



Brand Experience on Brand Attachment: The Role of Interpersonal Interaction, Feedback, and Advocacy

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Abstract

Value co-creation profoundly affects brand experience, human interaction rules, and customer behavior performance and is a recurring theme in research in the field of virtual brand communities. Studies have determined an influence model for value co-creation, but there is a dearth of research on the impacts of value co-creation activities on brand attachment. This study built a mediation theoretical research framework on value co-creation theory, brand experience, and brand attachment. The purpose of this study is to explore the significance of value co-creation activities on brand experience. Furthermore, this study intends to measure the impact of brand experience on brand attachment. Additionally, this study intends to investigate the mediation role of brand experience in the relationship between value co-creation and brand attachment. This study analyzed 512 data collected by structural equation modeling using registered users of the OPPO community as participants. The results of this empirical test show that the three dimensions of value co-creation (interpersonal interaction, feedback, and advocacy) have a positive effect on brand experience and that brand experience has a positive and significant impact on brand attachment and mediates the relationship between value co-creation and brand attachment. The findings of significance for management are the identification of factors that enhance value co-creation in virtual brand communities.

Keywords:

Interpersonal Interaction;
Feedback;
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1- Introduction

Rapid developments in information technology mean that companies are establishing their own virtual brand communities in order to create a long-term advantage in the market [1]. Virtual brand communities mitigate the separation of traditional communities of companies in terms of time and space and strengthen the brand relationship between companies and customers while providing a differentiated path for building corporate brands and enhancing brand attachment [2]. Virtual brand communities deliver brand value and provide a convenient channel for value co-creation between companies and their customers. In virtual brand communities, customers interact with companies that design and manage new products and give advice [3]. Studies show that customers' role in value co-creation in virtual brand communities has changed. Previously, customers were classified as consumers of value, but they have become value creators [4-7]. In the process of value creation, the company proposes a value proposition and establishes a

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common goal with the customer to achieve value, and the company and the customer communicate with each other and integrate their resources to create value together [5, 6, 8]. Value co-creation allows companies to meet customers' needs better and enhance their market position. Customer participation in value co-creation helps strengthen brand attachment for the virtual brand community, producing good customer-enterprise relationships [9]. Therefore, value co-creation in virtual brand communities and its effect on brand attachment are vibrant areas of research. The existing literature on brand experience on brand attachment has been studied from the following aspects.

Virtual brand communities allow businesses to develop and become innovative interactive communication platforms. In virtual communities, community members communicate with others, showcase their knowledge and skills, and share information and resources across space and time [10]. Using information technology, virtual brand communities are now the most promising business marketing model, offering customers the opportunity to interact with each other and the company and allowing companies to customize their products and services to meet customers' needs for entertainment, communication, and consultation [11]. Virtual brand communities significantly impact brand value creation by transforming branding from a company-led process to a collective interaction between company stakeholders [12]. Virtual brand communities are ecosystems for value co-creation, so the factors influencing value co-creation at the level of the entire environment of the system are of interest [13]. Virtual brand communities provide customers with information, and customers join different types of communities to get information about the brands in which they are interested. Companies link the development of communities with the Internet to form virtual brand communities, which are an online extension of brand management [4]. The digital era has changed the channels for interaction between brands because customers and customers discuss brand-related issues through virtual communities, providing companies with real and reliable information about their needs and allowing them to develop more distinctive products [14]. Therefore, to ensure the quality of products and services, virtual brand communities must also increase customers' motivation to participate in brand experiences and create long-term brand attachment through value co-creation (i.e., interpersonal interaction, feedback, and advocacy) [15]. Interaction between customers and companies allows companies to meet customers' needs, increase their brand attachment, and create new relationship values. When customers participate in value co-creation, the more time, energy, and money they invest, the greater their awareness and familiarity with the brand, and the more actively they engage in the brand experience and have a meaningful brand experience. Hence, this research aims to cover the research gap by measuring the impact of value co-creation on brand experience.

Virtual brand communities facilitate the timely release of corporate brand information, promote interactive communication between companies and customers, and provide a path to enhance brand attachment [16]. Virtual brand communities have become an essential medium for companies to maintain brand relationships with customers and for innovative marketing strategies. Virtual brand communities engage customers in brand experiences that create positive emotions and brand attachments. A positive brand experience establishes a stronger emotional connection to the brand. A good brand experience enhances customers' sense of identity and of belonging to the virtual brand community. Brand experience influences customers' choice of branded products, provides a path for virtual brand communities to capture more innovation value, relationship value, and marketing value, and allows customers to form long-term brand attachments [17, 18]. As a result, customers may be influenced by value co-creation and develop a brand attachment to the virtual brand community, which is one of the most important criteria for maintaining the relationship between customers and the virtual brand community and for innovative marketing strategies. Although these inferences can be drawn from both practical and theoretical perspectives, the deeper theoretical logic remains to be explored, and the influence path of customer brand attachment remains to be explored. Consequently, this research aims to explore the second research gap by measuring the impact of brand experience on brand attachment.

Virtual brand communities allow for value co-creation activities, engage customers in brand experiences, and enhance customer brand attachment. Customers are emotionally and behaviorally invested in the company, which increases the self-brand connection [19]. When a company publishes brand information, customers focus on and purchase brand products, which enhances brand attachment. Brand attachment is an emotional connection between a company and its customers and results from mutual communication between the company and its customers [20]. Previous studies show that companies and customers work together in virtual brand communities to design and manage new brands to achieve a competitive advantage in the marketplace by attracting customers through brand experiences and promoting brand innovation [3]. The standard of living of the general public continues to rise, so the brand awareness of customers is increasing. Customers focus on the quality of services, the functional value of products, and the additional value that branded products bring. Companies also need the support of loyal customers to advance in the market [21]. Customers feel that they are invited to participate in the production process to turn their ideas into reality in value co-creation activities, so they participate more actively in brand experience activities, evaluate the company's products, enhance customer loyalty, and experience greater willingness to buy [22]. From the company's perspective, customers provide innovative ideas for new products and provide more business opportunities for the company's development. Customers engage in value co-creation (i.e., interpersonal interaction, feedback, and advocacy) to gain experience value and form a positive brand experience [23]. And after using the brand's products for a long time, they gradually form brand attachments and bring business benefits to the company. Many brands are available to customers, and it is becoming

more difficult for companies to gain continuous customer loyalty, so stimulating the brand experience through value co-creation is crucial for companies to enhance brand attachment. In short, the above analysis suggests that brand experience with virtual brand communities can be found to be a mediating variable influencing the relationship between value co-creation and brand attachment from the perspective of value co-creation theory. In summary, it is important to examine the indirect effects of value co-creation by virtual brand communities on customer brand attachment through brand experience. Therefore, to explore the intermediate mechanisms through which value co-creation affects customer brand attachment, this paper will examine the third research gap by measuring how value co-creation affects customer brand attachment through the mediation impact of brand experience.

This research aims to cover the following research gaps. First, it explores the impact of value co-creation activities on the brand experience. Second, it examines the impact of brand experience on brand attachment. Third, it investigates the mediation impact of brand experience on the relationship between value co-creation and brand attachment. This research also offers some implications for practitioners and managers. The main implications of this paper are as follows. First, this paper adopts the suggestion of previous scholars [13, 24, 25] that brand experience is a key process through which value co-creation affects customer brand attachment, responding to their claim that "further work should be done to explore these potential mechanisms and to demonstrate their existence and role". Thus, this study identifies the intermediate mechanisms that influence brand attachment from the perspective of value co-creation theory. This study classifies customer value co-creation into three dimensions: interpersonal interaction, feedback, and advocacy, in accordance with the virtual brand community context, and confirms from this new research perspective that value co-creation enhances brand attachment through brand attachment. Thus, this study extends and validates the research literature on value co-creation theory in virtual brand communities.

2- Theoretical Foundation and Hypothesis Development

2-1- Theoretical Foundation

Value co-creation theory is the subject of numerous marketing and management studies. With the emergence of social media, virtual brand communities provide a convenient platform for value co-creation [26]. The core of value co-creation is the interaction between customers and companies and the creation of value [27]. Value co-creation has been studied in a narrow and broad sense. Vargo & Lusch [13] showed that, in addition to customers and companies, all other economic and social actors use resources and achieve value co-creation under institutional constraints and coordination. Using service-dominant logic, it can be inferred that value co-creation, in a narrow sense, is the co-creation of use value that occurs when customers consume a product or service and interact directly with the company [13].

Prahalad et al. [28] studied customer experience to show that value co-creation in a broad sense includes direct customer-company interaction and direct or indirect consumer participation and interaction in the co-creation of value during the production, research and development, design, and sales stages of a product or service. Value co-creation refers to co-creation at the time of value formation, when customers use their own resources to participate in the process of corporate value co-creation, and value co-creation for continuous value enhancement, when companies use existing resources to participate in the process of customer value co-creation. A comparative analysis shows that the broad sense of value co-creation better highlights the characteristics of value co-creation.

Auh [29], Nambisan & Baron [30], and Chan et al. [31] verified through empirical analysis that broad value co-creation is an object of study. Using the relationship between stakeholders, Merz et al. [32] defined value co-creation as the creation of brand value using the network relationships and interactions between all stakeholder ecosystems.

From a strategic management and marketing perspective, Prahalad et al. [28] showed that customers are a key factor for companies to improve their competitiveness, interact with them, and participate in each value chain link. This creates experiential value co-creation that puts the customer at the center. Value co-creation is a process in which producers and consumers collaborate to create market value [24]. Brand companies inspire customers to generate a positive and continuous state of emotional motivation. Companies are not the only value creators, and customers are no longer purely consumers of value; they are co-creators of value. Companies and customers participate in value co-creation by integrating resources [13].

This study defines value co-creation based on dominant logic as a process by which consumers and producers participate in value creation together through interaction. In terms of the actual behavior of virtual brand community members and previous studies [13, 24, 28], customer value co-creation in virtual brand communities is divided into three dimensions: interpersonal interaction, feedback, and advocacy. Interpersonal interaction refers to interpersonal communication and the exchange between individuals, customer service, or other members of the virtual brand community. Feedback means the act of an individual providing information, suggestions, or opinions to other members of a virtual brand community about product features, usage experiences, and services, and advocacy refers to the positive behavior of an individual who actively promotes or recommends a community/brand/product to other members or who helps other members of a virtual brand community.

2-2- Hypotheses Development

Value co-creation classifies customers as cooperative producers who perceive and obtain co-creation value by actively participating in the production of products and services using their own resources [33]. For customers in virtual brand communities, participation in value co-creation (i.e., interpersonal interaction, feedback, and advocacy) activities provides access to beneficial information and an enjoyable, interactive process in the community. Studies show that when customers and companies act together as value creators, value co-creation has different domain divisions [34]. When the customer leads the interpersonal interaction, feedback, and advocacy, a productive domain of value creation is created. In this context, the company plays a leading role in guiding the customer to actively participate in the development and production of the product and in formulating a product that achieves customer satisfaction. When companies lead value co-creation activities, the main emphasis is on value co-creation that caters to the needs of customers at the consumer end. The customer is the leading advocate for the company's development, and the company enhances the customer's feelings in terms of consumption or experience by optimizing services and providing the required resources.

Morrison et al. [35] showed that customers provide valuable and innovative ideas that allow manufacturers to design new products and that customers try to meet actual needs, providing innovative and constructive suggestions for companies at the development stage of new products. It has been shown that brand companies use the Internet to use customers as unpaid contributors, making full use of their wisdom, connections, power, and resources to work together with companies to decrease information asymmetry in competitive markets [36]. Companies must allow customers to participate in value co-creation to operate a virtual brand community in the long term. When customers interact significantly with companies, more innovative knowledge and information are collected by companies, so the quality of products increases.

Customer experience has a significant impact on brand building [37]. The more information that customers receive through indirect channels, the more they are attracted to value co-creation, which ultimately develops a positive brand experience [27, 38]. Previous studies show that value co-creation does not occur in only one part of the organization; it is the process of creating value together through cooperation between organizations that are upstream, midstream, and downstream [39]. Interactive communication between customers and between customers and companies must positively impact the co-creation of value due to the integration of corporate resources [9]. Zaborek & Mazur [40] showed that value co-creation by customers and companies increases business performance. The process of value co-creation is a process of co-creating experiences, which is important for enhancing brand value.

Interactive experiences are mainly generated by interpersonal interactions. When customers engage in interpersonal interaction, feedback, and advocacy, they are no longer independent individuals but individuals with specific connections to other customers, increasing the interactive experience's effect.

The value co-creation process includes interactions between customers and companies and between customers [9]. Studies show that company-initiated value co-creation allows customers to learn more [41]. Customers engage in the value co-creation that is initiated by the company, which involves a series of product development activities such as collecting design ideas, evaluation, promotion, and trial, which involve knowledgeable information, images, and videos of the company's brand that stimulate the sensory experience of consumers [42].

Customer-company interaction and joint participation in the design and development of new products enhance customer ownership, and customers' emotional connection to the brand increases, creating an emotional experience [15]. Value co-creation (i.e., interpersonal interaction, feedback, and advocacy) gives access to the brand experience, stimulates the imagination of customers, and satisfies their curiosity, stimulating a thoughtful experience [43]. In virtual brand communities, as customers engage in more activities and become more trusting of the brand, they become more active in sharing their experiences of the brand's products, which increases the brand experience [17]. This study proposes the following hypotheses:

H1a: Interpersonal interaction is positively associated with brand experience.

H1b: Feedback is positively associated with brand experience.

H1c: Advocacy is positively associated with brand experience.

Previous studies show that consumption levels increase significantly when economic incomes grow, and brand experiences are studied academically and by businesses [44, 45]. Experience marketing is increasingly a focus, but brand experience is a growing trend [46]. The study of brand experience is common in brand management research, and interactive communication between customers in the community can change customers' brand experience. Schultz et al. [47] showed that the formation of emotional attachment is linked to the customer's consumption experience, which is the experience that the customer receives when purchasing a branded product.

Companies create more brand value by making full use of Internet communication and interaction. Individuals develop a strong brand attachment to items if they satisfy the three basic human needs of autonomy, relatedness, and competence [48, 49]. In the different experiential environments that companies provide, customers choose a brand and develop new perceptions and feelings about it. When customers perceive that the brand image is consistent with their self-image, they have a good brand impression of the brand, establish a positive emotional connection with the brand, actively maintain the relationship with the brand, and then form a brand attachment [50].

In terms of the factors that shape brand experience from the customer's perspective, Japutra et al. [20] noted that brand experience can facilitate the establishment of long-term brand attachment for companies. Brand experience allows companies to conduct personalized marketing, and brand experience increases customers' familiarity and satisfaction with, and attachment to the brand. Brand attachment is a specific emotion that can be influenced by brand experience. A good brand experience requires a high level of customer participation in brand activities, and this high level of engagement promotes a positive evaluation of the brand's products and builds a strong emotional connection between the customer and the brand [51]. Companies that use virtual communities to enhance brand attachment must focus on consumers' emotional and perceptual experiences in the community and enhance all aspects of the customer experience [52].

From a relational perspective, brand symbols and brand experiences can enhance brand attachment [20]. From the perspective of predicting consumer behavior, brand attachment describes the relationship between a brand and a consumer. Positive experiences facilitate customers' emotional attachment to the brand, which enhances customers' self-brand associations, and customers feel a gradual increase in their fit with the brand [53]. In analyzing the factors that affect brand emotion, experience is the basis for customer-product contact and allows customers to form an emotional connection with the brand. By satisfying customers' curiosity and intrinsic needs through brand experiences, companies enhance customers' favorable feelings toward their brands, and customers develop a stronger brand attachment to brand products [54, 55].

When customers participate in brand experiences and establish and maintain brand relationships, they develop a sense of belonging and attachment to the brand [55]. Therefore, this study hypothesizes that customer participation in brand experiences affects the formation of brand attachment. The following hypothesis is proposed:

H2: Brand experience is positively associated with brand attachment.

Value co-creation (i.e., interpersonal interaction, feedback, and advocacy) has a positive effect on brand experience, and brand experience has a positive effect on brand attachment. Therefore, brand experience may have a mediating role. The marketing goal for virtual brand communities is to win customers' long-term brand attachment, and the prerequisite for winning long-term brand attachment is to create a good brand experience for customers. Brand experience is a key factor in the marketing and sales chain and allows companies to manage virtual brand communities and create more brand value for them.

Based on the process of value co-creation (i.e., interpersonal interaction, feedback, and advocacy), Mangold and Faulds [56] noted that customers are no longer passive recipients of information in a traditional environment: they take the initiative to create brands and participate in interactive communication in a service-driven logic, with no control over the time, content, or frequency of interaction between virtual brand communities and customers. The brand experience is formed by the interaction between customers and companies, including indirect and direct contact. When customers choose a brand or service, their feelings are the primary criteria for choosing the brand, creating a favorable impression of the quality and usefulness of the brand's products. When these positive brand experiences accumulate, they strengthen customers' brand attachment to the virtual brand community.

Casual interactions can have an impact on customers' willingness to actively co-create value, which is mediated by the brand experience [22]. In terms of interactive communication, customers participate in value co-creation and create customer value in the community [57]. Therefore, experiential value (e.g., brand experience) can mediate the relationship between customer interactions for value co-creation (i.e., interpersonal interaction, feedback, and advocacy).

Value co-creation (i.e., interpersonal interaction, feedback, and advocacy) can influence brand equity when self-consistency and brand experience act as mediators [5]. Customer participation in value co-creation contributes to customer brand loyalty. Customers participate in value co-creation (Interpersonal interaction, feedback, and advocacy) and use the brand experience as a mediator to influence the brand relationship [1].

Customers interact with others who share common interests by engaging in interpersonal interaction, feedback, and advocacy. The group evolves from a fragmented community of individuals into a united whole, enhancing the brand experience [19]. Good brand experiences gradually increase customers' attachment to branded products. As customers become more engaged, they are more willing to defend the brand, more likely to reject other brands, and become more attached to the brand [5]. The following hypotheses are proposed:

H3a: Brand experience mediates the relationship between interpersonal interaction and brand attachment.

H3b: Brand experience mediates the relationship between feedback and brand attachment.

H3c: Brand experience mediates the relationship between advocacy and brand experience.

Figure 1, shows the flowchart of the research methodology through which the objectives of this study were achieved.

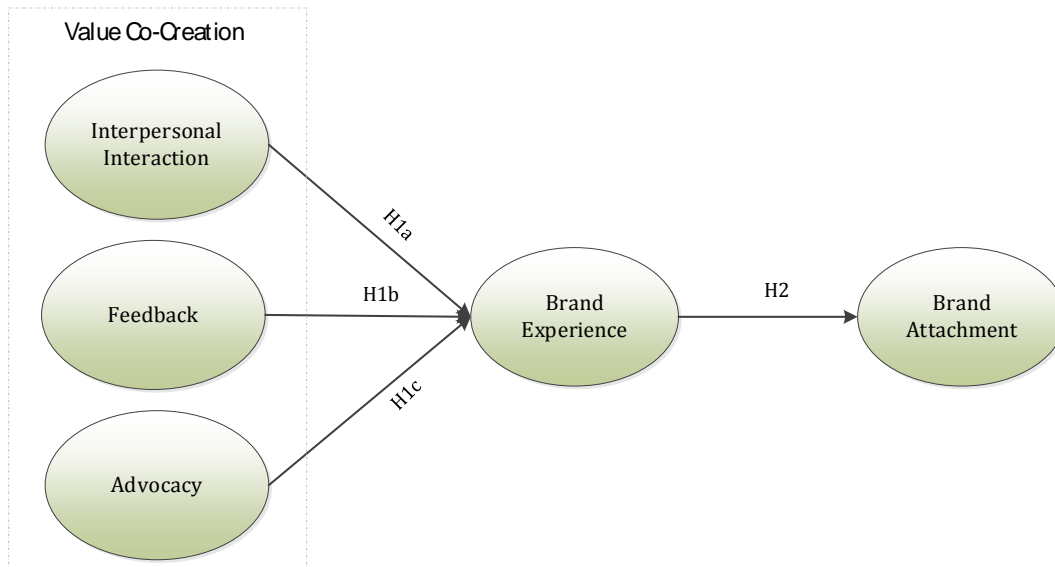


Figure 1. Theoretical Framework of the Research

3- Research Methodology

3-1- Procedure

This study uses OPPO community users as the target for the questionnaire. The OPPO community is a representative virtual brand community where official information about OPPO is shared and where members participate in a variety of interesting and fun activities, experience convenient shopping and good service, and discover a quality lifestyle. In the OPPO community, interesting and fun activities are provided for customers, and online shopping and a variety of fashionable brand merchandise is available: booking, queries, purchases, and the receipt of goods are incorporated, and there is professionally staffed customer service which addresses customer problems without the need to leave home. The selection of OPPO community users as the survey target enhances the representativeness of the questionnaire.

3-2- Measures

Interpersonal interaction, feedback, and advocacy drew on scales validated by Yi & Gong [33], Baldus et al. [58], and Dessart et al. [59], each variable with three items. Brand experience used four items from Carlson & Zmud [60] and Lee & Kang [61]. Brand attachment using an adapted scale from Thach & Olsen [62] with five items. Importantly, the measurement variables were all measured using well-established scales with specific measurement items, as shown in Table 1. A Likert scale is used to indicate the degree of measurement items, with 1 indicating strong disagreement and 7 indicating strong agreement.

Table 1. Variables and measurement item

Variables	Items	Factor Loadings	Composite reliability (CR)	Average variance extracted (AVE)	Cronbach's Alpha
Interpersonal interaction	INI1	0.669	0.784	0.550	0.785
	INI2	0.728			
	INI3	0.819			
Feedback	FEE1	0.664	0.804	0.581	0.784
	FEE2	0.872			
	FEE3	0.737			
Advocacy	ADV1	0.720	0.778	0.778	0.777
	ADV2	0.809			
	ADV3	0.671			
Brand experience	BE1	0.604	0.876	0.644	0.824
	BE2	0.830			
	BE3	0.827			
	BE4	0.916			
Brand attachment	BA1	0.743	0.867	0.571	0.900
	BA2	0.917			
	BA3	0.676			
	BA4	0.788			
	BA5	0.621			
Model Fit					
$\chi^2= 150.820$; $df = 125$; $\chi^2/df= 1.207 < 3$; $GFI= 0.969 > 0.9$; $AGFI = 0.950 > 0.9$; $CFI= 0.994 > 0.9$; $NNFI= 0.993 > 0.9$; $RMSEA= 0.024 < 0.08$.					

3-3- Sample

This study uses questionnaires to collect data. In order to facilitate the timely completion of the questionnaire, social media Apps, such as WeChat, are used to release the questionnaire information and recruit the respondents. The selection criteria for the questionnaire respondents are that they must be registered users of the OPPO community and have been using it for at least one year because it is necessary to ensure that the subjects understand the survey content and complete it correctly. Five hundred forty-five questionnaires were distributed, and 512 valid questionnaires were obtained after invalid questionnaires were screened. This represents a valid return rate of 93.94%. The results of the analysis through descriptive statistics were as follows. 51.4% male vs. 48.6 female, almost equal gender ratio, of which 332 were married participants and 180 were unmarried participants. 71 participants (13.9%) had been using it for less than 1 year, 217 participants (42.4%) had been using it for 1 to 2 years, and 224 participants (43.8%) had been using it for over 3 years. This indicates that the participants' eligibility was sufficiently reliable. Consumption Below 2000RMB had the least number of participants (7.8%), while 6000RMB or more had the most respondents (280 or 54.7%); in addition, 2000-3999RMB had 80 participants and 4000-5999RMB had 112 participants.

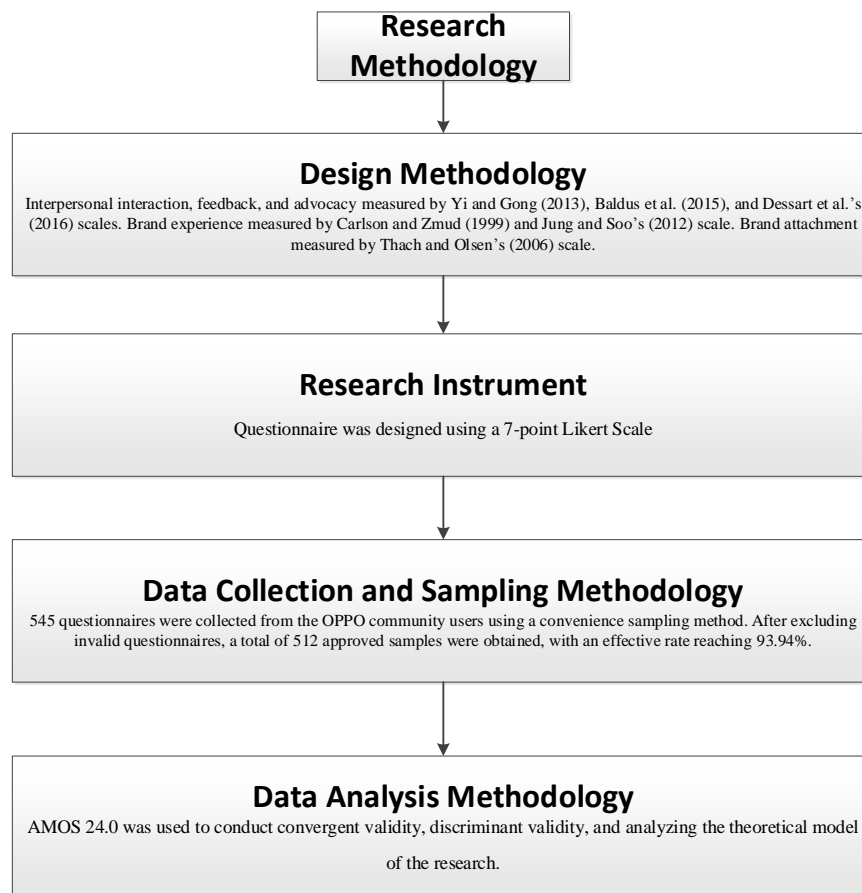


Figure 2. Research Methodology Flowchart

4- Data Analysis and Results

4-1- Analysis Procedure

This study uses Amos 24.0 to analyze the data for structural equation modeling. The measurement model is analyzed first, and then the structural model. After verifying the reliability of each variable, we measured CR, AVE, and Cronbach's alpha. After verifying the reliability, we analyzed the discriminant validity of the theoretical model based on the 95% confidence interval for correlations to verify that each variable was independent and did not cross over. After this, the most important thing was to test the regression coefficients to see if the hypothesis was valid by verifying that the p-value was less than 0.05. Finally, we test for mediating effects depending on the 95% confidence interval for Bias-corrected.

4-2- Convergent Validity

Previous scholars pointed out that factor loadings greater than 0.50 and Cronbach's Alpha greater than 0.70 indicate that the variables have high reliability and validity. CR greater than 0.60 and AVE greater than 0.50 further indicate that

the measurement model has better internal consistency. In this study, factor loadings greater than 0.557 and less than 0.931, Cronbach's alpha greater than 0.769 and less than 0.887, CR greater than 0.778 and less than 0.892, and AVE greater than 0.521 and less than 0.67. It is clear that the results of the CFA analysis confirm the high reliability of the measurement scales used and the high convergent validity of the measurement model in this research.

4-3-Discriminant Validity

Firstly, the AVE method was used to measure the discriminant validity, and if the square root of the AVE of each variable is greater than the correlation between the variables, then the measurement model has good discriminant validity and is suitable for further analysis of the structural model [63]. In this study, the square root of the correlation between variables is less than the square root of AVE, which indicates good discriminant validity and is suitable for analyzing the structural model (as shown in Table 2).

Table 2. AVE for examining discriminant validity

Variables	Mean	SD	1	2	3	4	5
1. Interpersonal interaction (INI)	5.137	1.077	0.741				
2. Feedback (FEE)	4.118	1.219	0.467	0.762			
3. Advocacy (ADV)	4.427	1.124	0.590	0.505	0.736		
4. Brand experience (BE)	5.207	1.031	0.576	0.526	0.592	0.802	
5. Brand attachment (BA)	5.599	0.940	0.420	0.267	0.338	0.488	0.756

Note. The diagonal value is the square root of AVE.

Second, Table 3 shows the means and standard deviations of the variables included in the theoretical model and the confidence interval for correlations among them. The 95% confidence interval for the correlation coefficient between two variables is calculated using the 95% confidence interval for the correlation coefficient, which indicates good discriminant validity if the 95% confidence interval does not include 1. Interpersonal interaction was positively correlated with brand attachment and did not contain 1, whereas positive feedback and advocacy were also positively correlated with brand attachment and did not contain 1. The brand experience was positively correlated with brand attachment and did not contain 1, whereas positive feedback and advocacy were also positively correlated with Interpersonal interaction and did not contain 1. Interpersonal interaction was positively correlated with brand experience and did not contain 1, whereas positive feedback and advocacy were also positively correlated with brand experience and did not contain 1. This shows that all variables in this study do not have covariance problems and have good discriminant validity.

Table 3. 95% confidence interval for correlations

Variables	1	2	3	4	5
1. Interpersonal interaction	1				
2. Feedback	(0.367-0.582)	1			
3. Advocacy	(0.471-0.068)	(0.390-0.631)	1		
4. Brand experience	(0.446-0.696)	(0.414-0.619)	(0.491-0.670)	1	
5. Brand attachment	(0.329-0.507)	(0.158-0.364)	(0.247-0.423)	(0.390-0.591)	1

4-4-Hypothesis Testing Results

In SEM analysis, if the sample size is more significant than 200, it will cause the chi-square to inflate, leading to decreased model fit [64]. This study used Bollen-Stine Bootstrap to correct SEM chi-square. The results of the structural model fit analysis are shown in Table 1 ($\chi^2= 150.820$, $df= 125$, $\chi^2/df=1.207$, GFI= 0.969, AGFI= 0.950, CFI= 0.994, NNFI= 0.993, RMSEA= 0.024). These data show that the structural model has a good fit.

Table 4 shows the results of a path model testing hypothesized effects (H1a, H1b, H1c, and H2). The first hypothesis (H1a) discussed the relationship between interpersonal interaction and brand experience. Positive interpersonal interaction was indeed found to be significantly associated with brand experience ($\beta = 0.270$, $p < 0.001$), and H1a was thus supported. The second hypothesis discussed the positive effect of feedback (H2a) on brand experience. Path model coefficients analyses also showed a significant effect for feedback to be positively correlated with brand experience ($\beta = 0.163$, $p < 0.01$); H1 b was thus supported. H1c discussed the relationship between advocacy interaction and brand experience. Positive advocacy was indeed found to be significantly associated with brand experience ($\beta = 0.193$, $p < 0.001$); thus, H1c was supported. Therefore, interpersonal interaction, feedback, and advocacy significantly and

positively affect the brand experience. The fourth hypothesis discussed the relationship between brand experience and brand attachment (H2). Path model coefficients analyses also showed a significant effect for brand experience to be positively related to brand attachment ($\beta = 0.740, p < 0.001$); H2 was thus supported. Therefore, brand experience significantly and positively affects brand attachment (see Figure 3).

Table 4. Hypotheses testing results

Hypotheses and paths	Regression weight	Standard error	z-value	Path Coefficient (β)	p
H1a: Interpersonal interaction → Brand attachment	0.270	0.057	4.715	0.307	***
H1b: Feedback → Brand attachment	0.163	0.039	4.488	0.234	***
H1c: Advocacy → Brand attachment	0.193	0.043	4.488	0.299	***
H2: Brand experience → Brand attachment	0.740	0.080	9.270	0.503	***

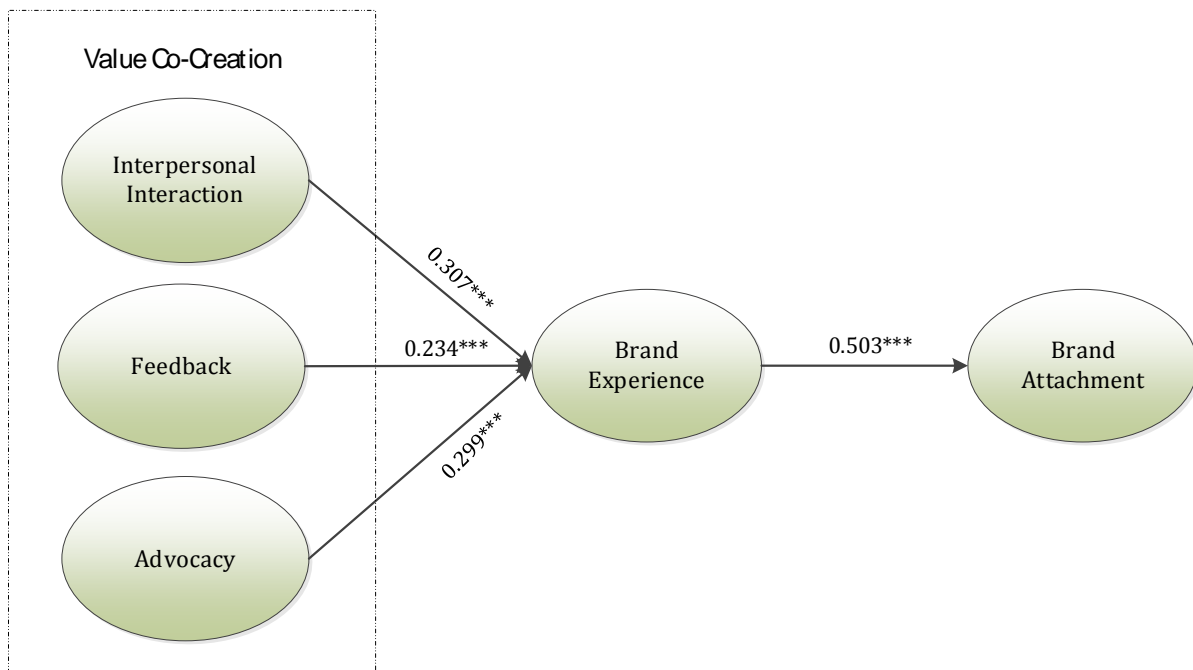


Figure 3. Path coefficient

Hypotheses 3a, 3b, and 3c discussed the indirect effect of brand experience on the relationship between interpersonal interaction and brand attachment (H3a), between feedback and brand attachment (H3b), and between advocacy and brand experience (H3c). See Table 5 for an analysis of the mediating role. Path model analyses showed a significant effect for the mediating effect of H3a: the indirect effect ($Z > 1.96, p < 0.05$ and the 95% confidence interval from 0.083 to 0.410), H3a is therefore affirmed. Path model analyses also showed a significant effect for the indirect effect of H3b: 95% confidence interval from 0.050 to 0.198), so H3b is also refuted. Path model analyses also showed a significant effect for the indirect effect of H3c: the indirect effect ($Z > 1.96, p < 0.05$, the 95% confidence interval from 0.056 to 0.236). Thus this study accepts H3c.

Table 5. The analysis of indirect effects

Effect	Point Estimate	Product of coefficients			Bootstrap 1000 times	
		S.E.	Z-Value	P-value	Lower bound	Upper bound
INI→BE→BA	0.200	0.082	2.439	**	0.083	0.410
FEE→BE→BA	0.121	0.038	3.182	**	0.050	0.198
ADV→BE→BA	0.143	0.045	3.178	**	0.056	.236

Note. ** p-value < 0.01, Interpersonal interaction = INI, Feedback = FEE, Advocacy= ADV, Brand experience = BE, Brand attachment = BA.

5- Results and Discussion

5-1-Discussion

According to the present study's findings, value co-creation activities were found to have a significant relationship with brand experience. The findings of this study can be compared to an earlier study conducted by Oklevik et al. [65]. According to Oklevik et al.'s [65] research, some earlier research has targeted the dialogue, access, risk assessment, and transparency model (DART) related to the different elements of co-creation. However, there was an inadequate knowledge and research gap regarding the factors or variables associated with it. Hence, Oklevik et al.'s [65] research aimed to assess the mechanisms impacted by value co-creation activities (DART). Consequently, their study explored the impacts of DART on brand experience and, in turn, measured the impact of brand experience on brand satisfaction. Furthermore, their study examined the mediation impact of brand experience on the relationship between DART and brand satisfaction. Oklevik et al.'s [65] study employed a customer engagement viewpoint to assess the relationship between DART and brand experience. Their study used a survey methodology to collect 594 samples from different industries. According to the results of Oklevik et al.'s [65] study, DART was found to have a significant relationship with brand experience. Furthermore, the brand experience was found to partially mediate the relationship between DART and brand satisfaction.

Furthermore, according to the findings of the present research, brand experience was found to significantly impact brand attachment. The result of the present study is somewhat similar to an earlier study conducted by Huaman-Ramirez & Merunka [66]. Huaman-Ramirez & Merunka's [66] research aimed to investigate the association between brand experience and brand attachment. Furthermore, their study also examined brand trust as the mediator, while age and income as moderators for the relationship between brand experience and brand attachment. Huaman-Ramirez & Merunka [66] study used a survey methodology to collect data from 334 samples who had brand experiences while using the brands. According to the findings of Huaman-Ramirez & Merunka's [66] research, brand experience significantly impacted brand attachment. This result was discovered to be significant for utilitarian and hedonistic brands. In addition, a partial mediating role of brand trust was discovered for the relationship between brand experience and brand attachment for utilitarian brands, while a weak mediating significance was discovered for clients having high incomes. Huaman-Ramirez & Merunka [66] study suggested that experiential marketing can be effective as a marketing strategy to enhance consumers' brand attachment. Brand attachment can be improved by providing optimistic brand experiences or by improving brand trust, especially for youth from low to medium socio-economic levels.

Finally, the present study used the brand experience as a mediating variable and discovered it to be a significant mediator in the relationship between value co-creation and brand attachment. The result of this study can be compared to an earlier study by Khan & Fatma [67]. Khan & Fatma's [67] research framework was built on the trending concepts of corporate social responsibility (CSR), brand loyalty, brand trust, and brand experience. Khan & Fatma's [67] research aimed to measure the impact of CSR on brand experience, brand loyalty, and brand trust. Furthermore, this study examined the impacts of brand experience on brand trust and brand loyalty. Finally, their research investigated the mediating roles of brand experience and trust in the relationship between CSR and brand loyalty. Khan & Fatma's [67] research was conducted in shopping malls in India, and data from 354 fast-moving consumer goods (FMCG) customers was collected using a survey methodology. According to the findings of the Khan & Fatma [67] study, CSR was discovered to have an insignificant association with brand loyalty. In addition, CSR significantly impacts brand experience and brand trust. Whereas brand experience was found to significantly impact brand trust and loyalty. Additionally, brand trust significantly impacted brand loyalty. Finally, both brand experience and brand trust significantly mediated the association between CSR and brand loyalty.

5-2-Theoretical Implications

This study provides the following theoretical contributions. This study determines customer value co-creation's theoretical connotations and extensions in virtual brand communities [25]. Based on the characteristics of the virtual brand community and the results of previous studies, this study classifies customer value co-creation into three dimensions: interpersonal interaction, feedback, and advocacy. The influence of these dimensions on brand attachment is determined using structural equation modeling [13, 24]. This develops the research results for value co-creation theory and consumer behavior in a virtual environment and extends the research on virtual brand communities to a research field where customers are the main subject for value co-creation [24, 30, 31, 68]. This new research direction allows virtual brand communities to enhance brand attachment from a value co-creation perspective.

This study determines the mediating role of brand experience in customer value co-creation and influencing brand attachment. Previous studies determined the intermediate mechanisms through which customer value co-creation affects brand attachment from a qualitative perspective [34]. There is a lack of empirical research on how customer value co-creation affects brand attachment through the mechanism of brand experience. The results of this study are supported by empirical tests, which affect the accuracy of the results [33, 68]. This contributes to the empirical research on value co-creation and opens new paths for enhancing brand attachment in the virtual brand community environment.

5-3- Managerial Implications

This study provides the following managerial implications. Firms must create a good virtual brand community atmosphere. Virtual brand communities extend traditional communities to an online setting and promote more active participation by customers in value co-creation [69]. When operating a brand, companies must make full use of the opportunities that are provided by virtual brand communities to spread brand knowledge and create a good community atmosphere [16]. When customers feel a sense of self-identity and social respect in a virtual brand community, they are more willing to choose the brand's products, so they develop an attachment to the brand.

Companies must create a pleasant experience for customers, provide them with various experiential activities, and give them material and spiritual rewards [15], such as exclusive gifts, limited purchases, higher status, or greater power in the community, to encourage customers to participate in interactions and meet their needs. Companies must improve the quality of services and products in virtual brand communities [45]. In the OPPO community, customers learn about the various functions of OPPO products and communicate directly with the developers to enhance their sense of ownership. Customers can also create a brand and provide suggestions for a new brand.

Also, companies must encourage customer participation in value co-creation and optimize customer-centric virtual brand communities. Customers integrate information, exchange information, and create new brand knowledge in virtual brand communities, accumulating in the communities and providing each community member with access to more information resources. Customers engage in value co-creation [7], which promotes a stronger dependence on the company and brand products. Customers come to rely on the brand and continue to buy and promote it, so the company produces more products that satisfy customers [25, 58]. Companies must maintain relationships with customers and mobilize their participation so that more customers can participate in value co-creation activities.

When managing virtual brand communities, companies must monitor interaction patterns and behaviors and encourage members to participate in value co-creation. Customer participation in value co-creation is important for improving the quality of products and services and promoting brand attachment for customers [18]. The cognition, behavior, and emotion that are generated by customer participation in value co-creation are not measurable, but customer participation in value co-creation gives a competitive advantage that is sustainable for the future development of the company.

Companies must also enhance the experience of customers and strengthen their brand attachment. In a virtual brand community, customers are concerned with product quality, functional value, and corporate brands' positive brand experiences. A unique brand experience profoundly impacts customers, so companies gain a competitive advantage in the market [70]. The virtual brand community must optimize the brand experience for customers by providing the latest product and promotional information in a timely manner and attaching importance to customer participation and interaction [46, 59, 69].

When designing brand experience activities, companies must consider the sensory and emotional elements of brand products and enrich the process by which customers think about the experience. Companies must design innovative brand products that evoke associations for customers and stimulate their interest in creative thinking [39, 43]. Companies must also consciously engage customers in experiential activities based on information about the lifestyles and philosophies of customer groups. By providing a positive brand experience, attachment to the brand is promoted [19]. A good brand experience gives customers a sense of belonging and dependence on the brand, which promotes long-term brand attachment.

5-4- Limitations and Future Work

Future research might optimize and build a complete research model to analyze the factors and mechanisms that influence customers' participation in value co-creation and expand the study to more industries. Companies must consider factors such as the type of customers and their level of brand knowledge to provide more satisfying products and services.

A combination of multiple research methods will increase the general applicability of the research findings. Future work might expand the coverage of the sample and select a more representative and scientific sampling method to produce more accurate results. In data collection, data mining and text mining could be used to better determine the mechanism for the effect of value co-creation on brand attachment.

Future work could also use multiple theories and perspectives to determine the antecedent, moderating, and mediating variables for brand attachment. This study determines the indirect influence role of value co-creation on brand attachment. Future work could incorporate other mediating variables in the research model to determine the impact of value co-creation on brand attachment under the influence of different mediators to allow more practical guidance for the development of enterprises.

6- Conclusion

H1a, H1b, and H1c are supported. Empirical analysis shows that value co-creation (i.e., interpersonal interaction, feedback, and advocacy) positively impacts the brand experience. The results of this data analysis are consistent with earlier studies [15, 43]. Customers participate in community-based interactive communication activities for value co-creation (i.e., interpersonal interaction, feedback, and advocacy) to gain insights into the company's brand image and brand knowledge [5]. Customers engage in value co-creation, actively interact with other community members, enrich their own experience of using the platform, experience fulfillment, and form a long-term brand experience. By engaging in value co-creation, customers use their invested knowledge and resources to gain personalized experience value, which positively impacts them.

H2 is supported. The results of the data analysis show that brand experience positively influences brand attachment. The results of this data analysis are consistent with earlier studies [23, 52, 56, 70, 71]. Brand experience stimulates customers' visual, auditory, and olfactory senses, leaving a deep impression on them and providing them with a unique experience, forming brand attachment [72]. Customers interact with the virtual brand community to generate brand experiences that stimulate positive emotions and allow customers to spontaneously develop empathy with the corporate brand [56]. This emotional resonance allows customers to increase their positive feelings towards the brand, which significantly impacts the customer's self-brand connection.

H3a, H3b, and H3c are supported. The results show that value co-creation (i.e., interpersonal interaction, feedback, and advocacy) indirectly affects brand attachment through brand experience. The results of this data analysis are consistent with the study by Zhao et al. [57]. As a virtual communication space, virtual brand communities provide more opportunities for customers to communicate with companies online and are important platforms for customers to participate in value co-creation activities. The market environment is changing, and the role of customers has also changed significantly [1]. Customers have wider access to brand knowledge and information, from understanding to being familiar with brand products [71]. Customers interact with companies, create value together, and participate in brand experiences to form emotional attachments to the brand.

7- Declarations

7-1- Author Contributions

Conceptualization, T.H. and A.K.; methodology, T.H., U.R., and A.K.; formal analysis, T.H. and A.K.; writing—original draft preparation, T.H., U.R., A.K., TH.W., RH.C., CH.H. and SC.C.; writing—review and editing, T.H., U.R., A.K., TH.W., RH.C., CH.H. and SC.C. All authors have read and agreed to the published version of the manuscript.

7-2- Data Availability Statement

The data presented in this study are available on request from the corresponding author.

7-3- Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

7-4- Institutional Review Board Statement

Not applicable.

7-5- Informed Consent Statement

Not applicable.

7-6- Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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