

Beyond Adoption: How Rational and Sensorial Experiences Shape Continuous Usage of Retail Apps



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Abstract

This study investigates the effect of customer experience with retail applications on customer satisfaction and continuous usage intention in the context of digital retail sustainability in India. Specifically, it examines how rational and sensorial experiences influence satisfaction and sustained app usage among retail app users. By focusing on continued digital engagement, the study contributes to the broader discussion on sustainable consumption and platform-based retail innovation in an emerging Asian economy. Data were collected from 368 active retail app users in Delhi-NCR and analyzed using Smart PLS. The findings reveal that both sensorial and rational experiences significantly influence customer satisfaction, which in turn positively affects continuous usage intention. Rational experience shows a stronger role in sustaining long-term app usage, indicating the importance of functional efficiency, convenience, reliability, and usability in digital retail platforms. The study contributes to sustainable entrepreneurship and innovation literature by explaining how retail apps can support scalable, resource-efficient, and customer-centred digital business models. The findings offer implications for e-retailers, digital entrepreneurs, and platform managers seeking to enhance customer retention and sustainable growth in Asian digital retail markets.

Keywords: Retail mobile applications; Rational experience; Sensorial experience; Customer satisfaction; Sustainable digital consumption

Introduction

Mobile retail applications (apps) have become a greater focus for eCommerce companies. This is now the main part of their marketing strategy (Okur & Saricam, 2025). Apps also incorporate cutting-edge technology to accommodate customers' preferences (Shang & Chiu, 2022). India is a leading market in this niche and the use of smartphones and Android phones is the key sales medium for online shopping. Apps are more efficient and personalized touchpoint shopping (Shukla and Nigam, 2018) and satisfaction (Sinemus et al., 2022). This implies that the design and functionality of an app are crucial. Apps are also serving as digital assistants capable of making shopping more personalized and convenient, along with providing places to purchase items. Therefore, e-tailers are emphasizing and investing more in app development and advances, such as real-time inventory updates, improving convenience features, AI assistants, driving user engagement, and loyalty programs through apps.

Further, retail apps are not only for speed but also for their request, order, and ease, with an immersive experience. Advanced features such as AI building voice assistance, chatbots, and highly personalized product recommendations are more engaging and attractive. However, true success in this field has been criticised. Several e-retailers

are struggling to make their apps more convincing and usable and to provide a better experience. This is because of poor customer experience (CE), weak retention strategies, or an inability to fit into customer preferences. Additionally, retailers are adopting more advanced technologies to improve the retail applications experience of customers (Shang & Chiu, 2022). To enhance retail strategies by aligning customer experience in e-tail shopping with customers' needs and optimizing digital interfaces.

Digital retail innovation for retail applications is another key area in the new Asian economy. In India, these platforms offer a chance for companies, e-retailers, and digital business owners to not only broaden the market reach but also minimize reliance on brick-and-mortar retail stores and develop scalable customer engagement strategies. But sustained retail app usage might make consumption more efficient, as it allows for better product comparisons, online transactions, and offers more opportunities for customization and less reliance on resource-heavy offline shopping models. Therefore, understanding the factors that influence continuous usage intention is important not only for customer retention but also for sustainable digital enterprise growth.

Therefore, both rational and sensory experiences are essential for creating a holistic and satisfying app experience (Verhoef et al., 2009). To increase efficiency, rational and sensorial experiential experiences remain important gaps. Limited attention has been paid to understanding the combined influence of rational and sensory experiences on users' continuous usage intention in retail app environments (Molinillo et al., 2020; Valentin-Mendez, 2025; Paulino et al., 2025). The relative importance of these dimensions of experience may vary depending on the customer expectations, context of the shopping experience (Grewal et al., 2020; Grewal et al., 2023; Pappas et al., 2020), and specific app design. (Hassan et al., 2024). Rational aspects primarily address consumers' practical and transactional needs, leading to satisfaction through efficiency and convenience (Lemon & Verhoef, 2016; Bilgihan et al., 2016). However, sensorial experiences are the emotional and aesthetic aspects of an app that evoke a more personal and immersive response (Perrig et al. 2023). These include visual design, interactive elements, personalized recommendations, and the overall aesthetic appeal of the application interface (Ghali et al., 2025; Krishna, 2012).

Previous research has included utilitarian and hedonic values in mobile commerce (Wang & Gutierrez, 2018). Nonetheless, the prevailing research paper in the current study explains the adoption-focused, static approach to customer experience with little emphasis on understanding the way and manner in which the convergence of both rational and sensorial experiences influences continuous usage behaviour in retail apps. The nature of the aforementioned experiences is very narrow, with little appreciation for the multidimensional and dynamic aspects of the experiences, especially in the context of post-adoption engagement. Generally, the prevailing model advances the customary approach to user experience in that rational and sensorial experiences are viewed from the perspective of being integrative and not parallel concepts.

Applications for retail purposes allow the dematerialization of processes since the shopping process is traditionally done in retail stores and is now transferred into the digital space. Hence, it becomes easier to do without any infrastructure, such as stores, transport means, and reduce the amount of energy needed, as well as reduce material expenses at the stores themselves. In this way, retail applications allow making better use of resources and are environmentally friendly. Furthermore, in this context, it becomes possible to search for and evaluate products effectively, as one can compare

various goods on one platform to find out what he or she needs. One makes fewer rash decisions and purchases products which are required in this case. Here, the rationality aspect encourages logical actions, while the sensorial experience provides a better understanding of what the product looks like, what it can offer, and what it will bring.

Although previous studies have examined customer experience, satisfaction, and continuance intention in mobile commerce, limited attention has been given to the sustainability relevance of continued retail app usage in emerging Asian markets. Existing literature largely treats retail app continuance as a consumer behaviour issue, while its implications for sustainable digital retail innovation and platform-based enterprise growth remain underexplored. Furthermore, rational and sensorial experiences are often examined separately, leaving a limited understanding of how these experiential dimensions jointly influence satisfaction and continuous usage intention in digitally mediated retail environments.

Hence, this study attempts to investigate the influence of rational and sensorial experiences on customer satisfaction and continuous usage intention through the lens of sustainable digital consumption. By focusing on retail app users in India, the study highlights how digital retail platforms may contribute to sustainable enterprise growth, resource-efficient consumption, and long-term customer engagement in an emerging Asian economy.

Literature Review

Sensorial and rational experience, Sustainability and Satisfaction

Sensorial experiences play an important role in emotional satisfaction. For instance, showed that aesthetic design and emotional engagement are highly significant antecedents of users' quality perceptions of apps, and lead to long-term satisfaction. Klaus et al. (2013) emphasized that personalization, such as customized recommendations or special offers, enhances emotional engagement and, in turn, customer satisfaction, leading to repeated consumption. In this respect, Perrig et al. (2023) also highlighted that personalization enhances satisfaction, which leads to reconsumption. Similarly, Feng et al. (2024) argued that building a deeper emotional feeling towards apps through visual design engagement, for example, interactive elements and appealing colour schemes, enhances continued engagement and usage.

The significance of sustainability has become crucial in consumer decision-making in light of increasing

awareness and ethicality in digital retail spaces (Joshi & Rahman, 2015; Gupta & Ogden, 2009). Regarding mobile applications used for retail purposes, the inclusion of various aspects of sustainability, such as eco-labeling, availability of green products, and sustainable product sourcing information may affect consumer perceptions and evaluations. Specifically, sustainability factors help in forming rational experience by impacting the consumer's perception of value, responsibility, and long-term gains associated with the use of the product. On the other hand, sensorial experience is enhanced via visual cues related to sustainability, including the inclusion of green designs, eco-icons, and green products, and influences consumers' perception of the application (Brakus et al., 2009). Although sustainability is becoming increasingly crucial, there has been no extensive research regarding the role of sustainability in experiential factors in consumer decisions.

Emotional satisfaction is also influenced by sensory experiences arising from visual design, personalization, and engagement. According to positive emotional responses arising from sensory elements increase the probability of satisfaction with such services, thus increasing the likelihood of returning and maintaining visitors' engagement.

H1: Sensorial experience positively influences customer satisfaction.

The rational experience in mobile applications is related to the practical needs of users and their functional requirements. Many studies have confirmed the influence of usability and functionality on customer satisfaction and retention. For instance, concluded that usability, such as an easy-to-use interface and ease of navigation, directly influences user satisfaction and future intention to use the mobile app, as later confirmed by Putra et al. in 2022. Efficiency factors such as quick loading and straightforward checkout processes are also important for retaining users. If a mobile application allows its user to pay easily or has a function to track their order, this may create value for the user, thus increasing the intention to continue using this app.

Usability and efficiency are rational experiences that directly contribute to user satisfaction with mobile apps. The smoother an app works and the more functional needs of the users it satisfies, the greater satisfaction will be felt automatically. This is backed by previous research by as well.

H2: Rational experience will have positive impact on Customer satisfaction.

Although many studies focus on rational and sensorial experiences independently, there are increasing examples of studies that find that both of these dimensions are related and work together to reach satisfaction in complementary ways. Lemon et al. (2016) suggested a holistic approach to customer

experience, suggesting that rational and sensorial experiences are not mutually exclusive, but rather complement one another in creating customer satisfaction. For example, a well-designed visual application (sensorial) can improve usability by making it easier and more fun to navigate the application (rational). This synergic effect eventually impacts on the continuous usage intention.

Previous studies define satisfaction as an effective response, which can be affected by the cognitive and emotional inputs (Oliver, 2010). In retail app settings, aesthetic/experiential design enhances satisfaction, which in turn supports engagement and loyalty (Perrig et al., 2023). According to (Lemon et al., 2016), the integration of rational and sensorial experiences provides a holistic customer experience that drives customer satisfaction. This satisfaction then mediates the relationship between both types of experiences and continuous usage intention.

H3: Sensorial experience positively influences rational experience with retail app.

Customer satisfaction and continuous usage intention

According to Klaus et al. (2013), satisfied customers are more likely to continue using retail applications. Satisfaction, in both functional and emotional terms, enhances loyalty and increases the likelihood of future app usage, because satisfied users are more apt to stick with what works. Satisfaction of the consumer is an important factor in determining the intention for continuous usage in online retailing. The existing literature on customer satisfaction shows that this factor is crucial in predicting customers' intention to use the service repeatedly. For instance, Al-Hattami et al. (2021) found that confirmation causes greater satisfaction, which, in turn, impacts continuance intention both directly and indirectly. Moreover, according to Kim and Kim (2024), customer satisfaction and e-trust are two essential mediators between e-service quality and continued use of the platform. Similarly, Mohamed et al. (2014) found that customer satisfaction plays an important role in determining customers' intention to use online shopping websites. Another factor worth considering is the timing effect associated with customer satisfaction. Specifically, Ha (2012) proved that previous satisfaction affects future purchase intentions. Thus, the discussed factors indicate that customer satisfaction acts not only as a result of past behaviour but also as a tool for prediction.

H4: Customer satisfaction positively influences continuous usage intention.

Experience and continuous usage intention

The determinants of user satisfaction and continuance intention in post-adoption contexts were consistently investigated in previous

researches through mobile and digital commerce. To illustrate, Jiang et al. (2021), based on analysis establishes that both perceived interactivity and intrinsic value have significant influence on consumers attitudes and continuance intention towards mobile applications. As per the extended expectation-confirmation model of Ashraf et al. (2020) predicted the satisfaction and continuous usage of online product recommendation systems with the perceived usefulness, perceived decision quality, and perceived decision efforts. Likewise, Thakur (2018) demonstrates customer engagement experiences moderate the satisfaction-loyalty relationship, such that higher engagement strengthens the effect of satisfaction on continuance intention and electronic word-of-mouth behaviour. Furthermore, Marinković et al. (2020), analysed how relationship between customer satisfaction and continuance intention in mobile commerce is influenced by moderating factor, i.e., gender by using the UTAUT model and identifying performance expectancy as the strongest predictor of satisfaction and comparative value as the primary driver of continuance intention, and also confirming significant gender-based differences in these relationships.

In a mobile commerce contexts cognitive evaluations, experiential value, and moderating factors (engagement and gender) collectively play crucial roles in shaping sustained usage behaviour.

These studies, taken together emphasizes the critical role of experience in shaping performance and perceptions across different retail and technology contexts.

The study by Nikhashemi et al. (2019) highlights the effect of retail brand experience on customer behavioural outcomes such as willingness to pay more and continuous purchase intention, shaped by brand loyalty.

Liu et al. (2019) emphasize that with the help of automated system the user experience can be measured so as to assess the reliability of app performance. Duemmler et al. (2018) investigate how the work experiences of retail apprentices lead to conflicting occupational identities, weighing skill development against the difficulties posed by flexible work requirements. These results highlight that the accumulation and quality of experience, be it operational, customer-focused, or job-related, are crucial to performance, contentment, and identity in contemporary retail and technology settings.

H5: Sensorial experience positively influences continuous usage intention.

H6: Rational experience positively influences continuous usage intention.

H7: Customer satisfaction mediates the relationship of sensorial experience and continuous usage intention.

H8: Customer satisfaction mediates the relationship of rational experience and continuous usage intention.

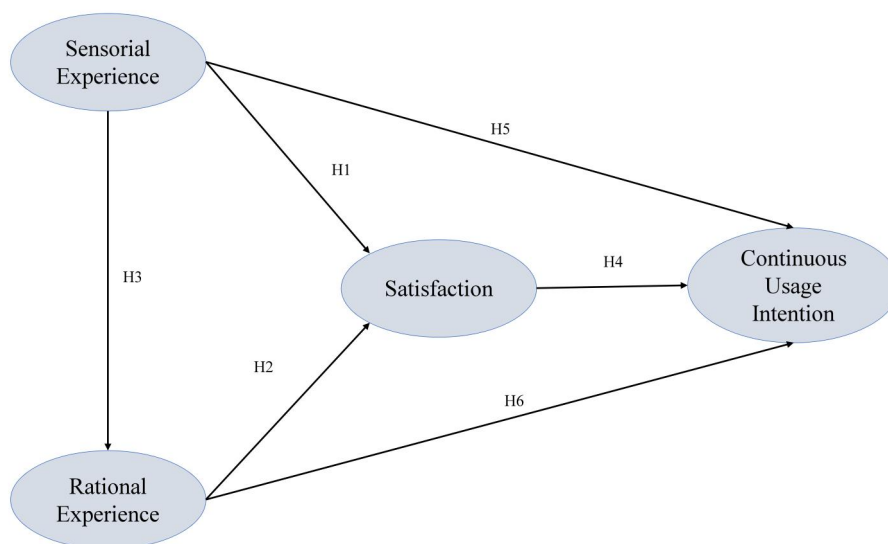


Figure 1: Research model, Source: Created by author

Research Methodology

As seen from the proposed model, functional and experiential aspects contribute to greater customer retention of applications as well as more mindful consumption practices. The data were collected from Delhi-NCR because this region has a higher digital penetration and better e-commerce infrastructure. By applying purposive sampling and

considering only active retail app users, the data were collected using a structured questionnaire. A link to the survey questionnaire was shared on social media platforms, such as WhatsApp. Screening questions were asked to identify retail app experiences of customers by considering digital sustainability. The respondents had to use one retail app at least once in the last 15 days to shop. This

was considered necessary to ensure that they had recent experience and could correctly assess the retail app features. The data analysis section considered 368 questionnaires to make their findings more robust and sufficient to provide adequate statistical power to test the models, ensuring the generalization of findings within the context of this study.

Measurement Development

Items related to a particular construct were obtained from the literature. Three items to measure the sensory experience were adapted from Gao and Bai (2014). Three items related to customer satisfaction were adapted from Oliver (2014), and four items related to continuous usage intention were adapted from Bhattacharjee (2001) and Klaus and Maklan (2013). The questionnaires were pilot-tested for clarity, readability, and reliability on 30 participants. All items were rated on a 5-point Likert scale from "Strongly Disagree" (1) to "Strongly Agree" (5). The questionnaire was developed using Google Forms and divided into two sections: demographic information and the main body of the questions.

Results

Demographic profile of the respondents

As seen in the demographic profile in Table 1, the sample is fairly equal in terms of males (54.3%) and females (45.7%). Most respondents were young adults, aged 25–34 (48.6%) and aged up to 24 (30.2%), while only a small portion were aged 35–44 (12.8%) or 45 and above (8.4%). As far as education is concerned, most were well-educated, more than half of them being post-graduates (54.3%) and over one fourth of them being under-graduates (26.1%) with a small number having schooling, doctoral and other degrees. Family income was diverse with the largest group (32.6%) reporting that they earned 1,000,000 or more; 21.7% of the respondents earned 300,000 or less, suggesting a range of low and high income earners. Retail app usage was generally frequent, with more than half using such apps weekly (54.6%) and another third monthly (34%), while only 11.4% used them occasionally. Regarding the specific apps used, nearly half of the respondents used app "multipurpose retail apps" (49.2%), followed by app "Grocery & Quick Commerce retail Apps" (30.7%), while apps "Fashion/ children related retail Apps" and "Specialty Retail Apps" had comparatively fewer users, at 10.9% and 9.2%, respectively.

Table 1: Demographic profile of the respondents

Variables		Frequency	Percent
<i>Gender of the respondents</i>	Male	200	54.3
	Female	168	45.7
<i>Age of the respondents</i>	Upto 24	111	30.2
	25-34	179	48.6
	35-44	47	12.8
	45 & above	31	8.4
<i>Highest Level of Education</i>	Schooling	29	7.9
	Undergraduate	96	26.1
	Postgraduate	200	54.3
	Doctoral	19	5.2
	Others	24	6.5
<i>Family income (Indian Rupees)</i>	300,000 or below	80	21.7
	300,000-600,000	67	18.2
	600,000-800,000	51	13.9
	800,000-1,000,000	50	13.6
	1,000,000 or above	120	32.6
<i>How frequently do you use retail apps?</i>	Weekly	201	54.6
	Monthly	125	34.0
	Occasionally	42	11.4
<i>Which type of retail mobile app do you use most frequently?</i>	Fashion & lifestyle retail Apps	40	10.9
	Multipurpose retail Apps	181	49.2
	Grocery & Quick Commerce retail Apps	113	30.7
	Specialty Retail Apps	34	9.2

Source: Created by authors

Measurement Model Assessment

This model was analyzed using Smart PLS software through a confirmatory factor analysis (Fig 2). The

reliability, validity, and average variance extracted (AVE) for the construct were assessed. All items were loaded into their constructs with scores greater than 0.70. Internal consistency is well-espoused by both Cronbach's Alpha and Composite Reliability scores of over 0.70 (see Table 2). The AVE score for each construct is greater than 0.50. This confirmed the convergent validity of the constructs.

Discriminant validity was achieved, as for each construct, the square root of the AVE score was found to be higher than that of the related constructs' correlations (Fornell & Larcker, 1981), and all heterotrait-monotrait (HTMT) ratios were below 0.90 (Table 3). These results confirmed that a robust measurement model was achieved.

Table 2: Construct reliability and loading

Construct		Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Rational experience		0.849	0.851	0.892	0.623
RE1	0.819				
RE2	0.764				
RE3	0.801				
RE4	0.766				
RE5	0.796				
Sensorial experience		0.830	0.830	0.898	0.746
SE1	0.873				
SE2	0.844				
SE3	0.875				
Customer satisfaction		0.827	0.839	0.896	0.742
CS1	0.875				
CS2	0.888				
CS3	0.819				
Continuous usage intention		0.811	0.813	0.876	0.638
CUI1	0.780				
CUI2	0.812				
CUI3	0.805				
CUI4	0.798				

Source: Created by author

Table 3: HTMT ratio

	CS	CUI	RE	SE
CS				
CUI	0.759			
RE	0.598	0.581		
SE	0.495	0.536	0.448	

Source: Created by author

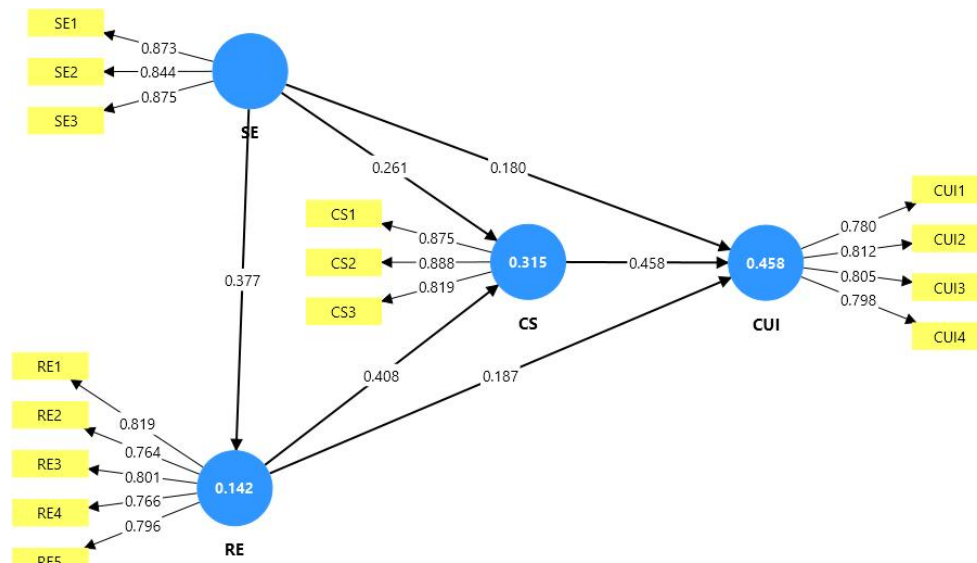


Figure 2: Measurement Model, Source: Created by Author using Smart-PLS

Structural Model and Hypothesis Testing

The structural model explained a substantial amount of variance in both satisfaction ($R^2 = 0.31$), which led to continued usage intention of apps ($R^2 = 0.39$). Table 4 presents the path coefficients and hypothesis test results. The results of the structural model analysis are summarized in Fig. 3, representing the R^2 values and path coefficients of all proposed relationships. This shows the hypothesized relationships between rational experience, sensory experience, customer satisfaction, and the continuous usage intention of

retail apps. Sensory experience H1 ($\beta = 0.261$, $t=5.118$, $p<0.001$) and H2 Rational experience ($\beta = 0.408$, $t= 8.760$, $p < 0.001$) have positive significant effects on customer satisfaction which exhibited significant direct effects on the continuous usage intention H4 ($\beta = 0.458$, $t=8.576$, $p< 0.001$). Also, sensory experience H3 ($\beta = 0.377$, $p t=7.477$, $p< 0.001$) effect on rational experience is significant. The hypotheses H1, H2, H3, and H4 are accepted. The indirect effect of sensory experience on customer satisfaction through rational experience is significant and greater.

Table 4: Path coefficient and results of hypothesis testing

Hypothesis	Path	Path coefficient	Standard deviation	t-statistics	p-values	Result
H1	SE -> CS	0.261	0.051	5.118	0.000	Accepted
H2	RE -> CS	0.408	0.047	8.760	0.000	Accepted
H3	SE -> RE	0.377	0.050	7.477	0.000	Accepted
H4	CS -> CUI	0.458	0.053	8.576	0.000	Accepted
H5	SE -> CUI	0.180	0.046	3.924	0.000	Accepted
	SE -> CS -> CUI	0.120	0.027	4.503	0.000	Partial
H6	RE -> CUI	0.187	0.049	3.796	0.000	Accepted
	RE -> CS -> CUI	0.187	0.033	5.737	0.000	Partial

The direct effect of sensory experience H5 ($\beta = 0.180$, $t= 3.924$, $p < 0.001$) and rational experience H6 ($\beta = 0.187$, $t=3.796$, $p<0.001$) on continuous usage intention are significant and indirect effect of sensory experience ($\beta = 0.120$, $p t=4.503$, $p< 0.001$) and rational experience ($\beta = 0.187$, $t=5.737$, $p < 0.001$) on CUI are significant and positive. This indicates that satisfaction play partial mediating role between retail app experiences and CUI.

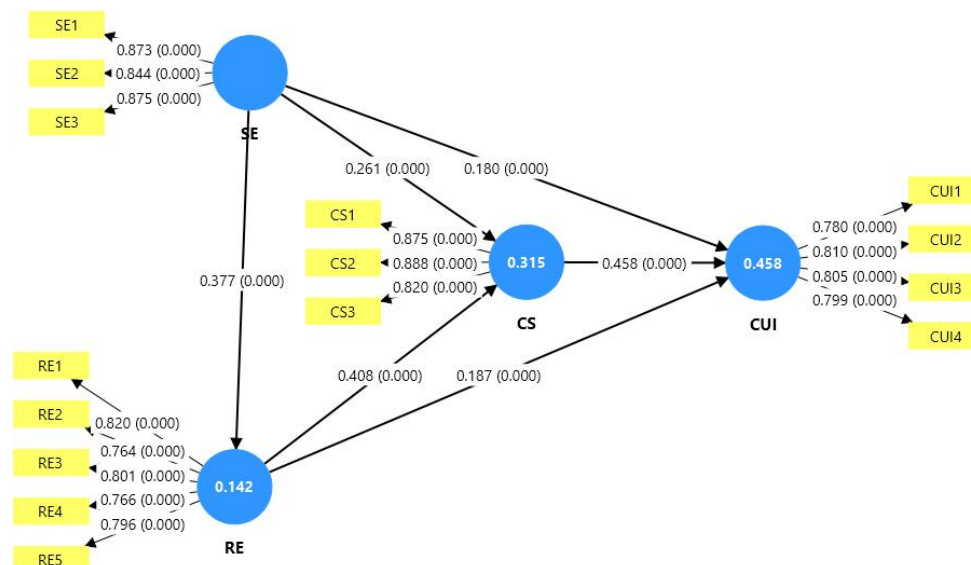


Figure 3: Structural Model, Source: Created by author

Theoretical and Practical Contributions

This study makes three theoretical contributions. First, it extends customer experience literature by examining rational and sensorial experiences in the post-adoption stage of retail app usage. Second, it contributes to sustainable entrepreneurship and innovation research by positioning retail apps as digital platforms that can support scalable, resource-efficient, and customer-centered retail models. Third, it provides evidence from India, an emerging Asian economy where mobile commerce is reshaping consumption practices and creating opportunities for digital enterprise growth.

The study also provides some practical implications for e-retailers, digital entrepreneurs and platform managers. The results indicate that the rational aspects of a mobile application, like the easiness to navigate the application, speed loading time, secure payment, order tracking, and functionality convenience are vital for customer satisfaction and usage. The emotional satisfaction is further enriched with elements of sensorial satisfaction, including visual appearance, personalisation, interactivity and engaging design. These factors combined, can help companies hold on to customers, deliver sustainable customer relationships and contribute to long-term digital retail success.

Discussion

The results reveal some important relationships that can be used in retail marketing strategies to cater to customer experience in e-retail. This study emphasises the combined effect of different types of experience on customer satisfaction. Rational and sensorial experiences have shown positive and significant effects on consumer satisfaction. However, their effects on customer satisfaction are slightly different. These findings are consistent with scholars stressed that users' needs are satisfied on

the basis of experience. In the case of retail apps, completing some tasks is necessary, such as product search and checkout, and failure in rational aspects can easily make users quit. The functional performance of any app is important for retaining its users. However, seamless navigation, fast page loading times, and stable features are necessary for hassle-free shopping.

The results also show the role of sensory experience in strengthening the dimensions of emotional satisfaction. Sensory factors create an entertaining and immersive retail atmosphere. This consistent previous the findings (Gao and Bai, 2014), a positive effects of it, which shows that emotional appeal can strengthen satisfaction beyond its functional experience. Appealing designs, personalised recommendations, and interactive features that require investment in retail apps aid in creating emotional connections, leading to loyalty and sensory experiences.

Hence, the dual approach of rational and sensorial experience supports Lemon and Verhof (2016) and substantiates the dual-experience approach, such as cognitive and affective dimensions. Therefore, this is an important strategy for e-retailers to consider. A more aligned retail app functionally satisfies users but does not reassure them to continue using the app. Simultaneously, retail strategies must build visually engaging, personalised, and interactive user experiences.

These findings are relevant for sustainable digital entrepreneurship in India. Given that rational experience is a greater contributor to satisfaction, rational factors such as functional efficiency, reliability, convenience and usability should be paramount in the design of retail apps by e-retailers and digital entrepreneurs. These characteristics can help to retain customers and contribute to the sustainability of digital retail platforms. Sensorial

experience is also still of high relevance, as visual appearance, individualization and interaction lead to emotional involvement and enhance app-based relationships. The rational and sensorial aspects of the app experience can help sustain the growth of an enterprise in emerging Asian markets, and minimise the reliance on more traditional physical retail.

This study adds value to the existing research on sustainability by linking digital consumers' behavior and sustainable consumption in emerging economies. This study contributes to the current literature by highlighting how sustained consumption of retail applications, through rational and sensory motives, can lead to lesser dependence on energy-intensive physical retail systems and optimized consumption.

In the Indian context, retailers especially need to configure sensory experiences to suit the tastes and preferences of Indian customers. An increasingly demanding segment that expects apps to be not only efficient but also fun and personalised. This would result in greater customer satisfaction, continued usage, and reduced customer churn. The mediating role of satisfaction indicates that continuous usage intention can be integrated into app management strategies to quickly identify areas that need revision or improvement.

Conclusion

This study examined the influence of rational and sensorial experiences on customer satisfaction and continuous usage intention in retail mobile applications. The findings show that both rational and sensorial experiences significantly affect customer satisfaction, which further strengthens users' intention to continue using retail apps. Among the two experiential dimensions, rational experience emerged as the stronger predictor, indicating that users are more likely to remain engaged with retail apps when they perceive them as convenient, reliable, efficient, and easy to use. Sensorial experience also plays an important role by enhancing visual appeal, personalization, interactivity, and emotional engagement.

The study contributes to customer experience and sustainability literature by linking digital retail app usage with sustainable consumption in an emerging Asian economy. Continued use of retail apps may support sustainable digital enterprise growth by reducing dependence on physical retail infrastructure, improving shopping efficiency, and encouraging more informed consumption decisions. Although this study does not directly measure environmental sustainability outcomes, it conceptually highlights how sustained engagement with digital retail platforms can contribute to more resource-efficient consumption ecosystems.

From a managerial perspective, the findings suggest that e-retailers, digital entrepreneurs, and app developers should design retail apps that combine functional efficiency with engaging sensory features. A balance between rational and sensorial experiences can enhance satisfaction, strengthen customer retention, and support long-term sustainable growth in digital retail markets. Future studies may extend this research by directly measuring sustainability-related outcomes and examining retail app usage among SMEs, local sellers, and digital entrepreneurs across different Asian contexts.

Limitations and Future Research

Similar to other studies, this study has some limitations that provide directions for further research. First, the two dimensions of retail experience i.e. rational and sensorial experience, were considered to measure satisfaction which leads to continuous usage intention. Other dimensions of experience can include to strengthen the customer satisfaction and continuous usage intention of mobile retail app. Second, the sample was taken from the Indian context, specifically the Delhi NCR. A diverse sample from other geographic context may generalise the finding of this study. Third, the mediating effects of other factors such as gamification, trust between the relationship of the retail experience, customer satisfaction, and continued usage intention can consider in further studies. Last but not least, a cross-sectional research design followed by a quantitative approach has been employed. Either qualitative methodology or mixed-methods can be employed in further studies. This is because this research does not directly assess sustainability but links continuous usage intention to sustainable consumption in digital ecosystem.

Finally, this study conceptually links retail app continuance with sustainability but does not directly measure environmental, social, or ethical consumption outcomes. Future studies may include sustainability-related constructs such as perceived environmental benefit, green purchase intention, responsible consumption behavior, eco-label usage, perceived digital sustainability, or carbon-conscious shopping. Future research may also examine how retail apps support small businesses, local sellers, women entrepreneurs, and digital entrepreneurs in Asian markets to better understand the relationship between app-based retail and sustainable entrepreneurship.

Competing interests Declarations

The authors declare no competing interests.

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