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Pinki Rani, Ubba Savita

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Investigating customer involvement, customer engagement dimensions, and customer loyalty in the smartphone industry: a social exchange theory perspective

Pinki Rani* and Ubba Savita

Haryana School of Business,
Guru Jambheshwar University of Science and Technology,
Hisar, Haryana, India
Email: pinkiranimohit@gmail.com
Email: u_savita@yahoo.co.in
*Corresponding author

Abstract: This study examines how customer involvement influences customer engagement and loyalty in the smartphone industry, focusing on the mediating role of engagement dimensions. Using social exchange theory (SET) as a framework, the research analyses data from 222 smartphone users in Rajasthan, India, employing SmartPLS 4.0 for analysis. The findings reveal that customer involvement significantly impacts loyalty both directly and through cognitive, emotional, and behavioural engagement, with emotional engagement emerging as the most influential mediator. The study offers valuable insights for managers and suggests areas for future research. The study's originality lies in highlighting emotional engagement as a crucial mediator in the involvement-loyalty relationship within the smartphone sector, grounded in social exchange theory (SET).

Keywords: customer involvement; cognitive customer engagement; emotional customer engagement; behavioural customer engagement; customer loyalty; smartphone; social exchange theory; SET.

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Biographical notes: Pinki Rani is currently a Senior Research Fellow in the Haryana School of Business, Guru Jambheshwar University of Science and Technology, Hisar, Haryana, India. Her research area is marketing. She is an eager scholar and has presented and published many research papers in conferences and reputed journals.

Ubba Savita is currently a Professor in the Haryana School of Business, Guru Jambheshwar University of Science and Technology, Hisar, Haryana, India. She has total working experience of 19 years. Her research areas are marketing and retailing.

1 Introduction

In today's global era, technology has become a crucial part of our daily lives. The phrase 'the world is at your fingertips' is more relevant now than ever (Kavitha and Muthulakshmi, 2023). The world has witnessed the paradigm shift from fixed and bulky desktops to embracing the portability of laptops and finally smartphones. This has completely revolutionised the way we carry out our daily lives. India is rapidly emerging as one of the fastest-growing markets in the world (Kavitha and Muthulakshmi, 2023), and top global smartphone companies like Samsung, Xiaomi and other brands regularly launch new models as they compete fiercely to grab customers' attention. It is challenging for smartphone companies to ensure that consumers will select the same brand when they replace their phones.

The latest report on smartphones in India from Counterpoint (May 21, 2024) reveals the volatile market shares among manufacturers showing fierce competition among the players¹. The variability in market share indicates that smartphone manufacturers struggle to maintain their position in the market due to the high frequency of customers switching brands. Hence, it is imperative for smartphone manufacturers to effectively engage their customers in a positive manner and foster loyalty towards their brand. Customer engagement (CE) involves connecting with customers in a meaningful way to build relationships (Brodie et al., 2013). It has become essential in marketing to achieve a competitive edge (Van Doorn et al., 2010; Raghavan and Pai, 2021). According to Hollebeek (2011), it is the degree of a customer's cognitive, affective, and behavioural contribution to his interaction with a brand. Higher CE often leads to greater loyalty (Subramaniam et al., 2023), ultimately contributing to the long-term success and profitability of a brand.

Earlier studies on CE reveal that its main drivers include customer brand experience (Kumar et al., 2024), customer involvement (Izogo and Mpinganjira, 2022), service value (Subramaniam et al., 2023) customer satisfaction (Khan and Wahab, 2023) Self-brand connection (Monferrer et al., 2019), Customer-brand identification, Corporate social responsibility (Agyei et al., 2021) and customer experience (Chen et al., 2022). Customer involvement is a key factor in fostering CE (Sallaku and Vigolo, 2024), often regarded as a 'tool to predict the interest of certain products to consumers and the products' corresponding importance' (Lee and Kim, 2018). However, despite its importance, the relationship between involvement and CE has received comparatively less attention in research. Notably, there is lack of research examining the relationship between customer involvement and CE within the smartphone industry. To bridge this research gap, we outline two primary objectives for our study. Firstly, we aim to investigate the impact of customer involvement on the different dimensions of 'CE' and its subsequent effect on loyalty within the smartphone context. Second, using parallel mediation, explore whether dimensions of CE act as mediators between customer involvement and loyalty and identify the dimension that plays the strongest mediating role.

This research provides a significant contribution by examining the influence of customer involvement on the dimensions of CE in the smartphone sector. It shows how customer involvement in the smartphone sector shapes CE, which further affects customer loyalty. Next, the research also explores how the dimensions of CE affect the relationship between customer involvement and customer loyalty. In other words, the study examines the dimensions of CE as mediators and identifies the most influential

mediators among them. Thus, this research enhances our understanding of the relationship between customer involvement, CE, and customer loyalty in the smartphone industry, which can help marketers in the smartphone industry achieve their goal of long-term customer relationships.

The study is organised as follows: first, the literature review and development of hypotheses are presented. Subsequently, we present the research methodology, proceed to the results and analysis section, and conclude with the discussion and implications.

2 Literature review and development of the hypothesis

2.1 Social exchange theory (SET)

A major framework, SET, is widely used to provide a deeper understanding of the brand-customer relationship. Under SET, ‘individuals decide to engage in a social exchange based on their perception of the tangible and intangible costs and benefits of engaging in a relationship’ (Gligor and Bozkurt, 2022; Sallaku and Vigolo, 2024). Whereas, Hollebeek (2011) explains that people form relationships based on potential benefits and costs. This study explores how customer involvement, engagement, and loyalty are interconnected, using SET as an analytical framework. From SET perspective, customers who are highly involved perceive greater potential rewards in engaging with the brand (e.g., better products, status). They are more inclined to engage deeply with the company or brand because they believe the potential benefits outweigh the costs (e.g., time spent researching, financial investment and efforts). This increased involvement leads to higher engagement levels across cognitive, emotional, and behavioural dimensions. As engagement intensifies, customers come to feel that the benefits they receive from the brand surpass the costs, fostering stronger loyalty. Thus, greater the involvement and engagement, more likely the customers are to remain loyal to the brand, viewing their relationship as valuable and rewarding.

2.2 Customer engagement

Within the marketing discipline, CE has emerged as a prominent concept and is attracting more attention in academic research (Lim et al., 2022). After evaluating the existing literature, it is found that there is no single concrete definition of CE (Hepola et al., 2020), rather all researchers have defined it in different ways. Van Doorn et al. (2010) said that CE involves a customer’s interaction and connection with a company or brand that extends beyond mere transactions and is driven by underlying motivational incentives. Whereas, Bowden (2009) defined it as a psychological process that illustrates the fundamental mechanisms through which new customers develop loyalty and repeat customers maintain loyalty.

Thus, CE is a broad term that encompasses emotional, cognitive, and behavioural aspects in addition to transactional interactions, representing a comprehensive understanding of a customer’s relationship with a brand (Hollebeek, 2011). Brodie et al. (2011), Hollebeek et al. (2014), and Raghavan and Pai (2021) have mainly highlighted three dimensions of CE, which are as follows:

- 1 Cognitive CE: it describes how much a customer thinks about a particular brand and how much detail he/she gives when interacting with that brand (Hollebeek et al., 2014). That is, what level of mental exertion a customer makes while interfacing with a specific brand. Cognitive CE, for example, consolidates those customers who search for information about a particular brand and stay up-to-date with its new development (Hollebeek, 2011).
- 2 Emotional CE: this aspect manages the degree of brand-related effect and positive emotional reaction during the connection between the brand and the customer (Hollebeek et al., 2014). Positive emotions, such as joy, pride, and status in society, are crucial in fostering more profound connections with the brand. For example, emotional attachment is promoted when customers are proud to own a brand's product or happy when using it (Bowden, 2009).
- 3 Behavioural CE: it includes the actions and behaviours that a customer displays towards a particular brand, such as brand-related purchases and participation (Van Doorn et al., 2010). These behavioural activities indicate how much time, effort, and energy customers invest during brand interactions (Hollebeek et al., 2014).

In this study, the CE variable is taken as a multi-dimensional concept, and all three dimensions mentioned above are included.

2.3 Customer involvement

In marketing, customer involvement is a key variable for understanding the customer-decision-making process. According to Mittal (1989), customer involvement is a key determinant of customer behaviour, influencing how customers process information, make decisions, and interact with brands. Zaichkowsky (1985) defined customer involvement as 'a person's perceived relevance of the object based on inherent needs, values, and interests'. Customer involvement is distinct from CE because it can be cognitive, emotional, and motivational but does not involve behavioural actions. That is, a customer may be cognitively engaged with a brand, feel connected, and even be motivated, but this does not guarantee that an involved customer will perform behavioural actions such as purchasing or publicly praising the brand. However, CE encompasses both internal dimensions and actual behavioural actions.

In previous research, customer involvement has often been framed as a precursor to CE (Touni et al., 2020; Cheung and To, 2021; Izogo and Mpinganjira, 2022). Expanding upon this basis, we propose that 'customer involvement' significantly influences the different dimensions of 'CE'. So, we propose the following hypothesis:

- H₁ Higher customer involvement leads to increased cognitive CE.
- H₂ Higher customer involvement leads to increased emotional CE.
- H₃ Higher customer involvement leads to increased behavioural CE.

2.4 *Customer loyalty*

Early researchers primarily concentrated on measuring loyalty through re-purchase behaviour or the frequency of repeated transactions. They believed that how often a customer returned to make additional purchases is a key indicator of their loyalty to a brand or product (Anderson and Srinivasan, 2003; Seduram et al., 2016; Bhale and Bedi, 2024). However, other researchers argued that a customer's attitude plays a more crucial role in defining loyalty (Mellens et al., 1996; Amine, 1998). According to these scholars, the psychological attachment, positive feelings, and favourable attitude a customer holds towards a brand, form the foundational elements of true loyalty.

Loyalty is defined as 'a deeply held commitment to rebuy or repatronise a preferred product/service consistently in the future' (Oliver, 1999). According to Oliver (1997) and Shin and Back (2020), loyalty encompasses both attitudinal and behavioural phases. 'Cognitive, affective, and conative loyalty' are the three main stages that comprise the attitudinal phase. Finally, this process culminates in action loyalty, where the customer's loyalty is manifested through consistent, repeat purchase behaviours (Oliver, 1997). This sequential development illustrates how attitudinal loyalty lays the foundation for behavioural loyalty, leading to a robust and enduring customer-brand relationship.

Furthermore, the prevailing perspective in the literature contends that 'CE' leads to the emergence of customer loyalty (Gummerus et al., 2012; Kosiba et al., 2018; Parihar and Dawra 2020; Vinerean and Opreana, 2021; Khan and Fatma, 2023; Kaur et al., 2023; Sallaku and Vigolo, 2024). Previous studies have also contended that 'customer loyalty' is determined by the customer's level of involvement (Iwasaki and Havitz, 2004; Sparks, 2007; San Martin et al., 2013; Gursoy et al., 2014; Gyulavári and Dörnyei, 2014; Khan and Rizwan, 2014; Parihar et al., 2018). Hence, we hypothesise that:

- H₄ Higher cognitive CE leads to increased customer loyalty.
- H₅ Higher emotional CE leads to increased customer loyalty.
- H₆ Higher behavioural CE leads to increased customer loyalty.
- H₇ Higher customer involvement leads to increased customer loyalty.

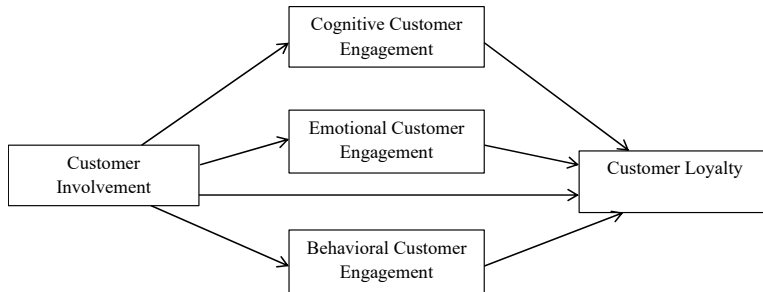
2.5 *Parallel mediation*

Parihar et al. (2018) asserted that CE plays a pivotal role as a mediator within the dynamic interplay between consumer involvement and customer loyalty. Their research suggests that the level of consumer involvement with a brand or product significantly impacts their loyalty. However, they argue that this relationship is not direct but rather influenced by the degree of CE. Building upon their findings, we formulate the hypothesis that:

- H₈ Cognitive CE mediates the link between customer involvement and customer loyalty.
- H₉ Emotional CE mediates the link between customer involvement and customer loyalty.
- H₁₀ Behavioural CE mediates the link between customer involvement and customer loyalty.

Based on the previous discussion, we have developed a hypothesised model that integrates various elements to show how customer involvement significantly impacts the different dimensions of CE in the context of smartphones. Further, the model suggests that various dimensions of CE act as important mediators in the relationship between customer involvement and loyalty. The model plans to give a more profound comprehension of the perplexing collaborations in the smartphone space. The proposed model is presented in Figure 1.

Figure 1 Hypothesised model



3 Research methodology

3.1 Instrument development

In the ongoing study, all scales were taken from prior research based of their significance and afterward carefully adjusted to suit the smartphone setting. The scales created by 'Kapferer and Laurent (1993)' were utilised to measure customer involvement. CE was estimated utilising the scales proposed by 'Hollebeek et al. (2014)' and 'Braun et al. (2017)'. Lastly, the structure created by 'Chaudhuri and Holbrook (2001) and So et al. (2016)' was utilised to device customer loyalty. Every item of this study was estimated on a 'five-point Likert scale going from 1 (strongly disagree) to 5 (strongly agree)'.

3.2 Sample and data collection

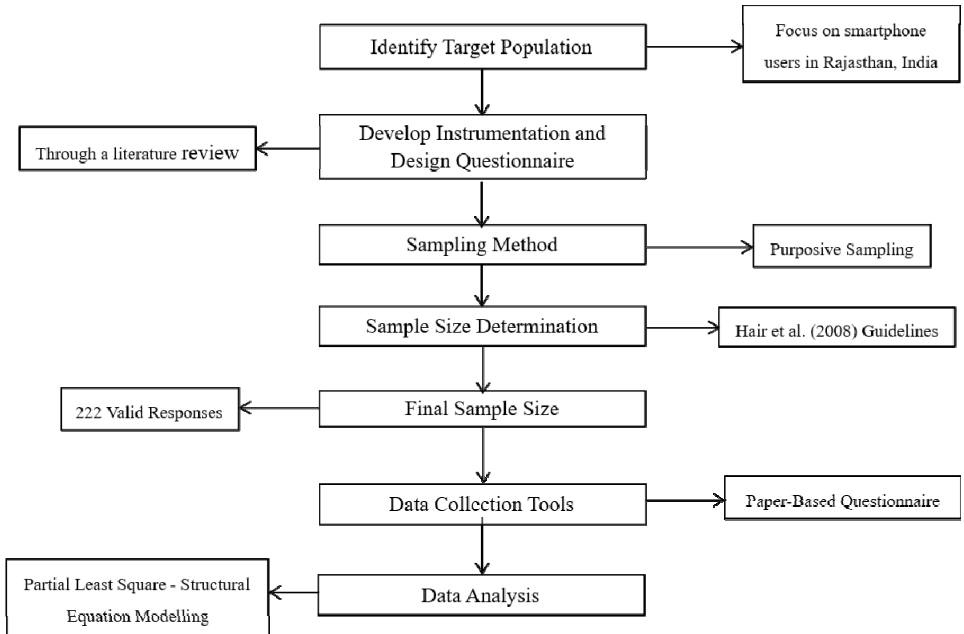
To accomplish the objectives of the study and approve the estimated relationship, a quantitative research configuration was utilised, focusing in expressly on smartphone users. A purposive sampling process was used to gather responses, focusing on smartphone users who had been connected with a particular brand for something like three years. This criterion ensured that participants had sufficient experience and familiarity with the brand to provide meaningful insights into customer involvement, engagement, and loyalty.

Hair et al. (2008) guidelines were followed for determining the sample size. Hair et al. (2008) indicate that the minimum sample size should be five times each survey statement, and the maximum should be ten times each survey statement. A total of 21 statements were included in our study, so 210 respondents were required to ensure statistical validity and reliability. However, we collected data from 222 respondents to ensure a broad representativeness of the study.

The data was collected in compliance with all ethical guidelines. We informed the participants about the purpose of the study before they filled out the questionnaire, ensuring their voluntary participation and maintaining the confidentiality of their responses. Before collecting the data from the respondents, three screening questions were asked. The first was which brand of smartphone they owned, and the brand names of smartphones have been kept anonymous in the study to avoid any conflict of interest. Second, they were asked how long they have owned that smartphone brand. Because only those respondents were included in the study who had experienced and associated with that smartphone for at least three years. And thirdly, were they willing to participate in this research or not? Only those who said ‘yes’ to all three questions were asked to fill out the questionnaire.

The data was collected from Rajasthan (India), as its diverse population and variety of socio-economic backgrounds provide a wide range of respondents. A total of 250 questionnaires were distributed. We excluded 28 respondents due to insufficient data. Hence, the final 222 respondents who gave valid responses were included in the study. Figure 2 provides a brief step-by-step breakdown of the entire data collection process. Out of the total 222 respondents, 97 were men, i.e., 43.7%, and 125 were women, i.e., 56.3%. Apart from this, 148 (66.7%) respondents were aged 25 years and below, and 74 (33.3%) respondents were aged above 25 years. The overall demographic profile is summarised in Table 1.

Figure 2 Comprehensive research methodology



3.3 Data analysis

This section provides a comprehensive overview of the methods used to analyse the collected data, the findings obtained, and the interpretation of these findings in relation to

the hypotheses. Reliability and validity of the variables were ensured using the SmartPLS 4.0 technique. We have used the PLS-SEM method to estimate the ‘measurement model and structural model’.

Table 1 Demographic profiles

<i>Variable</i>		<i>Category</i>	<i>Count (n)</i>	<i>Percentage</i>
Gender	1	Male	97	43.7
	2	Female	125	56.3
Age (in years)	1	25 or less	148	66.7
	2	More than 25	74	33.3
Marital status	1	Married	67	30.2
	2	Unmarried	155	69.8
Educational qualification	1	High school	9	4.1
	2	Senior secondary	56	25.2
	3	Bachelor degree	100	45.0
	4	Master degree	49	22.1
	5	Professional degree	8	3.6
Occupation	1	Student	73	32.9
	2	Self employed	58	26.1
	3	Government employee	27	12.2
	4	Private employee	60	27.0
	5	Household	4	1.8
Monthly family income (in rupees)	1	Less than 75,000	102	45.9
	2	75,001–125,000	20	9.0
	3	125,000–175,000	51	23.0
	4	More than 175,000	49	22.1

Note: $n = 222$.

4 Analysis and findings

4.1 Measurement model evaluation

Under the measurement model, the reliability and validity of various variables are tested. For this, ‘internal consistency reliability, convergent validity, and discriminant validity’ are evaluated. First of all, ‘internal consistency reliability’ was measured by ‘composite reliability’ (CR), whose value is acceptable if it is more than 0.7 (Hair et al., 2019). In this research, all the values of CR were above 0.8, as shown in Table 2 and Figure 3. These CR values indicate sufficient ‘internal consistency and reliability’. Next, ‘convergent validity’ was evaluated through ‘average variance extracted (AVE) and outer loadings’. If the values of AVE and outer loadings are 0.5 or more, then it indicates strong ‘convergent validity’ (Hair et al., 2006).

Lastly, ‘discriminant validity’ was assessed using the ‘Fornell-Larcker criterion’. According to Fornell and Larcker (1981), constructs exhibit good discriminant validity ‘if

the square root of the AVE for each construct is greater than the correlations between that construct and any other construct'. In Table 3, the diagonal values, which correspond to the square roots of the (AVEs), are greater than the off-diagonal values, which indicate the correlations between constructs. This observation suggests that the variables possess sufficient 'discriminant validity'.

Table 2 Reliability and convergent validity

<i>Variables</i>	<i>Items</i>	<i>Loadings</i>	<i>CA</i>	<i>rho_A</i>	<i>CR</i>	<i>(AVE)</i>
Customer involvement	CI1	0.839	0.889	0.891	0.923	0.751
	CI2	0.883				
	CI3	0.871				
	CI4	0.872				
Cognitive CE	CCE1	0.838	0.869	0.901	0.904	0.652
	CCE2	0.800				
	CCE3	0.829				
	CCE4	0.758				
	CCE5	0.810				
Emotional CE	ECE1	0.884	0.852	0.855	0.911	0.772
	ECE2	0.900				
	ECE3	0.852				
Behavioural CE	BCE1	0.826	0.893	0.895	0.921	0.701
	BCE2	0.808				
	BCE3	0.820				
	BCE4	0.835				
	BCE5	0.893				
Customer loyalty	CL1	0.828	0.851	0.852	0.899	0.691
	CL2	0.798				
	CL3	0.836				
	CL4	0.862				

Note: Cronbach's alpha (CA), composite reliability (CR), average variance extracted (AVE).

Table 3 Discriminant validity

<i>Variables</i>	<i>CI</i>	<i>CL</i>	<i>BCE</i>	<i>CCE</i>	<i>ECE</i>
CI	0.866				
CL	0.599	0.831			
BCE	0.458	0.572	0.837		
CCE	0.504	0.606	0.477	0.808	
ECE	0.577	0.828	0.556	0.603	0.879

Note: CI – Customer involvement, CL – Customer loyalty, BCE – Behavioural customer engagement, CCE – Cognitive customer engagement, ECE – Emotional customer engagement.

4.2 Structural model evaluation

Once the validity and reliability of the measurement model have been confirmed, the subsequent task is to demonstrate the lack of multicollinearity problems. This is evaluated by the analysis of the variance inflation factor (VIF). In order to avoid issues of multicollinearity, Hair et al. (2011) suggest that the VIF values should be below 5. As depicted in Table 4, all VIF values are below this threshold, thereby eliminating any concerns regarding collinearity.

Figure 3 Measurement model and structural model (see online version for colours)

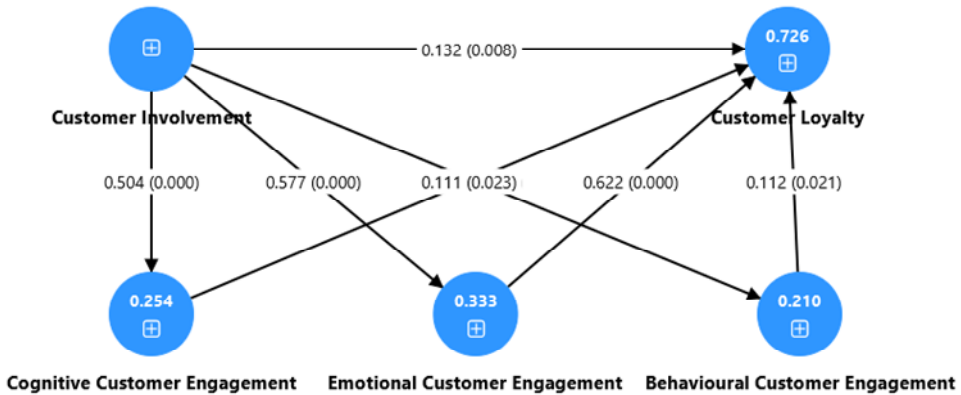


Table 4 VIF

Customer involvement		Customer engagement						Customer loyalty	
		CCE		ECE		BCE			
Items	VIF	Items	VIF	Items	VIF	Items	VIF	Items	VIF
CI1	2.106	CCE1	1.816	ECE1	2.231	BCE1	2.160	CL1	1.973
CI2	2.619	CCE2	1.975	ECE2	2.363	BCE2	1.964	CL2	1.710
CI3	2.371	CCE3	2.227	ECE3	1.868	BCE3	2.291	CL3	1.927
CI4	2.412	CCE4	1.756			BCE4	2.113	CL4	2.194
		CCE5	2.042			BCE5	3.204		

Note: CCE – Cognitive customer engagement, ECE – Emotional customer engagement, BCE – Behavioural customer engagement, VIF– Variance inflation factor.

Next, the structural model was evaluated through several key metrics: ‘the coefficient of determination (R^2), effect size (f^2), predictive relevance of variables (Q^2), and path coefficients’. First, the R^2 values for the endogenous constructs were examined to determine the explanatory power of the model. The R^2 values for cognitive CE, emotional CE, behavioural CE, and customer loyalty were 0.254, 0.333, 0.210, and 0.726, respectively. This indicates that cognitive CE accounts for 25.4% of the variance, emotional CE accounts for 33.3%, behavioural CE accounts for 21%, and customer loyalty accounts for 72.6% of the variance in the model.

Next, the effect sizes (f^2) of the individual predictors were calculated to understand their relative impact on the endogenous constructs. A value of f^2 of 0.02 is classified as

minimal, 0.15 as moderate, and 0.35 as large. In this study, the effect size of customer involvement on cognitive CE and behavioural CE is medium, on emotional CE is large, and on customer loyalty is small. Cognitive and behavioural CE have a low effect size on customer loyalty, whereas emotional CE has a substantial effect size on customer loyalty.

Additionally, PLS-Predict was evaluated using Q^2 predict values and mean absolute error (MAE). An estimated Q^2 value above zero suggests that the model has significant predictive power for the intrinsic constructs. A Q^2 value up to 0.25 is considered low, between 0.25 to 0.5 is moderate and 0.5 or higher is high. The results show that the Q^2 values for cognitive CE, emotional CE, behavioural CE, and customer loyalty are 0.239, 0.313, 0.193, and 0.338, respectively (as shown in Table 5). This indicates that cognitive CE, emotional CE, and customer loyalty have medium predictive relevance, while behavioural CE has low predictive relevance. Next, we calculated the MAE values, as presented in Table 5. Based on these values, the model demonstrates good predictive relevance.

Table 5 PLS predict

<i>Variable</i>	<i>Q^2 predict</i>	<i>MAE</i>
Cognitive CE	0.239	0.673
Emotional CE	0.313	0.636
Behavioural CE	0.193	0.669
Customer loyalty	0.338	0.633

Finally, the path coefficients were calculated to test Hypotheses H_1 to H_7 using the bootstrapping procedure with 5,000 samples at a 95% significance level in SmartPLS 4.0. As shown in Table 6 and Figure 3, all the path coefficients are significant and support the proposed hypotheses.

Table 6 Hypothesis (path coefficients)

<i>Hypothesis</i>	<i>Path relationship</i>	<i>(β)</i>	<i>T Values</i>	<i>P Values</i>	<i>F²</i>	<i>Decision</i>
H_1	CI $\rightarrow$ CCE	0.504	7.626	0.000	0.341	Supported
H_2	CI $\rightarrow$ ECE	0.577	10.443	0.000	0.500	Supported
H_3	CI $\rightarrow$ BCE	0.458	7.762	0.000	0.266	Supported
H_4	CCE $\rightarrow$ CL	0.111	2.273	0.023	0.026	Supported
H_5	ECE $\rightarrow$ CL	0.622	9.414	0.000	0.686	Supported
H_6	BCE $\rightarrow$ CL	0.112	2.308	0.021	0.029	Supported
H_7	CI $\rightarrow$ CL	0.132	2.633	0.008	0.039	Supported

4.3 Mediation analysis

The mediation analysis focuses on three hypotheses, H_8 to H_{10} , which propose that different dimensions of CE (cognitive, emotional, and behavioural) mediate the relationship between customer involvement and customer loyalty. To test these proposed mediation effects, a bootstrapping procedure was employed. This procedure involves two key steps.

In the first step, the direct effects were examined using bootstrapping without considering the mediator variable. The objective of this stage is to determine the fundamental correlation between customer involvement and loyalty. The findings indicated that customer involvement exerts a substantial and favourable impact on customer loyalty, with a coefficient (β) of 0.132, a t-value of 2.633, and a p-value of 0.008.

In the second step, the mediator variables were included to assess both the direct and indirect effects on the dependent variable. This analysis helps determine the extent to which cognitive, emotional, and behavioural dimensions of CE mediate the relationship between customer involvement and loyalty. We have found that emotional CE serves as the strongest mediator, followed by cognitive CE and then behavioural CE. The results, detailed in Table 7, indicate that these dimensions of CE significantly mediate the relationship, thus supporting Hypotheses H₈, H₉, and H₁₀.

Table 7 Mediation analysis

<i>Hypothesis</i>	<i>With mediation effects</i>	<i>(β)</i>	<i>T Values</i>	<i>P Values</i>	<i>Decision</i>
H ₈	CI → CCE	0.504	7.626	0.000	Supported
	CCE → CL	0.111	2.273	0.023	
	CI → CCE → CL	0.056	2.137	0.033	
H ₉	CI → ECE	0.577	10.443	0.000	Supported
	ECE → CL	0.622	9.414	0.000	
	CI → ECE → CL	0.359	6.862	0.000	
H ₁₀	CI → BCE	0.458	7.762	0.000	Supported
	BCE → CL	0.112	2.308	0.021	
	CI → BCE → CL	0.051	2.255	0.024	

5 Discussion

Our study initially examined the impact of customer involvement on the cognitive, emotional, and behavioural aspects of CE. Subsequently, we investigated the influence of these aspects on customer loyalty. Secondly, we investigated the mediatory role of CE dimensions in the association between customer involvement and loyalty. The results confirm all the proposed hypotheses from H₁ to H₁₀ and also provide a comprehensive understanding of these relationships.

According to the findings, as customer involvement increases, cognitive CE also increases (H₁). A brand's increased involvement encourages customers to think about and follow it more frequently. Next, H₂ asserts that customer involvement significantly contributes to the increase in emotional CE. This suggests that higher customer involvement leads to the customer developing feelings towards the brand and establishing a stronger emotional connection. Moreover, a more involved customer behaves more positively (H₃). For example, a customer with a high level of involvement is more likely to purchase the same brand more frequently or recommend it to others. This result is consistent with the results of hypotheses Harrigan et al. (2018) and Naumann et al. (2020). All three hypotheses, H₁, H₂, and H₃, are confirmed. However, contrasting

evidence from Vivek et al. (2012) suggests that customer involvement is the outcome of CE.

Further analysis shows that all three dimensions of customer engagement have a positive effect on customer loyalty. The results indicate that when customer cognitive engagement increases (H_4), customer loyalty increases positively. This demonstrates that when customers are intellectually engaged, they are more likely to remain loyal. Next, increased emotional engagement enhances customer loyalty (H_5). This finding underscores the importance of emotional bonds in fostering loyalty. Higher behavioural customer engagement strengthens customer loyalty (H_6). This highlights that engaged behaviours are strong predictors of customer loyalty. These findings align with previous studies conducted by Gummerus et al. (2012), Kosiba et al. (2018), Parihar and Dawra (2020), Vinerean and Opreana (2021) and Kaur et al. (2023). As such, H_4 , H_5 , and H_6 are proven.

The direct effect of customer involvement on loyalty (H_7) is found to be significant, establishing that increased customer involvement directly enhances customer loyalty, as indicated by Iwasaki and Havitz (2004), Sparks (2007), San Martin et al. (2013), Gursoy et al. (2014), Gyulavári and Dörnyei (2014), Khan and Rizwan (2014), Parihar et al. (2018), and Vema et al. (2024). However, this perspective contrasts with earlier studies by Coulter et al. (2003) and Warrington and Shim (2000), which found a weak link between involvement and loyalty, suggesting that simply being involved with a brand or product does not necessarily lead to loyalty. Additionally, Prayag and Ryan (2012) also did not find a significant relationship between involvement and loyalty in their study.

Additionally, the mediation analysis confirms the hypotheses that cognitive, emotional, and behavioural engagement each serves as mediators in the relationship between customer involvement and customer loyalty (as outlined in Hypotheses H_8 , H_9 , and H_{10}). These findings align with the research conducted by Parihar et al. (2018). This study provides a novel contribution by identifying which of these engagement types acts as the most influential mediator. Our results reveal that emotional customer engagement is the most significant mediator among the three types. This indicates that emotional customer engagement has the strongest influence on how customer involvement affects loyalty. In comparison, cognitive customer engagement is the next most significant mediator, followed by behavioural customer engagement. These findings imply that, in addition to having a direct effect on loyalty, customer involvement also indirectly affects it through the mediating function of customer engagement dimensions. This indicates that customer engagement acts as a crucial mechanism through which involvement translates into loyalty.

Theoretically, this empirical study presents a novel model of customer engagement by integrating customer involvement and loyalty into a cohesive framework. It provides a detailed exploration of how cognitive, emotional, and behavioural dimensions of engagement mediate the relationship between customer involvement and loyalty, specifically within the smartphone industry. By applying SET, the study shows that customers who are deeply involved with a brand are more engaged in multiple ways. Among these, emotional customer engagement is essential for turning that customer involvement into customer loyalty, meaning emotional connections with the brand are key to retaining customers over time. So, this finding reveals that emotional connections are more crucial than cognitive or behavioural engagement in converting customer involvement into loyalty. The study's focus on the smartphone industry, which is less explored compared to other sectors, offers a unique perspective and refines theoretical

approaches by identifying emotional engagement as the most significant mediator between customer involvement and customer loyalty. This novel insight contributes to a deeper understanding of customer behaviour and retention.

6 Managerial implications

Based on the findings of this study, smartphone producers and marketers can carry out a few pragmatic strategies to upgrade customer engagement and loyalty. To begin with, they ought to underline the emotional aspect of engagement, distinguished as the most powerful factor encouraging loyalty. Emotional engagement fosters a stronger, more meaningful connection between a customer and a brand, resulting in increased brand loyalty over time. Furthermore, brands ought to foster systems that address emotional, cognitive and behavioural parts of engagement, with an exceptional prominence on emotions. Organisations ought to improve cognitive engagement by consistently developing and presenting new elements that mentally inspire the customer and keep them connected. Using information analysis to send personalised messages, offers, and proposals based on the preferences of individual customers can also strengthen emotional bonds. Events, contests, and campaigns that encourage customers to actively participate and promote the brand are also essential for increasing behavioural engagement. Confirming that all customer touchpoints are intended to upgrade these aspects, along with monitoring and analysing engagement metrics to understand customer interactions and preferences, will help refine strategies and improve loyalty. In conclusion, further developing customer involvement by effectively looking for criticism and including customers in the product improvement process can upgrade their feeling of responsibility and obligation to the brand. By executing these useful applications, smartphone producers and marketers can really use customer involvement to upgrade emotional, cognitive and behavioural engagement, eventually prompting expanded customer loyalty.

7 Limitations and future research directions

The study makes a significant contribution to understanding customer behaviour in depth and their long-term attachment to the brand, but it has several limitations. First, the study was conducted in a particular region, Rajasthan, India, which may limit the generalisability of the results to other geographic regions or other cultural contexts. Future research may increase generalisability by including multiple geographic regions or cultural contexts. Second, this study was conducted only in the context of smartphones, which may limit the results applicability to other contexts. Future research could explore how customer engagement may vary across different contexts. Furthermore, this study is cross-sectional in design, which restricts the ability to draw causal conclusions between relationships. Future longitudinal studies could be conducted to better understand these causal relationships.

Further research could explore new mediators, such as technological innovations, or digital marketing strategies like social media campaigns or targeted ads. When customers exhibit strong involvement, these strategies enhance awareness and could provide more profound insights into the relationship between customer engagement and loyalty.

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