

Investigating omni-channel satisfaction through the lens of channel integration: A serial mediation model

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Abstract

The objective of this study is to examine the relationship between channel integration, customer empowerment, customer experience and satisfaction in an omni-channel retail setting. This research utilizes a survey-based questionnaire methodology to carry out the investigation. The data for this study was collected from 230 individuals who possess experience in omni-channel retailing within Northern India. For data analysis part, SmartPLS 4 was used. The findings indicate that channel integration positively influences customer empowerment and satisfaction. Moreover, customer empowerment positively influences customer experience, which subsequently leads to increased satisfaction. The study also emphasizes how customer empowerment and customer experience operate as mediators in the relationship between satisfaction and channel integration. This research stands out for its innovative investigation of the serial mediation effect of customer empowerment and customer experience within a customer empowerment framework—applied for the first time in the context of omni-channel retailing. This research highlights the importance for retailers to enhance customer satisfaction by prioritizing seamless integration of channels in an omni-channel retail setting.

Keywords: Omni-channel retailing, Channel integration, Customer empowerment, Customer experience, Customer satisfaction.

Introduction

The rapid advancement of digital technology has significantly transformed the retail landscape in recent years (Salvietti et al., 2022). This evolution has allowed retailers to integrate physical and digital platforms such as stores, apps and websites, offering customers more ways to shop and interact (Shi et al., 2020). This shift marks the rise of Omni-Channel Retailing as a core element of modern retail strategy (Cai and Lo, 2020). Omni-channel retailing is characterized by the seamless integration of all retail channels, offering a consistent and unified experience regardless of the platform used (Zhang et al., 2018). Earlier phases of retail development, such as multi-channel and cross-channel strategies, provided only partial integration between channels, ultimately paving the way for the rise of omni-channel retailing (Thaichon et al., 2024).

Initially, omni-channel retailing aimed to expand the number of channels, particularly digital ones. However, recent research emphasizes that effective channel integration is essential for providing a seamless and cohesive shopping experience (Alexander and Kent, 2022; Quach et al., 2022). As retail becomes more customer-focused, examining psychological factors such as customer empowerment and experience is increasingly important for understanding satisfaction.

Even after the increasing relevance of omni-channel retailing, it is still in its infancy in developing countries such as India and needs further research. Existing literature has largely examined the impact of channel integration on either customer empowerment or customer experience in isolation, often resulting in a fragmented understanding (Zhang et al., 2018; Pasaribu, 2021; Mishra et al., 2018). Few studies have considered the combined or sequential role of customer empowerment and customer experience as serial mediators. While some research has investigated cross-channel integration and satisfaction using the S-O-R framework, the focus tends to remain solely on customer empowerment, overlooking the broader customer journey (Urguplu and Huseyinoglu, 2021).

Many studies on customer empowerment in omni-channel retail lack focus on specific product categories (Zhang et al., 2018). Hanh Le and Nguyen Le (2020) examined how channel integration affects customer experience through empowerment but did not consider customer experience as a separate mediator of satisfaction. Similarly, Qi and Yan (2020) explored how brand experience and trust mediate the link between channel integration quality and purchase intention. In contrast, this study introduces a new set of constructs to provide a more holistic view. It addresses the key gap in understanding how customer empowerment and customer experience together mediate the relationship between channel integration and satisfaction.

To address this, the study develops a customer empowerment framework. It explains how retailer channel integration enhances consumer autonomy leading to improved experience and satisfaction. Channel integration refers to the extent to which customers perceive all management functions and information systems as cohesive across channels (Shi et al., 2020). In this study, it is treated as a second-order construct due to its complex and multidimensional nature, encompassing channel service configuration and integrated interactions. This approach captures overall integration while recognizing its key components. Customer empowerment is the level of control customers have over their buying experience (Zhang et al., 2018). Greater

empowerment enhances customer experience, defined as each individual's subjective response to a company (Kumar et al., 2023), ultimately leading to higher satisfaction.

In this research, we have chosen to focus on the apparel industry due to the recent technological advancement that has caused a substantial shift for retail companies in the fashion sector. Customers use fashion products, particularly apparel, as significant symbolic consumption areas (Kaur et al., 2024). Specifically, in fashion communication and marketing, the integration of digital tools has significantly enhanced business operations and customer relationships (Noris et al., 2021).

Our research attempts to provide information on whether investing in channel integration would result in terms of increased customer empowerment, experience and satisfaction. This paper makes a novel attempt by creatively incorporating two mediating variables namely customer empowerment and customer experience and by exploring its serial mediation impact through customer empowerment framework. These variables hold significance due to their relevance to the research objective. Our study will not only contribute to the body of knowledge in academia but also have real-world ramifications for retailers, looking to improve the way they handle customers and increase customer satisfaction through omni-channel strategy.

The remaining structure of the paper is organized as follows. The next section reviews the literature and develops hypotheses, followed by methodology, data analysis, and results. The next section mentions the discussion and interpretation of the study followed by practical implications. We finally conclude the study by outlining its shortcomings and potential future research areas.

Literature Review

Customer Empowerment Theory (CET)

Information provided by marketers equips consumers with insights, empowering them to make educated choices. According to consumer empowerment theory, customers who possess the knowledge, assets, and instruments necessary to make well informed decisions and influence the market are considered empowered (Reddy and Thanigan, 2023). The concept of customer empowerment began to gain traction in the late 20th century as scholars and practitioners observed changes in consumer behavior driven by factors such as increased access to information (especially through the Internet) and heightened consumer expectations (Evanschitzky et al., 2014). Hu and Krishen (2019), employed consumer empowerment theory to examine customer reviews.

The concepts of information overload, product involvement, product comprehension, and customer delightedness were used to explain how consumers react to higher levels of information. Consumer Empowerment Theory explains how customers' perceived control shapes their interactions across retail channels. Empowered consumers navigate purchase decisions more effectively, leading to better experiences and greater satisfaction. This study extends CET by viewing channel integration as a key driver that enables consistent, easy access to information and services, thereby fostering empowerment and enriching customer journey. CET's comprehensive focus on consumer and information dynamics makes it well-suited for this research.

Channel Integration

The retailer's ability to handle its multiple platforms efficiently to provide customers with a flawless online shopping experience and commercial value is known as channel integration (Cao and Li, 2018; Zhang et al., 2018). According to Saghiri et al. (2017), the success of an omni-channel business model is based on the level of integration across its retail channels. Without complete integration, a multichannel store cannot upgrade into a true omni-channel organization. Sousa and Voss (2004) proposed a conceptual framework to assess the quality of channel integration, which includes two key components: channel service configuration quality and integrated interaction quality. Channel service configuration indicates the retailer's ability to offer flexible combinations of easily accessible channels (Overby and Lee, 2006), while integrated interaction quality pertains to the consistency of customer experiences across those channels (Sousa and Voss, 2004).

Customer Empowerment

Zhang et al. (2018) defines customer empowerment as the extent to which customers have control over their purchasing experience. In the retail industry, technological advancements improve client empowerment through digital tools such as computers, mobile applications, social media, and others. The unified systems in omni-channel retailing offer uniform product availability, pricing, reviews, and information across all platforms. Consumers are better able to make educated decisions without being confused or in need of help. This empowers them to choose the most convenient channel at any moment (Goraya et al., 2020; Zhang et al., 2018).

Customer Experience

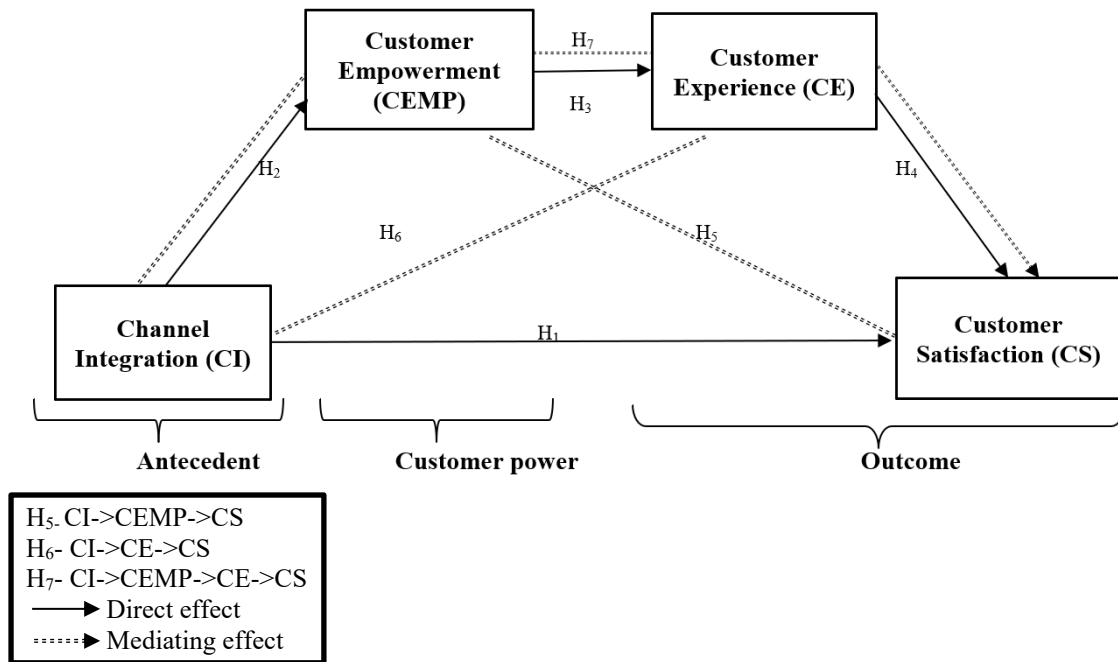
In recent decades, scholars have increasingly emphasized the importance of customer experience, arguing that it serves as a crucial element for firms to gain a competitive edge and is challenging to replicate (Homburg et al., 2017). It involves the personal and internal responses of consumers to various interactions with the company either directly or indirectly (Meyer and Schwager, 2011). Customer experiences occur during various stages, encompassing the processes of product research, shopping, service delivery, and consumption, reflecting the entirety of their interaction with a company (Brakus et al., 2009). While various research has delved into the customer experience and confirmed its pivotal role in enabling retailers to attain a competitive edge (Bustamante and Rubio, 2017; McColl-Kennedy et al., 2019) there is little study on how to enhance the customer experience in an omni-channel retail setting.

Satisfaction

It is defined as the customer's perception of how well a product or service meets or exceeds expectations (Zeithaml et al., 2018). Omni-channel retailing enhances customer satisfaction by offering seamless, consistent, and personalized experience across touchpoints—empowering customers to engage with brands in the ways that suit them best. The approaches implemented by retailers surpass customer expectations, resulting in enhanced satisfaction. In previous studies such as Urguplu and Huseyinoglu, (2021) and Zhang et al. (2018), it is regarded as a crucial outcome of customer empowerment.

Based on the reviewed literature and the theoretical foundations discussed, a conceptual framework is proposed to examine the relationships among channel integration, customer empowerment, customer experience and satisfaction. The research model depicted in Figure 1 illustrates the interrelation between these variables and encompasses the proposed hypotheses through customer empowerment theory.

Figure 1: The conceptual research framework of customer empowerment process



Source: The author

As illustrated in the proposed research framework (Figure 1), channel integration is anticipated to have a direct impact on customer satisfaction as well as an indirect one through consumer empowerment and customer experience. Customer Empowerment Theory (CET) serves as the foundation for the concept, which is backed by earlier empirical research. The next section presents a number of hypotheses that have been created in order to empirically validate the links among these constructs.

Hypotheses Development

Relationship between Channel Integration and Satisfaction

Channel integration ensures uniformity in key process attributes across various platforms. For example, it aims to provide a consistent atmosphere, branding, and service across all channels, ensuring a smooth shopping experience that enhances customer satisfaction (Le and Nguyen Le, 2020; Aripin et al., 2024). Furthermore, channel integration is recognized as the primary driver of customers' overall satisfaction (Seck and Philippe, 2013). According to the research of Seck and Philippe (2013), multi-channel integration service quality has a positive influence on satisfaction. Given the increasing importance of providing a seamless customer

journey, it is essential to explore how channel integration contributes directly to customer satisfaction in an omni-channel retail context. So, we hypothesize that:

H1 Channel Integration has a positive impact on Satisfaction.

Relationship between Channel Integration and Customer Empowerment

Customers feel greatly empowered when they can freely and continuously choose from various channels that cater to their shopping preferences (Hyun-Hwa and Kim, 2010). New digital innovations in retailing enable customers to obtain precise and direct information about a retailer's goods and services. This includes details such as pricing, product quality, store inventory, advertisements, product feedback etc. which can help consumers make better selections and reducing ambiguity in their shopping activities (Ürgüplü, 2020). Collectively, the reviewed studies suggest a strong link between technological integration in retail and increased customer empowerment. Based on this evidence, the following hypothesis is proposed:

H2 Channel Integration has a positive impact on Customer Empowerment.

Relationship among Customer Empowerment, Customer Experience and Satisfaction

Customers who are empowered have the freedom to select what they want, when they want, and under what circumstances (Kreps, 2016; Wathieu et al., 2002). Consequently, empowered customers are more inclined to have a positive experience and hold a favorable view of the retailer (Wathieu et al., 2002). This aligns with previous research indicating that empowering customers enhances their understanding of a satisfying, seamless experience (Sarra Berraies, 2016). The expectancy disconfirmation paradigm states that the psychological gap between anticipation and confirmation determines satisfaction (Oliver and DeSarbo, 1988). Customers are extremely satisfied when their expectations are realized. According to Yunpeng and Khan (2023), the purchasing experience of the customer determines their level of satisfaction. So, based on above discussion, we can assume:

H3 Customer Empowerment has a positive impact on Customer Experience.

H4 Customer Experience has a positive impact on Satisfaction.

While previous research has acknowledged the potential impact of these mediators, it has often treated them in isolation or failed to consider their combined influence. This research is significant as it is among the initial studies to explore the connection between channel integration and customer satisfaction, considering the dual mediating effects of customer empowerment and customer experience which serves as an implication for retailers to make strategies accordingly.

Serial Mediating Roles of Customer Empowerment and Customer Experience

Channel integration seeks to enhance consumer satisfaction by enabling consumers to seamlessly navigate the shopping process across both online and offline platforms, thereby empowering them (Urguplu, 2020). According to Zhang et al. (2018),

customers are more satisfied when they feel empowered: know how to use all available channels; and are aware of the features of the services they receive (Urguplu and Huseyinoglu, 2021). Brand experience is influenced by the online and offline channel integration's service efficiency. Retail businesses may establish consistent customer interactions at every touchpoint by continuously integrating numerous channels, giving customers a positive brand experience. In other words, retailers are essentially giving customers more control through channel integration, which helps them create their own experiences. Consumer affective assessments, such as perceived satisfaction, will be influenced by these pleasant experiences (Mattila and Enz, 2002; Fang et al., 2016).

- H5** Customer empowerment mediates the relationship between Channel Integration and Satisfaction.
- H6** Customer Experience mediates the relationship between Channel Integration and Satisfaction.
- H7** Customer empowerment and Customer Experience jointly mediate the relationship between Channel Integration and Satisfaction.

Methodology

The methodology adopted in this research provides a structured framework for systematically addressing the research objectives. This section outlines the procedures used for data collection and analysis, ensuring the validity and reliability of the study's findings.

Sample and Data Collection

We collected data from participants living in cities like Chandigarh and Delhi-NCR in order to evaluate our proposed study model. With a high concentration of malls, structured retail stores, and tech-savvy customers, both cities are heavily urbanized and represent developed retail markets. This setting is ideal for researching omni-channel retailing practices. Respondents having age of more than 18 years and prior omni-channel experience with any apparel category retailer in the past 6 months were chosen for this study. Retail managers and academicians were consulted during the questionnaire's development to make sure the tool was self-explanatory, understandable, and in line with the study's goals. Their recommendations also helped to improve the questionnaire items' accuracy and coherence. To further assess the questionnaire after the initial consultations, a pilot study with 100 participants was carried out. A small, representative sample of the target population was used in this first test in order to find any ambiguities or design problems and evaluate the instrument's overall validity and reliability.

Further by using SPSS, reliability and validity analyses were conducted on the pilot research participants' responses. The results revealed some weak items related to channel integration, which were dropped off. This iterative process of improvement made sure that the final questionnaire was understandable, easy to use, and successfully in line with the goals of the study. Following that, purposive sampling was used to get the final data. The criteria set forth by Hair et al. (2008), was employed for estimating

the sample size. Based on this guideline, a minimum of five and a maximum of ten respondents are required per statement. With 30 statements in the study, the estimated sample size was set at 300.

Based on the screening questions, “Are you aware of the omni-channels provided by the retailer?” and “Have you purchased from any of the multiple channels of this retailer in the last six months?” respondents were identified to ensure their suitability for participation. Only those who responded affirmatively were included in the primary survey. A total of 260 respondents were participated in the study however, some were excluded due to missing data. The final sample comprises 230 valid responses. 55.2% of them were males and 44.8% were females. 69 responses had an age group of 18-24 years and 129 responses had an age group of 25-31 years. The age group of 32-38 years consists of 9 responses and 23 responses were from the age group of 39-45 years. Additional information of the demographic profile has been shown in Table 1.

Table 1: Demographic profile of respondents

Characteristic	Items	Frequency	Percent
Gender	Male	127	55.2
	Female	103	44.8
Age (in years)	18–24	69	30.0
	25–31	129	56.1
	32–38	9	3.9
	39–45	23	10.0
Education Level	Under Graduate	6	2.6
	Graduate	49	21.3
	Post-Graduate	129	56.1
	Professional	30	13.0
	Others	16	7.0
Marital Status	Unmarried	179	77.8
	Married and No Children	29	12.6
	Married and Having Children	22	9.6
Occupation	Student	127	55.2
	Self-employed	11	4.8
	Govt. employee	53	23.0
	Private employee	12	5.2
	Retired	14	6.1
	Others	13	5.7
Monthly Family Income	Less Than Rs. 50,000	61	26.5
	Rs. 50,001–100,000	64	27.8
	Rs. 100,001–200,000	50	21.7
	Above Rs. 200,000	55	23.9

Measurements

Scales from earlier literature were borrowed and slightly modified to the specific context of omni-channel retailing. As the survey was administered in English and the target respondents were proficient in the language, no translation was required. However, to ensure contextual relevance and clarity, minor wording adjustments were

made. These modifications were validated through consultations with academic researchers. Additionally, a pilot study was conducted to test content validity and ensure that all items were comprehensible and culturally appropriate for the Indian retail environment. The scale of Le and Nguyen Le, (2020) and Zhang et al. (2018) was modified for evaluating 10 items of channel integration. For 6 items of customer empowerment, the scale of Zhang et al. (2018) was adapted. Customer experience containing 6 items was taken from the scale of Tyrväinen *et al.* (2020). Satisfaction having 8 items were selected from the scale of Song and Zinkhan, (2008). All statements were measured on a five-point Likert scale with endpoints ‘1-strongly disagree’ and ‘5-strongly agree’.

Results

To ensure the reliability and validity of the constructs, SmartPLS 4.0 was used, applying the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach to evaluate both the measurement and structural aspects of the model. Furthermore, common method bias was assessed to enhance the robustness and credibility of the results.

Common Method Bias

The validity of the results may be threatened by common method bias, which occurs when data for both independent and dependent variables are gathered from the same source. Both statistical and procedural controls were used to allay this worry. In particular, in accordance with Podsakoff et al. (2003), this study used Harman’s single-factor test using Exploratory Factor Analysis (EFA) in SPSS. In order to ascertain if a single factor explains the bulk of the variance—a finding that would suggest the existence of common method bias—this method entails examining every measurement item. A common threshold for concern is when a single factor explains more than 50% of the variance. In this case, the unrotated principal component analysis revealed that a single factor accounted for 37.567% of the total variance, which is well below the critical threshold. Therefore, it can be concluded that common method bias is not a significant concern in this study.

Measurement Model Analysis

In this research, channel integration is included as a reflective-reflective construct. Firstly, the model of first-order construct was measured and then the second-order construct was run by using an embedded two-stage approach. The results of first-order construct are shown in Table 2.

Table 2: First order measurement model results (convergent validity and reliability)

Constructs	Dimensions	Items	Factor Loadings	CR (rho_a)	AVE
Channel Integration (Reflective construct)	Channel service configuration (CSC)	CI1_CSC	0.831	0.775	0.689
		CI2_CSC	0.823		
		CI3_CSC			
			0.835		

Constructs	Dimensions	Items	Factor Loadings	CR (rho_a)	AVE
	Integrated Interactions (II)	CI1_II	0.870	0.886	0.632
		CI2_II	0.846		
		CI3_II	0.740		
		CI4_II	0.765		
		CI5_II	0.817		
		CI6_II	0.721		
Customer Empowerment (Reflective construct)		CEMP_1	0.709	0.815	0.511
		CEMP_2	0.686		
		CEMP_3	0.646		
		CEMP_4	0.778		
		CEMP_5	0.798		
		CEMP_6	0.660		
Customer Experience (Reflective construct)		CE_1	0.787	0.887	0.631
		CE_2	0.799		
		CE_3	0.730		
		CE_4	0.801		
		CE_5	0.848		
		CE_6	0.797		
Satisfaction (Reflective construct)		SAT_1	0.778	0.888	0.547
		SAT_2	0.629		
		SAT_3	0.741		
		SAT_4	0.746		
		SAT_5	0.839		
		SAT_6	0.723		
		SAT_7	0.772		
		SAT_8	0.668		

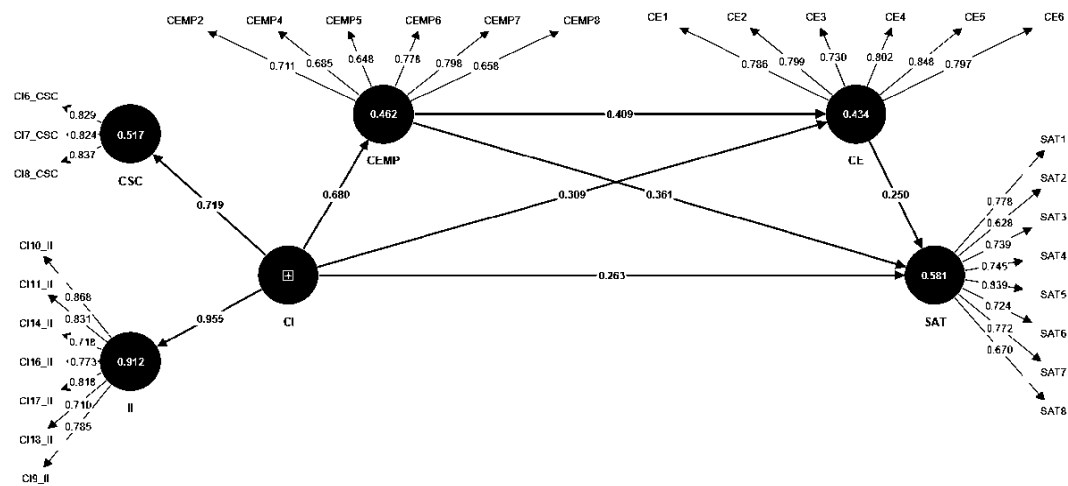
In the first-order measurement model, all the constructs were of reflective scale. Before estimating the relationship between all constructs, convergent validity was established by looking at factor loadings, composite reliability and average variance extracted. The results of the first-order are shown in Table 1 and Figure 2. It is recommended that the factor loadings for each item surpass 0.50, and the composite reliability (CR) for each scale should also exceed 0.70 (Hair et al., 2006). Reliability in exploratory study ranges between 0.60 and 0.70 are usually considered ‘acceptable’, while values falling between 0.70 and 0.90 are regarded as ranging from ‘satisfactory to good’. Values which are over 0.90 values, and particularly higher than 0.95 values, could be problematic as they suggest that the indications are redundant, which reduces the construct validity (Diamantopoulos et al., 2012) and the value of Average Variance Extracted (AVE) value should exceed the 0.50 barrier that is recommended by Fornell and Larcker, (1981).

The results show that the factor loadings of all the constructs vary between .629 and .848. To illustrate the reliability of constructs, we have employed composite reliability, or rho_a. This measure is typically seen as an appropriate compromise between the two, the liberal composite reliability or rho_c, and the conservative

Cronbach's alpha. All values fall within the prescribed threshold range, exceeding 0.70 but remaining below 0.90. Additionally, all variables exhibit Average Variance Extracted (AVE) values surpassing the threshold limit of 0.50, as recommended by Hair et al. (2019). Consequently, convergent validity for this model has been proven.

Following the establishment of convergent validity, the next step is to verify discriminant validity. This was assessed using the Fornell and Larcker, (1981) criteria, which stipulates that either all diagonal values must exceed the other non-diagonal values or the square root of the Average Variance Extracted (AVE) of each variable must surpass the correlation with all other variables (i.e., $\sqrt{AVE} > r$). As per our results, shown in Table 3, $\sqrt{AVE}$ is more than r value. Therefore, this study's discriminant validity is also confirmed.

Figure 2: First order measurement model



Source: Author's work

Table 3: Discriminant validity (Fornell and Larcker, 1981 criteria) of first order measurement model

	Channel Service Configuration (CSC)	Integrated Interactions (II)	Customer	Channel Service Configuration (CSC)	Integrated Interactions (II)
Channel Service Configuration (CSC)	0.794				
Integrated Interactions (II)	0.619	0.715			
Customer Empowerment	0.423	0.544	0.830		
Customer Experience	0.555	0.608	0.485	0.795	
Satisfaction	0.628	0.695	0.567	0.583	0.739

Second-Order Measurement Model

In our study, channel integration has been used as a second-order construct. An 'Embedded two stage approach' was followed in this scenario. According to this approach, for the first-order, we took all the statements of the dimensions of a construct but for the second construct, we draw latent scores of the dimensions and get a new measurement model. The same procedure is followed for the second-order as well. Firstly, convergent validity has been examined by measuring the factor loadings, composite reliability and AVE. As per the results shown in Table 4 and Figure 3, the factor loadings vary between .627 and .879 which is acceptable (Hair et al., 2019). Composite reliability ranges between .815 and .889 which is satisfactory according to the threshold value (above .70). AVE values of all the constructs are more than .50 which is above the minimum threshold value. So, convergent validity has been established for this study.

Table 4: Second order measurement model results (convergent validity and reliability)

Constructs	Items	Factor Loadings	CR	AVE
Channel Integration (Reflective Construct)	LV_CSC	0.843	0.859	0.742
	LV_II	0.879		
Customer Empowerment (Reflective Construct)	CEMP_1	0.708	0.815	0.511
	CEMP_2	0.684		
	CEMP_3	0.648		
	CEMP_4	0.777		
	CEMP_5	0.799		
	CEMP_6	0.660		
Customer Experience (Reflective Construct)	CE_1	0.787	0.886	0.631
	CE_2	0.799		
	CE_3	0.730		
	CE_4	0.802		
	CE_5	0.847		
	CE_6	0.797		
Satisfaction (Reflective Construct)	SAT_1	0.778	0.889	0.547
	SAT_2	0.627		
	SAT_3	0.738		
	SAT_4	0.744		
	SAT_5	0.840		
	SAT_6	0.725		
	SAT_7	0.774		
	SAT_8	0.671		

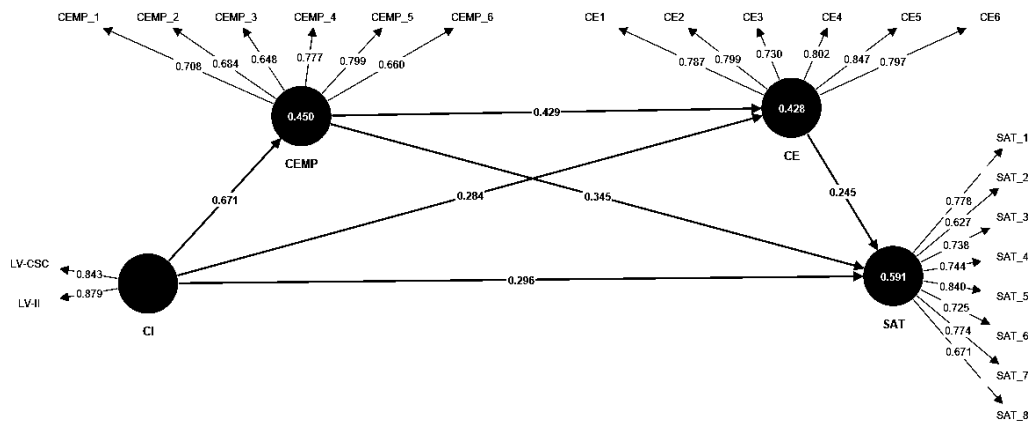
After that, the discriminant validity has been taken into account. The Fornell and Larcker, (1981) criteria has been followed in which all the diagonal values should be more than the other non-diagonal values representing the correlation between other

constructs ($\sqrt{AVE} > r$). All the AVE values which are bolded were found to be more than the r values (non-diagonal) i.e. above the threshold value of .50 as shown in Table 5. Hence, discriminant validity has also been established for our model.

Table 5: Discriminant validity- (Fornell and Larcker, 1981 criteria) of second order measurement model

	Channel Integration	Customer Empowerment	Customer Experience	Satisfaction
Channel Integration	0.794			
Customer Empowerment	0.619	0.715		
Customer Experience	0.572	0.671	0.861	
Satisfaction	0.628	0.695	0.668	0.739

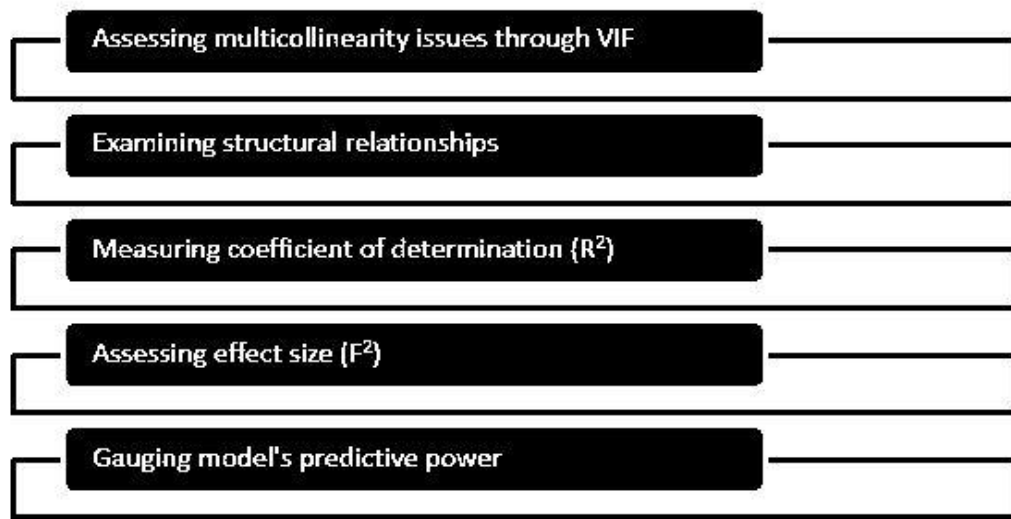
Figure 3: Second order measurement model



Source: The Author

Structural Model Analysis

To analyze the structural model, smartpls4 has been used. There are different measures through which the structural model has been evaluated. We have used the coefficient of determination (R^2), effect size (f^2), predictive power (Q^2), path coefficient and indirect results. There are a few steps which are followed to ensure structural reliability as shown in Figure 4. Although assessing model fit is assumed to be optional.

Figure 4: Procedure for evaluating structural models

Source: Author's work

Assessing Multicollinearity Issues

To assess whether multicollinearity exists or not, VIF values were evaluated. Although VIF values of more than 5 indicate likely problems with collinearity amongst predictor constructs, collinearity can also happen at lower VIF values of 3–5 (Becker et al., 2015). Below 3 is an indicator of a no multicollinearity problem. All the values of the inner model are below 3 as shown in Table 6.

Table 6: VIF Results

	VIF
CE -> SAT	1.749
CEMP -> CE	1.817
CEMP -> SAT	2.139
CI -> CE	1.817
CI -> CEMP	1.000
CI -> SAT	1.959

Examining Hypothesis Results

In this step, the relationship between variables were examined by looking at the values of path coefficient for estimating direct relationships. In case of a mediator, specific indirect effects and direct effects were taken into account. For running the structural model, we performed a bootstrapping model at 5000 samples with a two-tail significance test. For the broader picture of the relationship of structural model, examination of total effects between constructs is important. It comprises both direct and indirect effects (Nitzl et al., 2016). The results of the hypothesis indicate that all the direct relationships between the variables are supported. Hence, H1 to H4 are accepted and their results are shown in Table 7 and Figure 5.

Table 7: Hypothesis test results

Relationship of Construct	Beta value	T-value	F ²	P-value	Results
CI → SAT	0.263	3.981	0.081	0.000*	Accepted
CI → CEMP	0.680	21.304	0.860	0.000*	Accepted
CEMP → CE	0.409	5.508	0.159	0.000*	Accepted
CE → SAT	0.250	4.634	0.084	0.000*	Accepted

Note: Significance level **<.1, *<.05, ***<.01

Mediation Results

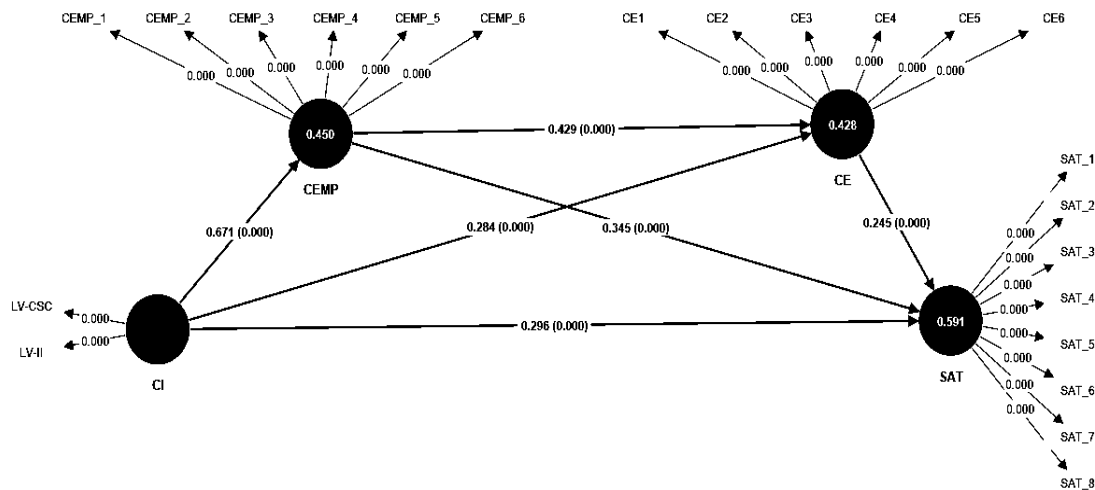
The results of mediation are evaluated by considering the Baron and Kenny, (1986) approach. Bootstrapping was done 5000 times with a 95% confidence interval showing the indirect effects. This study has taken channel integration as the independent variable and satisfaction as the dependent variable, whereas there are two mediators: customer empowerment and customer experience affecting the above relationship. The results of the mediation are shown in Table 8.

Table 8: Mediation results

	Indirect effects	Direct effects	Total effects	P-value	95% Confidence Interval	Results
CI>CEMP>SAT	0.231	0.296	0.527	0.000*	[0.129, 0.333]	Accepted (Partial mediation)
CI>CE>SAT	0.070	0.296	0.366	0.003*	[0.024, 0.116]	Accepted (Partial mediation)
CI>CEMP>CE>SAT	0.070	0.296	0.366	0.000*	[0.031, 0.109]	Accepted (Partial mediation)

Notes: Significance level **<.1, *<.05, ***<.01

As per the results demonstrated in Table 8, it has been shown that customer empowerment is playing a partial mediator role in the relationship between channel integration and satisfaction. It has been found that there is both direct and indirect relation between the variables which is significant, hence H5 is supported. The relationship between channel integration and satisfaction is partially mediated by the customer experience as there is a significant direct and indirect effect which is shown in Table 8. Hence, H6 is also supported. After that, we examine the joint or serial mediating effect of both customer empowerment and customer experience between channel integration and satisfaction. The results were found to be significant for both direct and indirect effects. So, H7 is also supported.

Figure 5: Structural model

Source: Author's work

Measuring Coefficient of Determination (R^2)

The measure which represents the explanatory power of the model is known to be R^2 . It reflects the amount of variance that each endogenous construct accounts for (Shmueli and Koppius, 2011). According to the results, it has been determined that the R-squared (R^2) value accounts for 0.591, which equates to explaining 59% of the variance in the dependent variable i.e. satisfaction. Greater explanatory power is shown by higher values of the R^2 , which ranges from 0 to 1.

Assessing Effect size (F^2)

After evaluating the model's explanatory power through R^2 , the F^2 value was reported to know about the effect size. As per Hair et al. (2014), the value of $f^2 \geq 0.02$, $f^2 \geq 0.15$, and $f^2 \geq 0.35$ represents small, medium and large effect sizes respectively. In this study, the f^2 values for channel integration, customer empowerment, and customer experience for satisfaction were calculated as 0.11, 0.136, and 0.084, respectively suggesting a medium effect size.

Assessing Model's Predictive Power

While R-squared (R^2) assesses the model's explanatory power within the sample, depicting the extent to which independent factors account for the variance in the dependent variable. Q^2 is employed to evaluate the out-of-sample predictive power of the model. Q^2 reflects the model's capability to forecast new or future observations based on the fitted model (Hair et al., 2014). $PLS_{predict}$ has been used to assess the model's predictive power. The value of q^2 up to 0.25 is considered low, the value between 0.25-0.5 indicates moderate effect and the value $\geq .5$ indicates high effect. As per our results, Q^2 of the dependent variable was found to be 0.435, which means it has a moderate predictive power.

Discussion

The results of this study highlight the significance of channel integration and provide insight into how it might improve customer satisfaction in the context of omni-channel retail. Additionally, our study looks at the mediating roles that customer experience and customer empowerment play in the relationship between channel integration and satisfaction using customer empowerment theory. As per the findings of the study, a positive correlation has been found between channel integration and satisfaction representing H1. This study is consistent with (Aripin et al., 2024; Seck and Philippe, 2013). It means that when customers feel a smooth, connected experience across all the ways they interact with a retailer—whether in-store, online, or through an app—they're more likely to feel happy and satisfied with their purchase.

With regard to H2, it has been found that there is a positive relationship between channel integration and customer empowerment. Channel integration in omni-channel retail empowers customers by giving them easier and more flexible access to products, services and information across multiple touchpoints. They can easily browse, evaluate and buy products via a variety of channels. This finding is also consistent with the previous study of Le and Nguyen-Le (2020). Hence, H2 is supported.

A customer's experience will start to improve when they feel empowered to find what they need and want in the retail environment. Retailers aim to give customers more control over their shopping experience, leading to a more satisfying and enjoyable transaction. The results are in tune with the study of Hanh Le and Nguyen Le (2020); Wathieu et al. (2002). Hence, H3 is also supported.

As far as H4 is concerned, the findings clearly indicate that a positive customer experience across different touchpoints has a substantial impact on elevating customer satisfaction levels. This highlights the critical importance of providing consistent and seamless experiences across all channels. It emphasizes the need to ensure that customers receive personalized, relevant, and engaging interactions, irrespective of the channel through which they choose to engage. This study coincides with earlier research of Yunpeng and Khan (2023) in which they found a positive impact of experience on satisfaction in an online context. Therefore, H4 is also supported.

Hypothesis, H5, H6 and H7 shows the association between channel integration and satisfaction through a serial mediation impact of customer empowerment and customer experience. It has been found that firstly, customer empowerment plays a mediating role between the above relationships as it increases the advantages of channel integration by giving consumers more power over their purchasing encounters, which leads to customer satisfaction. As there are both direct and indirect effects emerging in the said relationship, partial mediation exists in this case. This study is consistent with the previous research of Ürgüplü (2020). Hence, H5 is supported.

After that, the mediation impact of customer experience has been taken into account and it has been found that there is a positive and significant relationship between channel integration and satisfaction through customer experience. In other words, channel integration alone may not guarantee satisfaction; rather, it's the quality of the customer experience within those integrated channels that ultimately determines satisfaction levels. These results are similar to that of Torrico et al. (2020). Hence, H6

is also supported.

Channel integration and customer satisfaction are mediated by customer empowerment and customer experience together. It simply suggests that if retailers provide integrated channels to customers and provides them control over the shopping journey, it will make them more empowered which leads to a positive customer experience and ultimately satisfaction (Hanh Le and Nguyen Le, 2020). The impact of both customer empowerment and customer experience on serial mediation is examined in our study, which makes a unique contribution to the body of literature because this relationship hasn't been studied in other earlier research.

The findings of partial mediation indicate that channel integration directly enhances customer satisfaction, however, its impact is significantly amplified when retailers empower customers and improve their experience. For retailers, this means that simply integrating channels is not enough—investing in tools and strategies that actively engage and empower customers (e.g., personalized interfaces, real-time support) can maximize satisfaction and drive competitive advantage.

Although our findings offer a new perspective, they align with earlier research that emphasizes the individual importance of customer empowerment and customer experience in omni-channel retailing. As a result, H7 is also supported. Building on this foundation, our study enhances the depth and breadth of understanding consumer behavior within the omni-channel retail environment.

Limitations and Future Research Directions

The current research has identified several constraints that may serve as valuable insights for guiding future research endeavors. The study's sample is skewed towards younger individuals, with 56% aged 25–31 and 55% being students, which may limit generalizability. Future research should include more diverse age and occupational groups and explore different industry settings to enhance the applicability of findings. This study focuses on only apparels category, so future studies can incorporate other categories such as electronics, food and cosmetics etc. We have conducted this study in a specific region which confines the extent to which the results can be applied to a larger population. To further elaborate consumer satisfaction, forthcoming research could integrate various constructs, like repurchase intention, loyalty and word-of-mouth. Future research can use quantitative methods such as longitudinal survey or a combination of both qualitative and quantitative methods. The present study has incorporated customer empowerment and customer experience as mediators, so, future research could focus on other variables like trust, engagement to look out for any significant difference between different variables. Apart from these limitations, the findings of this study offer valuable insights for both retailers and researchers.

Practical Implications for Asian Business

This study advances the development of Consumer Empowerment Theory by extending its application in the context of omni-channel retailing. The study is methodologically sound and contributes to the evolving understanding of omni-channel satisfaction

mechanisms. The use of serial mediation through customer empowerment and experience provides a fresh angle. Specifically, it introduces channel integration as a catalyst for customer empowerment, giving shoppers more power on how they interact with brands, which in turn leads to behavioral outcomes such as enhanced customer experience and satisfaction (Ismail and Kortam, 2024; Berraies and Hamouda, 2018). By examining serial mediation through customer empowerment and customer experience, the study offers a novel framework that deepens the theoretical understanding of how omni-channel strategies influence customer perception and behavior. Given that omni-channel retailing is still evolving—particularly in developing economies such as India—this study provides foundational insights and encourages further theoretical exploration in similar contexts.

This research highlights satisfaction as a key outcome of channel integration, mediated by empowerment and experience. This is especially relevant given the notable changes that have occurred in the retail industry over the past years which holds significance for Asian businesses. This research emphasizes the crucial role of integrating channels in enhancing customer empowerment and shaping their overall experience. This study highlights how important it is to address omni-channel management holistically, emphasizing not only technological integration but also the empowerment of customers to navigate seamlessly through various touchpoints. The findings confirm that channel integration is correlated with empowerment, experience and satisfaction with the help of consumer empowerment theory. Explaining these relationships contribute to the understanding of omni-channel dynamics. It also offers useful advice for Asian businesses looking to maximize customer pleasure in the connected retail environment of today.

This study suggests a few implications for retailers/businesses to level up their game of omni-channel retailing by delivering seamless experiences. Firstly, they need to ensure smooth integration between online and offline channels. This necessitates coordination with regard to branding, pricing, promotions and customer service. Retailers should provide services like click-and-collect, verify product availability in-store through mobile applications and online returns at physical locations that are increasingly expected by modern consumers (Zhang et al., 2018). Retailers must enable the consumers to seamlessly switch between online and offline platforms without encountering any disruptions.

In order to make the customers empowered, Asian retailers should focus on giving consumers greater control over their shopping journey by making significant investments in reliable technology, infrastructure and information search process. For example, by integrating systems like Customer Relationship Management, store employees can instantly view a customer's online browsing or purchase history, allowing them to provide tailored recommendations and a more personalized in-store experience. Further, retailers should offer real-time chatbot support and tailored suggestions via mobile applications which can greatly enhance the customer's sense of control and empowerment.

To stay competitive, Asian retailers should focus on building apps with modern features and consider adding self-service kiosks in physical stores to further support empowered shopping experiences. Our findings suggest that enhancing the level of channel integration and empowerment impacts on the overall experience of customers as it plays

an important role in the decision making of purchase journey. Retailers should offer flexibility and convenience in buying, picking and returning the products. They should let customers choose delivery speed and time and empower frontline employees to make decisions to fix problems which ultimately enhance the customer's experience. The main aim of the business is to enhance the satisfaction of consumers and for doing so, they need to focus on the variables which hold significance in this study.

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