

A Study on Consumer Engagement in Online Brand Communities

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Abstract: The research analyzes consumer engagement behaviour in online brand communities by investigating factors which affect participation and interactions. A survey involving 138 participants from varied demographics helped researchers determine major factors that drive engagement actions. Principal Component Analysis revealed seven distinct components, which explained over 90% of the study's variance. Brand trust and reliability, together with value and utility, function as primary contributors alongside user experience, brand satisfaction and loyalty, content quality, community connectivity, and active participation in explaining over 90% of brand community interaction. The results show that brand trust and community structure density, together with community activity volumes, create direct paths to consumer engagement, although perceived value, information quality, and community experience affect engagement indirectly. The presented study demonstrates that online brand communities exist on multiple dimensions while strategic management focusing on architecture and trust builds direct pathways to boost consumer engagement. This work expands digital consumer research by presenting an all-encompassing framework that allows the optimization of brand-sponsored online community engagement among different demographic groups.

Keywords: Online Brand Communities; Consumer Engagement; Brand Trust; Community Structure; Digital Consumer Behaviour; Brand Satisfaction and Loyalty.

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1. Introduction

In the digital era, the paradigm of consumer-brand relationships has undergone a profound transformation. Online brand communities (OBCs) have emerged as pivotal platforms where consumers and brands interact, co-create value, and form meaningful connections. These virtual spaces transcend geographical boundaries, enabling brands to foster deeper engagement with consumers while simultaneously allowing consumers to interact with like-minded individuals who share similar brand affinities. The dynamic nature of these communities has revolutionized traditional marketing approaches, shifting from one-

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way communication to interactive dialogues between brands and consumers. The concept of consumer engagement within these digital ecosystems has garnered significant attention from both marketing practitioners and academic researchers. Consumer engagement represents a multidimensional construct that encompasses cognitive, emotional, and behavioural dimensions of consumer interactions with brands and other community members. As businesses increasingly recognize the strategic importance of cultivating engaged consumer bases, understanding the antecedents, processes, and outcomes of consumer engagement in OBCs has become crucial for sustainable competitive advantage. The proliferation of social media platforms, brand-hosted forums, and consumer-initiated communities has created diverse manifestations of OBCs, each with unique characteristics that influence engagement patterns. From Facebook brand pages to specialized forums, these communities serve as touchpoints where consumers express opinions, seek information, share experiences, participate in brand-related activities, and develop psychological connections with the brand and fellow community members. The richness and complexity of these interactions present both opportunities and challenges for brands seeking to leverage OBCs for enhanced marketing outcomes.

Despite growing scholarly interest in this domain, several gaps persist in our understanding of consumer engagement in OBCs. While existing research has identified various factors that influence engagement, the interplay between these factors remains insufficiently explored. Moreover, the rapidly evolving digital landscape continues to reshape the contours of OBCs, necessitating ongoing examination of emerging engagement patterns and their implications for brand management strategies. This study aims to advance our understanding of consumer engagement in OBCs by investigating the complex interrelationships between key antecedents, manifestations, and consequences of engagement. By adopting an integrative approach that considers both psychological and behavioural dimensions of engagement, this research seeks to develop a comprehensive framework that captures the multifaceted nature of consumer engagement in digital brand environments [9].

The theoretical significance of this study lies in its contribution to the evolving conceptualization of consumer engagement, particularly in the context of online communities. By synthesizing insights from various streams of literature, including consumer behaviour, brand management, online communities, and digital marketing, this research offers a holistic perspective on how and why consumers engage with brands in virtual spaces. Additionally, this study extends existing engagement theories by examining how technological features, community characteristics, and individual differences interact to shape engagement experiences. From a practical standpoint, this research provides valuable insights for marketing managers seeking to design effective strategies for fostering consumer engagement in OBCs. Understanding the drivers and manifestations of engagement enables brands to create more compelling community experiences, foster deeper consumer-brand relationships, and ultimately leverage these communities as sources of innovation, brand advocacy, and competitive advantage.

The evolution of consumer engagement in the digital landscape reflects broader societal shifts in how individuals relate to brands and form communities. Traditional conceptions of consumer-brand relationships were predominantly transactional, focusing on purchase behaviour as the primary indicator of consumer connection to brands. However, the emergence of Web 2.0 technologies facilitated a fundamental reconceptualization of consumers as active participants in brand narratives rather than passive recipients of marketing messages. This participatory culture has transformed the nature of brand communities from company-controlled entities to collaborative spaces where meaning is co-created through ongoing interactions. Literature on consumer engagement has proliferated in recent years, offering diverse perspectives on its conceptualization and measurement. Some scholars define engagement primarily in terms of behavioural manifestations, such as participation in community activities, content creation, and information sharing. Others emphasize the psychological aspects, including cognitive attention, emotional connection, and identification with the brand and community. A growing consensus suggests that engagement represents a context-dependent, motivational state characterized by specific interactions between consumers and brand-related stimuli. In OBCs, these interactions extend beyond the consumer-brand dyad to include relationships with other community members, highlighting the social dimension of engagement.

Several theoretical frameworks have been employed to understand consumer engagement in OBCs. The uses and gratifications theory suggests that consumers actively seek out and engage with media that fulfil specific needs, including information acquisition, entertainment, social interaction, and identity expression. Social identity theory posits that individuals derive part of their self-concept from membership in social groups, including brand communities, which motivates engagement behaviours that reinforce group identification. Additionally, the stimulus-organism-response framework provides insights into how community characteristics stimuli influence psychological states organism that subsequently lead to engagement behaviours response. The antecedents of consumer engagement in OBCs span multiple levels of analysis. At the individual level, factors such as brand involvement, community identification, perceived benefits, and intrinsic motivations influence engagement propensity. Community-level factors include community size, interaction climate, governance structures, and content quality. Brand-related antecedents encompass brand characteristics, marketing activities, and relationship history. Technological factors, such as platform design, usability, and interactive features, also play critical roles in facilitating or hindering engagement.

The outcomes of consumer engagement in OBCs extend far beyond immediate marketing metrics to include substantial benefits for brands, consumers, and communities. For brands, engaged consumers often demonstrate enhanced loyalty, increased purchase intentions, greater willingness to pay premium prices, and stronger brand advocacy. These consumers frequently contribute to product innovation through feedback and ideas, thereby serving as valuable sources of market intelligence. For consumers, engagement in OBCs can fulfil various psychological needs, including belongingness, self-expression, and empowerment. At the community level, engagement contributes to community vitality, knowledge creation, and collective value generation. Despite these potential benefits, challenges persist in fostering sustainable engagement in OBCs. The voluntary nature of participation means that consumers can easily disengage if their expectations are not met. Privacy concerns, information overload, negative interactions, and perceived commercialization can all undermine engagement efforts. Furthermore, the heterogeneity of community members, with varying motivations and participation styles, necessitates nuanced approaches to engagement facilitation.

The methodological approaches to studying consumer engagement in OBCs have evolved from predominantly conceptual works to diverse empirical investigations. Survey-based studies have examined self-reported engagement and its relationships with various constructs. Ethnographic approaches have provided rich insights into the lived experiences of community members and the cultural dynamics of OBCs. More recently, big data analytics and social network analysis have enabled researchers to examine behavioural patterns and relationship structures at scale, offering complementary perspectives to traditional methods. The present study builds upon this rich foundation while addressing several limitations in existing research. First, it adopts a multidimensional conceptualization of engagement that integrates cognitive, emotional, and behavioural components, providing a more holistic understanding than approaches that focus exclusively on one dimension. Second, it examines engagement as a dynamic process rather than a static state, capturing how engagement evolves over time and across different community contexts. Third, it investigates the boundary conditions that moderate the relationships between antecedents and engagement, acknowledging that these relationships may vary across different consumer segments and community types.

The accelerating digitalization of consumer experiences, amplified by global events such as the COVID-19 pandemic, has further elevated the strategic importance of OBCs. As physical touchpoints became restricted, these virtual spaces assumed greater significance in maintaining brand-consumer connections and facilitating consumer-to-consumer interactions. Simultaneously, technological advancements in artificial intelligence, augmented reality, and social commerce functionalities are creating new possibilities for engagement within these communities. These developments underscore the timeliness and relevance of research that examines how consumer engagement manifests in evolving digital environments. By advancing our understanding of how consumers engage with brands in online communities, this study contributes to both the theoretical development of consumer engagement as a construct and the practical knowledge needed to design effective engagement strategies in increasingly digital marketplace environments. As brands continue to invest in building and nurturing online communities, insights from this research will provide valuable guidance for maximizing the mutual benefits that can arise from meaningful consumer engagement.

2. Literature Review

Encouraging consumers to take part in online brand communities is an important marketing tactic. Many researchers have focused on the things that lead consumers to take part in activities in these digital spaces. It has been found that how much intelligence someone believes they have is very important in predicting how much consumers will engage [17]. Customers tend to interact with companies that seem aware of their needs and intelligent. It was also shown that self-motivation has a strong effect on how engaged consumers are [25]. From the point of view of social and technological factors, both the digital ecosystem and the elements that make up the engagement ecosystem should be considered [19]. Social capital, increase in e-empowerment, and cooperative efforts of consumers can improve their level of involvement [20]. Among other subjects, scholars have considered the reasons for posting about brands on social media sites, relying on the Uses and Gratifications (U&G) theory. Some people interact with brands just for entertainment, while others are looking for more information or a way to express themselves [43].

Many ways companies connect with consumers play a significant role in their involvement with brands [18]. It is more than only making sales, it focuses on engagement, bonding feelings, and belonging [29]. Despite this, educating people about their healthcare options may lead to more people trying to switch insurers, which causes worries for the industry [22]. With social media brand communities, businesses have tools that enable them to establish and keep relationships with their consumers. It has been looked into by researchers how being worried about missing out and using smartphones influences consumers' engagement and loyalty to these platforms [23]. The involvement of customers can boost company performance by making consumers stick to a brand, improving the development of products, and encouraging their feedback and input [3]. At the same time, there are many different and complex factors that lead to consumer involvement [4].

Researchers have come up with different ideas about consumer engagement, increasing our knowledge about it [33]. Using digital methods, client engagement strategies in business are meant to develop meaningful relationships between consumers and brands at every contact point. What affects consumers' engagement online with a brand through different social networks was examined using an egocentric network approach. It has been discovered that consumer engagement relies on network size, network density, and network centrality [28]. Engaging with a brand's posts on social media by liking, commenting, and sharing may help develop a good relationship with the brand and lead people to identify with its community [11]. According to Paruthi et al. [24], these things are key reasons why consumers are active on online platforms. People who tend to use brand schemas have more frequent interactions with companies online. Given their solid brand beliefs, people with higher brand schemas tend to be more involved in online brand activities that include both creating and consuming content [26].

Researchers have examined what influences consumer involvement with live-streaming e-commerce, and these include the streamer's enthusiasm and readiness [34]. It has been proven that these factors drive consumers' attention to the live streaming platform [44]. The expertise of the consumer is now considered an important influence on participation in live marketing by researchers [45]. It has been seen that how skilled consumers are greatly influences the link between interactivity and engagement [31]. Even though people are aware of using social media for campaigns, there is still less research focusing on the effects of incivility online on brands' social media engagement [41]. There is research showing how someone's behaviour during crowded situations is affected by the level of stress in the Conservation of Resources (COR) theory [12]. A person's commitment to brands or related elements is affected by how much stress they experience and the resources they invest. Studies have shown that consumer engagement literature includes five groups: consumer engagement, online brand community engagement, consumer-brand engagement, consumer engagement behaviours, and media engagement [5].

The influence of both brand crises and people's ability to speak out and engage on social media on consumer brand engagement has received attention. During a crisis, engaging with consumers becomes more challenging because several people play a role in forming the value of a brand [7]. It has been discovered that COVID-19 has influenced consumer engagement with brands from different countries. Because the pandemic greatly changed the market, the effects it has had on brand engagement are worth exploring [40]. There is strong evidence that social media marketing encourages engagement among those who buy luxury products by moderating the relationship with marketer-generated content, called MGC [15]. Identifying who belongs to a sports club network and brand identification by consumers on sports club social pages have been singled out as the main factors influencing participation on such pages [37].

Visual communication and using social media sites are thought to be key factors in helping brands succeed and form relationships with buyers [14]. People have looked at the factors that either hinder or encourage consumer participation in making a hospital better [38]. A proposal has been made for a complete assessment framework that would support online gaming companies to keep players engaged and come back for more, relying on virtual and consumer engagement theories [8]. Studies from the last year show that people can shape brand building by taking part in social media marketing [32]. Social media use and brand involvement by consumers, along with their relevance for branding, are reflected by Schee et al., [30]. Good attitudes on the part of consumers can increase their willingness to participate in the fintech industry [16].

The authors explored how MGC user-generated content may become part of marketing strategies by using various content features and content generators. MGC seems less far away from consumers and encourages their involvement [42]. With the help of association rule analysis, a conceptual model was built to describe consumer use of social media, referring to the theory of consumer engagement and the style of a brand's posts [46]. Choosing different business models, considering how consumers care about the environment and their interest in sharing, brings more energy to the customers, which may spark motivation for understanding how sharing truly works [6]. According to Cheung et al. [7], joining both social media influencers (SMIs) and brands influences consumers' brand engagement, and two important actions, consumption and contribution, have an even greater positive impact.

Asante et al. [2] also looked at how organic marketing affects the involvement of consumers, stating that system support, community value, freedom of expression, rewards, and recognition help increase it [2]. It has been established that social media marketing influences consumer purchase intentions, and the consumer's level of engagement is a connecting factor [21]. In Ardiyanto & Kusumadewi's [1] proposed expansion of the framework, consumer involvement, consumer participation, self-expressive brand, brand usage intent, and self-brand connection have been added. The use of celebrities, engagement with social media, and levels of customer engagement have been examined to see how they affect people's purchasing decisions. It has been determined that the main reason for consumers to use immersive technology, such as the metaverse, is motivation, with a specific model explaining this motivational background now proposed [13]. It has been shown in recent research that engagement properly and having a diligent recruitment and selection process is especially important for getting good consumer engagement results [35].

Social media content such as positivity, the type of content, vividness, and interactivity have been linked to Chinese young people's participation and desire to buy luxury sportswear [39]. There have been studies on how different MGC qualities affect consumers' involvement in food marketing [36]. There has been research done to see how tourism products promoted through live streaming are affected by celebrity endorsement [27]. The level of consumer engagement appears to be important when considering the relationship between consumers and brands. Several studies have focused on what these consumers think, pointing out the difficulties of dealing with unclear and unwritten rules as well as the possible stress of being engaged in the health service [10].

3. Research Methods

This study adopted a descriptive research design to explore the impact of consumer engagement in online brand communities. The purpose of this design was to obtain accurate and systematic information about consumers who actively participate in such communities and to understand the nature and extent of their engagement.

3.1. Research Design

The descriptive research design was selected as it is suitable for studies that seek to describe the characteristics, behaviours, and patterns of a particular group. This study aimed to describe and analyze the behaviour of online consumers in digital brand communities. The research was quantitative, relying on survey-based responses to gather standardized information from a defined sample.

3.2. Population and Sampling

The target population for this study consisted of consumers who regularly shop online and are involved in online brand communities. A purposive sampling technique was employed to identify and select individuals who met the criteria for inclusion. Only participants aged 25 years and above who had previously purchased products online were considered for this study. The rationale for this age group was based on the assumption that individuals in this category are more likely to be experienced online shoppers and active participants in brand-related digital platforms. A total of 300 online questionnaires were initially distributed through digital channels. These were designed to capture responses from individuals with prior experience in online purchasing and participation in brand communities. Out of the 300 responses received, 252 questionnaires were found to be complete and usable after the first round of verification. Upon further scrutiny for consistency and response quality, 206 questionnaires were retained for the final analysis.

3.3. Data Collection Instrument

Data was collected using a structured online questionnaire, which consisted of both closed-ended and Likert-scale items. The questionnaire was designed to capture relevant variables associated with consumer engagement, including behavioural, emotional, and cognitive dimensions of participation in online brand communities. Respondents were required to answer questions related to their frequency of participation, motivation, satisfaction, and perceived value derived from their interactions in these communities. Before distribution, the questionnaire was pre-tested with a small group of respondents to ensure clarity, readability, and reliability. Minor modifications were made based on the feedback received during this phase. The final version of the instrument was administered using online survey tools, making it easier to reach geographically diverse participants.

3.4. Data Analysis

The responses from the 206 valid questionnaires were analyzed using SPSS 27. The data analysis process included descriptive statistics such as mean, standard deviation, and frequency distribution to summarize the general trends in consumer engagement. Inferential statistical techniques were also applied to test the relationships among variables. This included correlation analysis to identify associations between different engagement factors and regression analysis to examine the predictive impact of engagement dimensions on outcomes such as satisfaction or brand loyalty. Data were first checked for completeness and accuracy. Next, reliability analysis was conducted to assess the internal consistency of the scales used in the questionnaire. Cronbach's alpha values were calculated for each dimension of consumer engagement, and acceptable reliability scores ($\alpha > 0.7$) were observed. The results of these statistical tests were used to draw meaningful conclusions about the nature of consumer participation in online brand communities.

4. Analysis and Findings

Principal Component Analysis (PCA) data shows details about the extracted components and their variance explanation in Table 1. A total of seven components emerged from the analysis, yet the first six components surpass 1.0 in eigenvalues, thus

meeting the Kaiser criterion for meaningful factors. It was found that the first component affects 43.516% of the total variance (eigenvalue of 15.231).

Table 1: Principal component analysis with varimax rotation

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	15.231	43.516	43.516	15.231	43.516	43.516	13.390	38.257	38.257
2	6.100	17.429	60.945	6.100	17.429	60.945	5.064	14.469	52.726
3	4.587	13.104	74.049	4.587	13.104	74.049	4.073	11.637	64.362
4	3.041	8.690	82.739	3.041	8.690	82.739	3.988	11.393	75.756
5	1.688	4.823	87.562	1.688	4.823	87.562	2.736	7.818	83.574
6	1.159	3.311	90.873	1.159	3.311	90.873	2.334	6.669	90.243
7	.776	2.216	93.089	.776	2.216	93.089	.996	2.847	93.089

Extraction Method: Principal Component Analysis.

The second component explains 17.429% of the variance, while the third and fourth components contribute 13.104% and 8.690%, respectively. The variance explained by components five and six amounts to 4.823% and 3.311%, respectively. Data analysis shows that the first three components, alongside the total six components together, reach 90.873% of the complete data variance (Table 2).

Table 2: PCA with rotated component matrix

Rotated Component Matrix ^a							
	Component						
	1	2	3	4	5	6	7
I trust this brand to keep its promises.	.984						
This brand is honest in its communication with community members.	.964						
I believe this brand is reliable.	.955						
I feel safe interacting with this brand in its online community.	.913						
This brand has a good reputation among online community members.	.887						
I find useful information in the brand's online community.		.978					
Being a part of the community adds value to my experience with the brand.		.943					
The community provides me with exclusive benefits or offers.		.901					
I gain practical tips and insights from other community members.		.873					
The brand community is worth my time and attention.		.841					
The online community is easy to navigate.			.965				
The design of the community is user-friendly and engaging.			.931				
It is easy to find relevant information in the brand community.			.877				
I enjoy spending time in the brand's online community.			.854				
The community provides a positive and interactive experience.			.819				
I am satisfied with the brand's products and services.				.971			
I feel happy being associated with this brand.				.946			
The brand meets my expectations.				.905			
I feel valued as a customer in the brand's community.				.884			
I am likely to continue purchasing from this brand.				.836			
The information in the brand community is accurate.					.944		
I find the shared content relevant to my interests.					.915		
The information in the community is updated regularly.					.898		
Posts and discussions are trustworthy and fact-based.					.851		
The brand provides timely responses to customer questions.					.823		
The online community has many active members.						.956	
I can easily connect with other users in the community.						.945	
The community fosters open and respectful communication.						.926	

There is a good level of interaction among members.						.897	
The community motivates me to engage more with the brand.						.856	
I frequently participate in discussions within the brand's online community.							.948
I like and comment on posts shared in the brand community.							.965
I feel emotionally connected to the brand through its online community.							.930
I often share content from the brand's online community.							.884
I regularly check updates and activities in the brand community.							.829
Extraction Method: Principal Component Analysis.							
Rotation Method: Varimax with Kaiser Normalization.							
a. Rotation converged in 6 iterations.							

The research identifies seven unique components which define various brand community participation aspects. The analysis of Component 1 shows brand trust and reliability dimensions (0.887-0.984) through items that assess brand promises and honest communication and reliability and safety in interactions and reputation. The second component shows value and utility strengths through items measuring useful information and value addition and, exclusive benefits and practical insights and time worthiness (0.841-0.978). The third component, consisting of User Experience variables, exhibits high loading values (0.819-0.965), proving that both accessible information and user-friendly design, ease of navigation, and enjoyable and interactive features combine effectively. Brand satisfaction and loyalty constitute Component 4 and demonstrate very strong item loadings ranging from 0.836 to 0.971 for product satisfaction alongside brand association happiness and expectation fulfilment and customer value and purchase intention. The fifth component focuses on content quality as it shows significant loadings (0.823-0.944) for accuracy, relevance, regular updates, trustworthiness and timely responses.

The community connectivity aspect of Component 6 shows high loadings (0.856-0.956) for factors such as active membership, user connections, respectful communication, member interaction and engagement motivation. The active participation factor emerges in Component 7 through high factor loadings (0.829-0.965) of discussion participation and emotional connection, liking and commenting, content sharing, and regular community checking activities. The consistent and uncluttered loading pattern across the study shows that brand community engagement has distinct and well-defined measurement dimensions (Table 3).

Table 3: Regression analysis with model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.372 ^a	.138	.099	.889
a. Predictors: (Constant), Online Community (Structure & Activity Level), Brand Trust, Customer Satisfaction, Community Experience, Information Quality, Perceived Value				

A regression analysis has identified relationships between Online Community Structure & Activity Level and Brand Trust along with Customer Satisfaction and Community Experience combined with Information Quality and Perceived Value based on the model summary table. Declining to 0.372, the analysis shows that the relationship between predictors and outcome variables remains moderately positive. A survey of six predictors shows that they account for 13.8% of the observed variance in the dependent variable based on the R Square value of 0.138. The predictive power decreases to 9.9% after adjusting for model complexity through Adjusted R Square, while the original R Square reached 0.138. Observed values deviate on average 0.889 units from the regression line according to the standard error of the estimate. The model unveils a statistically significant amount of variance, but the low R Square score shows that unbearably many other unmeasured components drive dependent variable changes (Table 4).

Table 4: Results of ANOVA analysis

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.592	6	2.765	3.498	.003 ^b
	Residual	103.553	131	.790		
	Total	120.145	137			
a. Dependent Variable: Consumer Engagement (DV)						
b. Predictors: (Constant), Online Community (Structure & Activity Level), Brand Trust, Customer Satisfaction, Community Experience, Information Quality, Perceived Value						

ANOVA analysis uses Online Community Structure & Activity Level and Brand Trust as well as Customer Satisfaction, Community Experience, Information Quality, and Perceived Value to determine the significance of the model toward Consumer Engagement. The F-statistic result of 3.498 indicates a p-value below 0.01 ($p < 0.01$). The regression model demonstrates substantial ability to explain the variance in Consumer Engagement. The breakdown of variance shows regression variance (16.592) and residual variance (103.553), with six degrees of freedom allocated for the regression component (representing the six predictors) and 131 degrees of freedom for the residual component. The data shows a mean square regression value of 2.765, which is accompanied by a mean square residual value of 0.790. The analysis shows the six predictors offer substantial contributions towards consumer engagement behaviour; however, additional not-modelled elements impact the engagement measurements (Table 5).

Table 5: Results of coefficient in regression analysis

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.444	.455		5.372	.000
	Brand Trust	.180	.086	.175	2.106	.037
	Perceived Value	.075	.160	.072	.467	.641
	Community Experience	.080	.117	.080	.678	.499
	Customer Satisfaction	-.236	.143	-.237	-1.653	.101
	Information Quality	-.001	.115	-.001	-.006	.995
	Online Community (Structure & Activity Level)	.265	.090	.300	2.949	.004
a. Dependent Variable: Consumer Engagement (DV)						

A coefficients table displays the results of multiple regression, which evaluates Consumer Engagement based on six predictor variables. Consumer Engagement maintains its fundamental base value of 2.444 when all predictor variables equal zero. Among the six predictors, two demonstrate statistically significant relationships with Consumer Engagement. According to research findings, Brand Trust in combination with Online Community Structure & Activity Level shows strong statistical significance ($p = 0.037$) and ($p = 0.004$) for Consumer Engagement. The standardized beta coefficient value (0.300) indicates Online Community Structure & Activity Level exhibits the strongest positive effect on Consumer Engagement. Customer Satisfaction exhibits a negative link with Consumer Engagement, yet this association remains statistically insignificant at ($p = 0.101$). The results from the tests show that Perceived Value ($B = 0.075$, $p = 0.641$) and Community Experience ($B = 0.080$, $p = 0.499$) and Information Quality ($B = -0.001$, $p = 0.995$) do not affect consumer engagement significantly. Research findings show brand trust enhancement, along with active online community management, leads to the highest level of consumer engagement, yet other factors show minor direct effects on engagement.

5. Findings

The analysis found a strong connection between brand promises and honest communication and reliability and safety in interactions and reputation because these elements produced high factor loadings from 0.887 to 0.984. Value and utility strengths served as the basis for the second component, which included factors such as useful information along with value addition and exclusive benefits, practical insights, and timeworthiness with loadings between 0.841 and 0.978. User experience variables formed the third construct with accessibility of information, design usability, simple navigation and pleasant interactive qualities showing a high variation level of 0.819 to 0.965. Brand satisfaction and loyalty comprised the fourth construct, which featured item loadings exceeding 0.836 and reaching 0.971 across product satisfaction, brand association happiness expectation fulfilment and customer value and purchase intention. The fifth component displayed substantial loadings in the range of 0.823-0.944 for accuracy, regular updates, trustworthiness, timely responses and relevance. The sixth component, called Community connectivity, demonstrated strong loadings (0.856-0.956) across elements such as user connections, member interaction, engagement motivation and active membership alongside respectful communication benefits. The last component prioritized active participation by measuring discussion engagement and emotional connection alongside liking and commenting, content sharing, and regular community checking activities between 0.829 and 0.965.

Results from regression analysis showed six identified predictors collectively produced a 13.8% level of explained outcome variation regarding consumer engagement. The predictive capability of the model decreased to 9.9% following adjustments for model complexity. The ANOVA analysis demonstrated the regression model's successful ability to explain consumer engagement variance through its F-statistic of 3.498 and its p-value under 0.01. Two out of the six examined variables showed

strong statistical correlations with consumer engagement. The examination found a direct connection between online community structure and activity level ($p = 0.004$) and brand trust ($p = 0.037$). Among all predictors, online community structure and activity level demonstrated the highest positive impact on consumer engagement with a standardized beta value of 0.300. Consumer satisfaction exhibited a negative relationship with consumer engagement, but statistical significance was not established ($p = 0.101$). Consumer engagement demonstrated no direct relationship with perceived value, community experience, and information quality as measured by the research.

6. Suggestion

Companies must build detailed community structures which integrate clear instructions together with organized section content and straightforward navigation design for user-friendly experiences. Engagement data reveals that brands must dedicate resources toward creating purposeful platforms which deliver effortless user interactions. Scheduled community activities at both weekly and monthly and seasonal intervals help sustain continuous member involvement and stop communities from losing momentum. Community activities need to support multiple participation styles by making space for active participants who also welcome passive viewers alongside provision for growing member involvement. Strategies for community management need to establish brand trust as their foundational element. Brand consistency through action performance matching promises requires transparent product service information with immediate responses to customer inquiries. By establishing areas for consumer feedback and visibly executing proposed changes, brands establish better trust with their community about their commitment to listening.

Community members must feel secure, so brands need to create clear privacy policies and data protection measures. Product updates resulting from customer feedback develop trust alongside ongoing engagement since members authenticate that their input drives brand choices. The research did not find a direct correlation between content quality and community engagement statistics, although high-quality content continues to serve as the foundation for community success. Brands must create thorough content schedules which blend promotional posts with educational content, user-generated material and entertaining material. A content review process helps organizations maintain high standards of accuracy and relevance and time-sensitive information when sharing content. A brand can cultivate user-generated content by running competitions or offering feature opportunities as well as challenging members to create content which adds diversity to community assets and boosts member appreciation. By periodically adding new content formats from emerging media like interactive polls, short-form videos, and live streams, the community experiences stay lively and engaging.

The improvement of user experience requires continuous attention, although it specifically influences engagement actions indirectly. Brands should perform ongoing usability tests to discover points of friction within their community platform so they can eliminate these problems. Responsive design practices work together to provide access to the community through all device platforms and different screen dimensions. Major engagement growth happens when community members feel their experience is personalized through features that let them adjust their profiles, receive curated content, and receive coveted rewards. New members will be more likely to join when registration steps are simplified while onboarding methods are designed for user understanding, leading to broader community engagement. Membership engagement varies across different participation levels when organizations create diverse activity choices for their members. A multi-level approach to member engagement permits participants to choose from basic reactions through advanced content generation activities based on their comfort zone. Through gamification features which incorporate points systems combined with achievement badges and leaderboards, members receive recognition and engaging competition that promotes ongoing participation. Special product previews, together with exclusive events and personal encounters with brand representatives, serve as benefits which enhance participation and drive greater community engagement.

7. Managerial Implications

Organizations demanding improved consumer engagement from online brand communities can learn crucial managerial insights from this research. Organizations need dedicated resources to manage the essential nature and active state of communities. Community management teams need members who possess a wide range of skills, including customer service together with content creation and data analysis, and digital marketing expertise to handle the complex requirements of community work. The effective implementation of unified community management software platforms enables scheduling alongside monitoring and analysis of community activities while providing operational streamlining through engagement pattern insights. An ongoing training system for community managers guarantees participants learn contemporary industry practices alongside new technological advancements in the field.

The powerful effect of brand trust upon consumer engagement demonstrates the necessity for community management teams to maintain alignment with corporate brand strategy. Executives need to maintain brand consistency throughout all community interactions so these encounters represent both core organizational values and brand commitments. A properly developed set

of community guidelines establishes protocols which define proper conduct and set standards regarding acceptable content while defining conflict resolution protocols to help build trust among community members. Community trusts can be safeguarded from dismantlement by creating specific response procedures which handle sensitive matters or unfavourable incidents that impact the community. Regular audits of community content alongside interactions allow brands to discover discrepancies between brand promises and real community experiences so they can take quick corrective measures. Teamwork between community managers and, product developers and customer service personnel ensures product development based on community feedback as well as correct and up-to-date information displayed in the community.

Organizations must create extensive dashboard monitoring systems which oversee multiple engagement indicators that feature trust metrics along with value assessment measures, satisfaction ratings and community interconnectivity strength data points. The measurement of these dimensions at their initial stage enables crucial tracking of improvement initiatives throughout periods. Data-driven predictive models built from membership behaviours enable organizations to discover declining members so they can intervene before they leave. Community engagement metrics benefit from regular benchmarking against similar brand communities, which allows both a deeper understanding of performance and targeted improvement insights. Brand investment can be better justified by using attribution modelling to measure the financial effects of community engagement on purchase behaviour, brand advocacy, and customer lifetime value. Organizations should allocate their resources according to how different factors influence consumer engagement differently. Organizations should direct their investments toward enhancing community structures alongside trust-building approaches since research revealed these factors produce the most significant direct impact on consumer engagement.

8. Conclusion

A research investigation into online brand community engagement produces key discoveries which improve digital consumer action understanding. The analytical results show how engagement outcomes depend fundamentally on community structure combined with activity levels and brand trust, which leads to higher participation rates. Virtual communities hosting brand relationships demonstrate high complexity because of their seven distinct elements, which strengthen the requirement for sustainable, meaningful consumer connections. Community management success depends on brands implementing complete organizational strategies which combine platform design elements with trust-building efforts. Community development in the future needs to emphasize the design of organized pathways for member participation alongside multiple engagement platforms and open communication mechanisms, which will improve the collective member experience. Digital environments pursue further development, yet the foundational elements of trust alongside structured experiences and consistent user participation serve as requirements for community success. The recommendations from this research enable organizations to transform their static online brand communities into interactive value-creating ecosystems that serve consumers and brands in today's digital marketplace.

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References

1. F. Ardiyanto and H. Kusumadewi, "Extension of consumer brand engagement framework: Indonesian smartphone brands consumers," 4th International Conference on Education and Social Science Research (ICESRE), Semarang, Indonesia, 2022.
2. I. Asante, Y. Jiang, X. Luo, and M. Twumasi, "The organic marketing nexus: the effect of unpaid marketing practices on consumer engagement," *Sustainability*, vol. 15, no. 1, p. 148, 2022.

3. L. Bai, X. Yan, and G. Yu, "Impact of consumer engagement on firm performance," *Marketing Intelligence & Planning*, vol. 38, no. 7, pp. 847–861, 2020.
4. S. Bai et al., "Consumer engagement on social networking sites," *Journal of Organizational and End User Computing*, vol. 34, no. 1, pp. 1–20, 2022.
5. R. Bilro and S. Loureiro, "A consumer engagement systematic review: synthesis and research agenda," *Spanish Journal of Marketing - ESIC*, vol. 24, no. 3, pp. 283–307, 2020.
6. M. Bruyne and K. Verleye, "Realizing the economic and circular potential of sharing business models by engaging consumers," *Journal of Service Management*, vol. 34, no. 3, pp. 493–519, 2022.
7. M. Cheung, W. Leung, M. Yang, K. Koay, and M. Chang, "Exploring the nexus of social media influencers and consumer brand engagement," *Asia Pacific Journal of Marketing and Logistics*, vol. 34, no. 10, pp. 2370–2385, 2022.
8. Y. Chuang, "Promoting consumer engagement in online communities through virtual experience and social identity," *Sustainability*, vol. 12, no. 3, p. 855, 2020.
9. Ş. Çekirdekci, "Brand crisis communication and consumer brand engagement on social media: the case of frontline employee generated crisis," *Cankiri Karatekin University Journal of Economics and Administrative Sciences*, vol. 13, no. 3, pp. 1114–1134, 2023.
10. C. Ehrlich, M. Slattery, and E. Kendall, "Consumer engagement in health services in Queensland, Australia: a qualitative study about perspectives of engaged consumers," *Health & Social Care in the Community*, vol. 28, no. 6, pp. 2290–2298, 2020.
11. Z. Hamzah, H. Wahab, and M. Waqas, "Unveiling drivers and brand relationship implications of consumer engagement with social media brand posts," *Journal of Research in Interactive Marketing*, vol. 15, no. 2, pp. 336–358, 2021.
12. L. Hollebeek, W. Hammedi, and D. Sprott, "Consumer engagement, stress, and conservation of resources theory: a review, conceptual development, and future research agenda," *Psychology and Marketing*, vol. 40, no. 5, pp. 926–937, 2023.
13. Y. Kalender and F. Guzmán, "What drives consumers to engage in immersive technologies? A consumer metaverse engagement motivation model," *Psychology and Marketing*, vol. 42, no. 3, pp. 921–950, 2024.
14. F. Kujur and S. Singh, "Visual communication and consumer-brand relationship on social networking sites - uses and gratifications theory perspective," *Journal of Theoretical and Applied Electronic Commerce Research*, vol. 15, no. 1, pp. 30–47, 2020.
15. V. Kumar, I. Khan, M. Fatma, and A. Singh, "Engaging luxury brand consumers on social media," *Journal of Consumer Marketing*, vol. 39, no. 1, pp. 121–132, 2022.
16. P. Laksamana, S. Suharyanto, and Y. Cahaya, "Determining factors of continuance intention in mobile payment: fintech industry perspective," *Asia Pacific Journal of Marketing and Logistics*, vol. 35, no. 7, pp. 1699–1718, 2022.
17. F. Lu, X. Wang, S. Li, and Q. Zhao, "How mobile health living streaming engages the consumer - insights from a dual-process model," *Sustainability*, vol. 15, no. 10, p. 8097, 2023.
18. A. Mardani, E. Evrina, and B. Hartati, "Influencer authenticity: unravelling the impact on modern marketing," *Journal of Economic Business and Accounting (Costing)*, vol. 7, no. 3, pp. 6430–6435, 2024.
19. A. Morgan-Thomas, L. Dessart, and C. Veloutsou, "Digital ecosystem and consumer engagement: a socio-technical perspective," *Journal of Business Research*, vol. 121, no. 12, pp. 713–723, 2020.
20. R. Mostafa, "From social capital to consumer engagement: the mediating role of consumer e-empowerment," *Journal of Research in Interactive Marketing*, vol. 15, no. 2, pp. 316–335, 2021.
21. K. K. Ningrum and R. Roostika, "The influence of social media marketing activities on consumer engagement and brand knowledge in the culinary business in Indonesia," *Int. J. Res. Bus. Soc. Sci.*, vol. 10, no. 5, pp. 34–45, 2021.
22. S. Ornelas and J. Martínez, "The more I know, the more I engage: consumer education's role in consumer engagement in the coffee shop context," *Br. Food J.*, vol. 123, no. 2, pp. 551–562, 2021.
23. S. O. Osemeahon and M. Agoyi, "Linking FOMO and smartphone use to social media brand communities," *Sustainability*, vol. 12, no. 6, p. 2166, 2020.
24. M. Paruthi, H. Kaur, J. U. Islam, A. Rasool, and G. Thomas, "Engaging consumers via online brand communities to achieve brand love and positive recommendations," *Span. J. Mark. - Esic*, vol. 27, no. 2, pp. 138–157, 2023.
25. C. Prentice, S. M. C. Loureiro, and J. Guerreiro, "Engaging with intelligent voice assistants for wellbeing and brand attachment," *J. Brand Manag.*, vol. 30, no. 5, pp. 1–12, 2023.
26. S. Puligadda, J. R. Coyle, and J. Ni, "Are you engaged? The influence of brand schematicity on online brand engagement and brand purchase," *J. Res. Interact. Mark.*, vol. 15, no. 4, pp. 709–728, 2021.
27. L. Qiu, X. Chen, and T. J. Lee, "How can the celebrity endorsement effect help consumer engagement? A case of promoting tourism products through live streaming," *Sustainability*, vol. 13, no. 15, pp. 1–16, 2021.
28. Y. Qu, A. J. Saffer, and D. Riffe, "The social network antecedents to consumer engagement: revealing how consumers' conversations influence online engagement behaviors," *Corp. Commun. Int. J.*, vol. 27, no. 2, pp. 226–244, 2021.
29. W. Razmus, "Consumer brand engagement beyond the 'likes'," *Front. Psychol.*, vol. 12, no. 9, pp. 1–17, 2021.

30. B. A. Schee, J. Peltier, and A. J. Dahl, "Antecedent consumer factors, consequential branding outcomes and measures of online consumer engagement: current research and future directions," *J. Res. Interact. Mark.*, vol. 14, no. 2, pp. 239–268, 2020.
31. A. Shankar, "Impact of mobile banking application interactivity on consumer engagement," *J. Glob. Inf. Manag.*, vol. 30, no. 5, pp. 1–18, 2021.
32. S.K.D.U. De Silva, "Motives of social media usage on building consumer behavioural engagement," *Proc. Int. Conf. Bus. Manag.*, Nugegoda, Sri Lanka, 2020.
33. A. Suradi, S. Purwati, M. Zakaria, R. Nurbakti, and F. Mustafa, "Analysis of determinant factors customer loyalty towards brand in the telecommunication industry with the digitalization paradigm," *J. Sist. Inf. Teknol.*, vol. 6, no. 2, pp. 36–41, 2024.
34. N. Syalsabila and N. Hermina, "The interrelations of celebrity endorsement, social media use, and customer engagement in achieving customer purchase decision," *J. Manajerial*, vol. 10, no. 1, pp. 1–16, 2023.
35. A. Synnot, L. Weeks, S. Hill, L. Lytvyn, T. Radar, R. Randall, and T. Turner, "Consumer engagement in living evidence 'a beautiful opportunity': international qualitative study with patients and methodologists," *Clin. Public Health Guidelines*, vol. 1, no. 4, pp. 1–9, 2024.
36. S. Tan and W. Chen, "How marketer-generated content characteristics affect consumer engagement? Empirical evidence from China's WeChat food marketing," *Br. Food J.*, vol. 124, no. 1, pp. 255–274, 2022.
37. Ž. Trkulja, J. Dlačić, and D. Primorac, "Social identity dimensions as drivers of consumer engagement in social media sports club," *J. Risk Financ. Manag.*, vol. 15, no. 10, p. 458, 2022.
38. L. Walsh, N. Hyett, J. Howley, N. Juniper, C. Li, B. MacLeod-Smith, and S. Hill, "Social media as a tool for consumer engagement in hospital quality improvement and service design: barriers and enablers for implementation," *Int. J. Health Policy Manag.*, vol. 11, no. 10, p. 2287, 2021.
39. S. Wang, "Explore the influences of social media content on young consumer's engagement and purchase intention in the Chinese luxury sportswear market," *Front. Bus. Econ. Manag.*, vol. 11, no. 2, pp. 1–8, 2023.
40. T. Wang, Y. Limbu, and X. Fang, "Consumer brand engagement on social media in the COVID-19 pandemic: the roles of country-of-origin and consumer animosity," *J. Res. Interact. Mark.*, vol. 16, no. 1, pp. 45–63, 2022.
41. J. Wolter, T. Bacile, and P. Xu, "How online incivility affects consumer engagement behavior on brands' social media," *J. Serv. Res.*, vol. 26, no. 1, pp. 103–119, 2023.
42. Q. Yang, H. Li, Y. Lin, Y. Jiang, and J. Huo, "Fostering consumer engagement with marketer-generated content: the role of content-generating devices and content features," *Internet Res.*, vol. 32, no. 7, pp. 307–329, 2022.
43. S. Yesiloglu, J. Memery, and C. Chapleo, "To post or not to post? Exploring the motivations behind brand-related engagement types on social networking sites," *Internet Res.*, vol. 31, no. 5, pp. 1849–1873, 2021.
44. X. Yu, Y. Li, K. Zhu, W. Wang, and W. Wen, "Strong displayed passion and preparedness of broadcaster in live streaming e-commerce increases consumers' neural engagement," *Front. Psychol.*, vol. 13, no. 9, pp. 1–13, 2022.
45. D. Zhang, L. Fu, J. Ma, and C. Chen, "Social-oriented versus task-oriented streamer interaction styles on live streaming e-commerce: empirical research in China," *J. Consum. Behav.*, vol. 23, no. 4, pp. 1995–2008, 2024.
46. Z. Zhao, Y. Liu, J. Wang, B. Wang, and Y. Guo, "Association rules analysis between brand post characteristics and consumer engagement on social media," *Eng. Econ.*, vol. 32, no. 4, pp. 387–403, 2021.