online survey was conducted to verify the research model. Participants responded to the questionnaire after watching a video on the smart retailing experience. The survey collected demographic information and included 12 questions related to the smart retailing experience: 2 questions on perceived quality, 2 questions on perceived risk, and 3 questions each on overall satisfaction, offline satisfaction, and mobile satisfaction. There were also 12 questions related to the 5 elements of the smart retailing experience: 3 items on perceived advantages from Venkatraman [90], 2 items on perceived enjoyment from Kim et al. [28] and Wang et al. [55], and 2 items of perceived control from Nysveen et al. [91]. In addition, 3 items related to personalization from Pitta et al. [92] and 2 items related to interactivity from Kim and Niehm [93] were included. Perceived quality was assessed using 2 questions from Herhausen et al. [39] in terms of goods and services, and perceived risk consisted of 2 questions from Meuter et al. [33]. Satisfaction was classified into overall satisfaction, offline satisfaction, and mobile satisfaction, using 3 questions from Roy et al. [34]. The specific questions used in the survey are shown in Table 2. All of the questionnaires were rated on a 7-point scale (1 = strongly disagree, 7 = strongly agree). For the collected data, reliability analysis was performed using SPSS 23.0 and confirmatory factor analysis and structural equation modeling were performed using AMOS 18.0.

Table 2. The result of confirmatory factor analysis.

Construct	Item	Standardized Factor Loading	t-Value	Cronbach's α	AVE	CR
PA (Perceived advantage)	Using mobile apps while shopping in-store is more convenient than other retail technologies.	0.814	- ^a	0.843	0.648	0.979
	It is easier to use mobile app in-store compared to other retail technologies.	0.803	14.71 ***			
	Using the mobile app in-store gives me a better shopping experience.	0.797	14.588 ***			
PE (Perceived enjoyment)	I have fun interacting with mobile app in-store.	0.903	- ^a	0.906	0.828	0.968
	Using mobile app in-store provides me with a lot of enjoyment.	0.917	20.471 ***			
PC (Perceived control)	When using mobile app in-store, I feel in control.	0.712	- ^a	0.702	0.546	0.927
	When using mobile app in-store, my attention is focused totally on using it.	0.765	10.086 ***			
PER (Personalization)	Using mobile app in store offers me personalized services.	0.854	- ^a	0.914	0.785	0.986
	Using mobile app in-store offers recommendations that match my needs and to the situation.	0.905	20.558 ***			
	Using mobile app in-store is customized to my needs.	0.898	20.361 ***			
IN (Interactivity)	The quality of interaction offered by mobile app in-store is excellent in meeting my shopping tasks.	0.906	- ^a	0.870	0.772	0.974
	While using mobile app in-store, my actions decide the kind of experience I get.	0.85	18.878 ***			
PQ (Perceived quality)	I think the quality of this store is superior to other stores.	0.753	- ^a	0.725	0.570	0.954
	I can trust the service of this store.	0.757	10.635 ***			
PR (Perceived risk)	I am unsure if mobile app in-store performs satisfactorily.	0.656	- ^a	0.722	0.586	0.943
	I fear some trouble using mobile app in-store.	0.861	5.567 ***			
OVS (Overall satisfaction)	Overall, I am satisfied with the companies that have provided a smart retailing experience that connects offline–mobile.	0.764	- ^a	0.839	0.645	0.980
	The smart retailing experience connecting offline–mobile is more than expected.	0.866	15.451 ***			
	The smart retailing experience connecting offline–mobile is close to my ideal retail technology.	0.781	13.818 ***			

Table 2. Cont.

Construct	Item	Standardized Factor Loading	t-Value	Cronbach's α	AVE	CR
OS (Offline satisfaction)	Overall, I am satisfied with this store.	0.885	- ^a	0.903	0.760	0.988
	This store exceeds my expectations.	0.871	20.702 ***			
	This store is close to my ideal retail technology.	0.86	20.186 ***			
MS (Mobile satisfaction)	Overall, I am satisfied with mobile app.	0.85	- ^a	0.902	0.758	0.988
	This mobile app exceeds my expectations.	0.881	19.927 ***			
	This mobile app is close to my ideal retail technology.	0.88	19.889 ***			

(a) Unstandardized estimates were fixed by a value of one, so the *t*-values were not given. *** $p < 0.001$.

4. Results

4.1. Testing of the Measurement Model

First, a confirmation factor analysis was performed on the entire measurement model reflecting all factors to confirm the validity of the model constructors. Table 2 shows the confirmatory factor analysis results for the measurement model. It was found that the major model goodness-of-fit indices were all within appropriate ranges: $\chi^2(df) = 398.741(230)$, normed $\chi^2 = 1.734$, CFI = 0.968, TLI = 0.959, RMSEA = 0.050. Thus, it was verified that the entire measurement model was acceptable. Cronbach's α values for all variables showed a high level of reliability and ranged from 0.702 to 0.914.

Next, we confirmed construct validity for the 10 latent variables of this study model. Construct validity refers to how accurately the measuring tool measures the coefficient values and how the coefficients and the measured variables coincide [94]. To evaluate this, convergence validity and discrimination validity were examined. Convergence validity refers to how much two or more measurement tools are related to one factor, and the average variance extracted (AVE) and construct reliability (CR) are representative methods of evaluating this [95]. In this study, the AVE of all variables ranged from 0.546 to 0.828, and CR ranged from 0.943 to 0.988, indicating that the factors had convergence validity.

To confirm construct validity, convergence validity and discriminant validity should be checked. Discriminant validity describes how different one factor really is from another. Discriminant validity can be verified by calculating and comparing the square of the AVE of the latent variable and the correlation coefficient between the two variables [95]. If the AVE between the two variables is greater than the square of the correlation coefficient, the two factors can be considered to have discriminant validity. The squared values of the correlation coefficients between the latent variables in the study model were all smaller than the mean variance extraction index for each variable, confirming that the 10 variables represent different concepts (Table 3).

4.2. Structural Equation Model Testing

As shown above, the research model confirmed that all the individual measurement items explained the latent variable well, and each latent variable measured a different concept. Afterwards, the entire model was constructed and verified to see how the five factors of the smart retailing experience (i.e., perceived advantages, perceived enjoyment, perceived control, customization, interactivity) affect perceived quality and perceived risk, which, in turn, affect overall, offline, and mobile satisfaction. The results for the structural equation model analysis are shown in Figure 2. The fit of the study

model was found to be excellent ($\chi^2(df) = 596.070(249)$, normed $\chi^2 = 2.394$, CFI = 0.935, TLI = 0.921, RMSEA = 0.068).

Table 3. Discriminant validity.

	PA	PE	PC	PER	IN	PQ	PR	OVS	OS	MS
PA	0.648 ^a									
PE	0.462 ^b	0.828								
PC	0.406	0.340	0.546							
PER	0.361	0.348	0.381	0.785						
IN	0.305	0.342	0.250	0.278	0.772					
PQ	0.376	0.312	0.475	0.292	0.319	0.570				
PR	0.123	0.049	0.017	0.055	0.091	0.031	0.586			
OVS	0.487	0.520	0.319	0.311	0.454	0.434	0.117	0.645		
OS	0.441	0.411	0.293	0.359	0.511	0.465	0.135	0.651	0.760	
MS	0.370	0.387	0.178	0.263	0.750	0.338	0.095	0.689	0.692	0.758

Note: ^a: average variance extracted (AVE) for constructs are displayed on the diagonal. ^b: Numbers below the diagonal are squared correlation estimates of two variables. PA—perceived advantage, PE—perceived enjoyment, PC—perceived control, PER—personalization, IN—interactivity, PQ—perceived quality, PR—perceived risk, OVS—overall satisfaction, OS—offline satisfaction, MS—mobile satisfaction.

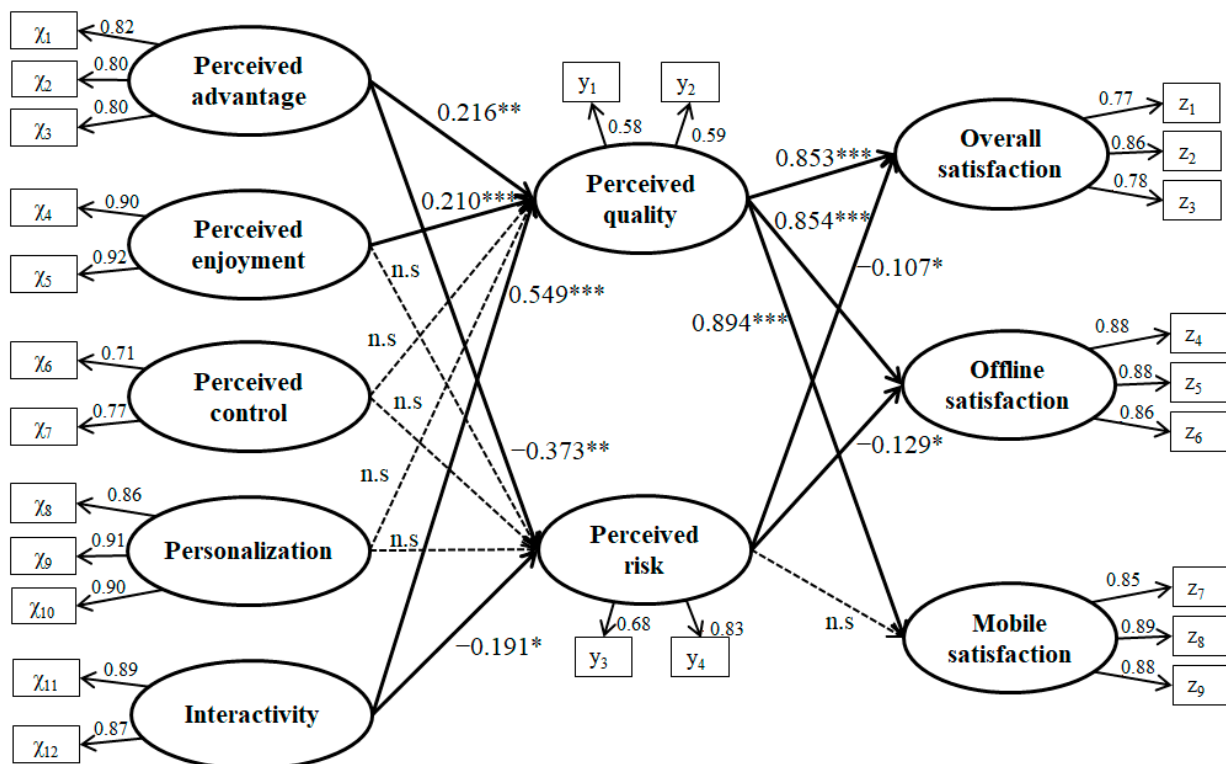


Figure 2. Results of the SEM analysis.

Perceived advantages ($\beta = 0.216^{**}$), perceived enjoyment ($\beta = 0.210^{***}$), and interactivity ($\beta = 0.549^{***}$) were found to have positive effects on perceived quality; thus, H1a, H1b, and H1e were supported. Perceived advantages ($\beta = -0.373^{**}$) and interactivity ($\beta = -0.191^{**}$) were found to have negative effects on perceived risk; thus, H2a and H2e were supported. However, perceived control and personalization did not significantly affect perceived quality or perceived risk, while perceived enjoyment did not significantly affect perceived risk. Therefore H1c, H1d, H2b, H2c, and H2d were rejected. Through these findings, it was confirmed that perceived advantages and interactivity can increase perceived quality and decrease perceived risk. Interactivity was found to be the most influential in increasing perceived quality, while the factor of perceived advantages was found

to be important to decreasing perceived risk. Perceived enjoyment showed a significant influence on perceived quality, and it was found that the more enjoyable the smart retailing experience, the higher the level quality perceived by consumers. This suggested that even if mediated by technology use, it should be possible to elicit emotional elements through a smart retailing experience.

Next, perceived quality was found to have a positive effect on overall satisfaction ($\beta = 0.853$ ***), offline satisfaction ($\beta = 0.854$ ***), and mobile satisfaction ($\beta = 0.894$ ***); thus, H3a, H3b, and H3c were supported. Perceived risk negatively affected overall satisfaction ($\beta = -0.107$ *) and offline satisfaction ($\beta = -0.129$ *). Therefore, H4a and H4b were supported, but H4c was rejected, as perceived risk did not affect mobile satisfaction. Perceived quality was found to have a significant influence on satisfaction, but perceived risk did not significantly affect mobile satisfaction. As it was a mobile-mediated experience in an offline store, even in an offline–mobile connected experience, consumers may have considered overall and offline satisfaction to be more important than mobile satisfaction.

As for the total effect of overall satisfaction, interactivity showed the largest effect ($\beta = 0.489$), followed by perceived advantages ($\beta = 0.224$; Table 4). As for offline and mobile satisfaction, the results indicated that the effects of interactivity and perceived advantages were large, as was the effect on overall satisfaction. These results suggested that consumers will be more satisfied with a smart retail experience if they perceive interactivity or advantages through combining offline and mobile services. In particular, retailers can increase customer satisfaction through mobile apps that enhance the interactive experience.

Table 4. Effects on SRE outcomes.

Dependent Variables (DV)	Independent Variables (IV)	Mediating Variable 1 (M1)	Mediating Variable 2 (M2)	Effect of IV on M1(a)	Effect of IV on M2(b)	Effect of M1 on DV(c)	Effect of M2 on DV(d)	Total Effect (a × c + b × d)
Overall satisfaction	Perceived advantage	Perceived quality	Perceived risk	0.216 ** ^e	−373 ***	0.853 ***	−0.107 *	0.224
	Perceived enjoyment			0.210 ***	0.056	0.853 ***	−0.107 *	0.173
	Perceived control			0.036	0.224	0.853 ***	−0.107 *	0.006
	Personalization			0.050	−0.093	0.853 ***	−0.107 *	0.052
	Interactivity			0.549 ***	−0.191 *	0.853 ***	−0.107 *	0.489
Offline satisfaction	Perceived advantage	Perceived quality	Perceived risk	0.216 **	−373 ***	0.854 ***	−0.129 *	0.232
	Perceived enjoyment			0.210 ***	0.056	0.854 ***	−0.129 *	0.172
	Perceived control			0.036	0.224	0.854 ***	−0.129 *	0.002
	Personalization			0.050	−0.093	0.854 ***	−0.129 *	0.054
	Interactivity			0.549 ***	−0.191 *	0.854 ***	−0.129 *	0.493
Mobile satisfaction	Perceived advantage	Perceived quality	Perceived risk	0.216 **	−373 ***	0.892 ***	−0.062	0.216
	Perceived enjoyment			0.210 ***	0.056	0.892 ***	−0.062	0.184
	Perceived control			0.036	0.224	0.892 ***	−0.062	0.018
	Personalization			0.050	−0.093	0.892 ***	−0.062	0.050
	Interactivity			0.549 ***	−0.191 *	0.892 ***	−0.062	0.503

^e: standardized regression weight. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

5. Discussion

In a time where e-commerce and omnichannel environments are expanding as we go through a pandemic era, fashion offline stores are providing differentiated shopping experiences using innovative mobile technologies. This study, which has been conducted in conjunction with such changes, is valuable because it proposes consumer experience factors that affect consumer satisfaction. This study focused on the fact that fashion offline stores are expanding the application of smart retail technology to progress with the times and we attempted to investigate the effect of factors related to the smart retailing experience

(i.e., perceived advantages, perceived enjoyment, perceived control, personalization, and interactivity) on consumer evaluation (i.e., perceived quality, perceived risk) and outcomes (i.e., overall satisfaction, offline satisfaction, and mobile satisfaction). Structural equation modeling analysis showed that perceived advantages, perceived enjoyment, and interactivity had positively affected perceived quality, while perceived advantages and interactivity negatively affected perceived risk. This supports the results of previous studies showing the positive effects of perceived advantage, perceived enjoyment, and interactivity [22,34,55]. However, the perceived control and personalization factors did not significantly affect risk reduction and quality perception, unlike previous studies [63,65]. This result reflects product characteristics as a study conducted in the fashion sector, unlike other studies, and the experiential situation, not the actual experience. Further, it was perceived quality that was found to have a positive effect on overall satisfaction, offline satisfaction, and mobile satisfaction, and perceived risk negatively affected overall and offline satisfaction, but did not affect mobile satisfaction. This study, which examined the impact of the smart retailing experience, is expected to make academic and practical contributions to the field.

The academic significance of this study is as follows. First, this study can contribute to providing basic data to and vitalizing research on smart retailing experiences. Although the adoption and application of smart technology has increased, few studies have specifically investigated smart technology in a fashion retail environment. The relevant research has been mostly conceptual or qualitative, and has examined smart technology and its application from the retailer's viewpoint [96]. This study expanded the existing literature regarding smart retail technology and contributed toward increasing the diversity of studies by focusing on the smart retailing experience from a consumer perspective. Second, this study attempted to reveal the relationships between factors related to the smart retailing experience, consumer evaluation, and outcomes by applying the technology adoption theory, thereby establishing an academic foundation for these relationships. In particular, perceived advantages, perceived enjoyment, and interactivity were found to be important factors that influence outcomes mediated by perceived quality, while perceived advantages and interactivity affect outcomes through perceived risk.

The results of this study are thought to be able to help retailers understand and apply smart technology and service innovation. First, retailers can utilize the factors of perceived advantages, interactivity, and perceived enjoyment when conceiving a smart retailing strategy. This study's findings indicated that, out of the factors related to the smart retailing experience, perceived advantages and interactivity are important for increasing perceived quality and lowering perceived risk for consumers. In addition, perceived enjoyment was shown to increase perceived quality. When fashion retailers want to apply smart retail technology in offline stores, they can increase satisfaction by emphasizing the advantages or interactivity of the retail technology so that consumers can directly recognize it. In addition, it is also important to provide services that allow people to perceive enjoyment during smart retailing experiences. Second, as perceived risk decreased, overall and offline satisfaction increased; however, mobile satisfaction was not affected. Thus, even if a service is combined with an offline environment by utilizing mobile technology, since the space where consumers exist is an offline store, it will be necessary to focus more on in-store and overall services. The results of this study are thought to be able to help practitioners understand the consumer experience associated with smart retail technology and develop effective strategies for improving this experience and securing a competitive advantage for retailers.

6. Limitations and Future Research

This study also has several limitations. First, it focused on the retail experience using offline–mobile linked technology in fashion stores. However, fashion stores use a variety of retail technologies, and different experiences with these technologies can produce varying results. Therefore, studies that examine consumer experiences related to various

technologies should be conducted in the future. Second, fashion stores can be classified into various categories, such as luxury stores and sports stores, and the main customer base varies according to the category. Therefore, it will be meaningful if future research expands into various categories. Third, this study proposed technology use as mediated by consumer experience as a way to rejuvenate offline fashion stores. Future research should consider more diverse factors that can potentially revitalize offline fashion stores. Fourth, since this study was designed for the target participants, it may be difficult to generalize the results of this research. Participants did not respond to the questionnaire based on their own experience but, rather, viewed the video stimuli and responded, which may have been accepted differently depending on the individual. Therefore, it seems that future research should supplement this with a more realistic and systematic research design. Fifth, future studies including qualitative factors will be able to expand the impact of statistical results and help to understand participants' perceptions. Sixth, some of the variables in this study had very high construct reliability, which can lead to redundancy issues. In future studies, the composition of the scale for the variable will need to be improved to justify this part. Seventh, the influence of demographic factors such as income, age, and gender should also be considered in the future. Finally, research confirming how consumer perceptions of offline retail experiences have changed post-pandemic will be interesting.

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