The impact of social media interactivity of sports organizations on consumer loyalty

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ABSTRACT

Consumer loyalty in the social networking sites (SNSs) environment is influenced not only by basic engagement but also by various other factors. This study examines the impact of social media interactivity, such as user control, personalization, responsiveness, interestingness, and two-way communication, on consumer loyalty in the context of sports organizations. Using SPSS 30.0 and AMOS 29.0, a survey was conducted with 212 university students in South Korea, and structural equation modeling (SEM) was employed to analyze the data. Among the five dimensions of social media interactivity, user control, interestingness, and two-way communication positively influence consumers' social presence, which subsequently has a significant impact on consumer loyalty. Furthermore, social presence has a stronger effect on consumer loyalty than relationship satisfaction. This study demonstrates the impact of social media interactivity of sports organizations on consumer loyalty and identifies the unique contribution of social presence to enhancing consumer loyalty. This study provides nuanced insights into the influence of social media interactivity on consumer loyalty within sports organizations. It helps sports organizations to develop appropriate strategies to strengthen their emotional connection with consumers.

Contribution/ Originality: This study addresses the gap in the literature regarding the role of social media interactivity in consumer loyalty in sports organizations on SNS. The results contribute to theoretical development and offer new insights for future research on consumer behavior and digital marketing on SNS.

1. INTRODUCTION

The global popularity of social networking sites (SNSs) has brought significant changes to communication among individuals, organizations, and businesses. The development of social media platforms, such as X and Instagram, has expanded the boundaries of user interaction, allowing users to maintain and develop social networks, share information, and engage in entertainment activities, all of which have become integral parts of daily life.

The literature suggests that SNS enables continuous interaction between organizations and users, regardless of their geographic location or time zone [1]. As the number of SNS users grows, many organizations seeking to expand their business and target markets have adopted SNS as a marketing tool [2].

SNS offers sports organizations a unique channel to engage with users, thereby enhancing their sense of belonging and loyalty. Consumers who engage more actively with sports organizations are more likely to exhibit consumption behaviors than those who are less involved [3]. From the perspective of sports organizations, the more

often they are able to meet the needs of sports consumers, the more likely consumers are to align their consumption with the organization [4]. Nevertheless, the pace of meaningful interaction between most sports organizations and consumers remains slow.

While there has been extensive research on sports organizations in online environments, such as sport leagues, teams, and brands [5], few studies have focused on sports organizations and SNS. Earlier studies have primarily focused on motivation [6, 7] and strategy Annamalai, et al. [8]. Nisar, et al. [9] examined the impact of sports organization engagement strategies on consumer interactivity and found that increased interaction through social media enhances an organization's attractiveness; however, the study only explored the relationship between interactivity and audience interest.

Fang, et al. [10] and Leclercq-Machado, et al. [11] examined the influence of consumer social presence and relationship satisfaction on consumer loyalty across various domains and consistently found a positive impact on consumer loyalty. However, none of these studies specifically investigated this relationship within the SNS context. Cheng, et al. [12] investigated the factors that influence consumer loyalty on SNSs and identified variables such as information quality, the need for social capital, emotion, and perceived critical mass as influential. However, the important influencing factor of interactivity has not been studied.

Vale and Fernandes [13] investigated the reasons behind interactions between consumers and sports clubs, with a detailed consideration of consumer motivations. However, their study did not approach the topic from the perspective of the clubs. Similarly, Machado et al. [6] explored the motivations behind consumer interactions with sports brands on social networking sites (SNS), but their research also focused solely on consumer motivations and did not consider the impact of interactivity between sports brands and consumers on the latter.

In order to use social media more effectively and establish deeper relationships with consumers, sports organizations require appropriate guidance. Therefore, this study investigates the effect of SNS-based social media interactivity (user control, personalization, responsiveness, interestingness, and two-way communication) on consumer loyalty and analyzes the roles of consumer social presence and relationship satisfaction between media interactivity and consumer loyalty. This helps to understand the relationship between the interaction between sports organizations and consumers and consumer loyalty in the SNS environment.

2. THEORETICAL BACKGROUND AND HYPOTHESIS SETTING

Traditional marketing activities have been significantly affected by the development of SNS, leading to substantial changes in the marketing strategies of sports organizations, which have benefited greatly from SNS [14]. SNS serves as an effective tool to shorten the distance between brands and consumers, enabling one-to-one, one-to-many, and many-to-many communication without the constraints of geography, time, or space. This greatly increases the reach and effectiveness of brand communication [15]. For consumers, SNS expands the channels through which they receive information, empowering them to access more information about brands or products, as well as to identify, compare, and provide feedback [16].

In this dynamic environment, if sports organizations wish to remain competitive, they must use SNS regularly to keep pace with changes in consumer knowledge, preferences, and behaviors in the online space [17]. It is worth noting that as more sports organizations enter this competitive arena, they can no longer rely on simple advertising campaigns. To maintain a competitive edge, they must provide content, value, and interaction that meet the needs of their consumers.

2.1. Social Media Interactivity

Social media interactivity is one of the key functions of SNS and a crucial characteristic for evaluating new media platforms. Interactivity plays a pivotal role in influencing users' decisions, shaping consumer attitudes, and ultimately

affecting their behavior [18]. Numerous researchers have recognized the importance of interactivity, leading to a significant body of work on social media interactivity [13].

Interactivity is defined as the extent to which users can engage in the real-time modification of mediated environments in terms of form and content Steuer [19]. Hoffman and Novak [20] examined interactivity from two perspectives: user-to-user interactivity, which focuses on interpersonal communication among users in response to information shared by others, and user-to-system interactivity, which involves interactions between users and the system or between systems. These concepts underscore the notion that interactivity serves as a bridge for users to connect outward.

Extensive research has examined the elements of social media interactivity. Wu and Wu [21] divided interactivity into perceived control, perceived responsiveness, and perceived personalization to measure the perceived interactivity of websites. Their findings showed that their model could effectively measure website interactivity. Cortado and Chalmeta [22] explored the use of social networks as a tool for corporate social responsibility communication and management, concluding that companies should adopt two-way communication to enhance interactivity with users.

Chang and Dong [23] identified six dimensions of consumer interactivity within SNS environments (interaction frequency, interestingness, decentration, responsiveness, situational, and reciprocal exchange) and examined their impact on trust and purchase intention. They found that all dimensions, except for responsiveness, positively influenced purchase intention.

Building on previous studies, this research classifies the social media interactivity of sports organizations into five dimensions: user control, personalization, responsiveness, interestingness, and two-way communication, and analyzes their impact on consumer loyalty.

Several studies have identified user control as a central dimension of interactivity [24]. In this study, user control is viewed as a structural characteristic of media that allows users to control content on social media, including viewing order, speed, and method, and easily access services. Prior research has focused on behavioral and usage control [25] primarily at an individual level, whereas this study focuses on user control within social media environments.

Personalization refers to the customization of features, interfaces, and content within an information system based on individual user needs [26]. Personalization can be approached from two perspectives: creating content and projects tailored to customers' preferences or offering products based on users' prior preferences and usage history [27]. This study considers both types of personalization and their combined influence on other factors.

Responsiveness is defined as when the recipient assumes the role of the sender and responds to the original message in some way [28]. In many studies, responsiveness is regarded as a critical factor for maintaining interactive relationships, affecting both the process and outcomes of interactions [29]. This study describes responsiveness from a user perspective, specifically focusing on how promptly and frequently sports organizations respond to user needs via social media.

Interestingness is a key factor in human behavior and motivation that is often associated with emotions related to exploration and learning [30]. In this study, interestingness refers to the user's feelings during interactions with sports organizations on social media. Although some studies have viewed interestingness as a technical attribute, this study considers it an aspect of interactivity, derived from sports organizations providing enjoyable experiences and stimulating consumer curiosity [31].

Two-way communication refers to the extent to which communication technologies can create an interactive environment in which participants can exchange information [32]. Some studies have equated two-way communication with interactivity [33], further emphasizing its central role in interactivity. In this study, two-way communication is described as the interaction between consumers and sports organizations, with an emphasis on whether consumers' needs are addressed or fulfilled.

2.2. Social Presence

The psychological state of social presence naturally emerges during and as a result of the communication process [34, 35]. Generally, social presence is determined by two factors: technology- and consumer-centered elements [36]. Technology-centered factors are assessed and predicted based on technological specifications, while consumer-centered perspectives focus on examining social presence from the consumer's point of view [37]. More recent studies have shifted their focus toward consumer-centered social presence.

Numerous studies have examined the relationship between social media interactivity and social presence and found that social media interactivity fosters a sense of social presence among consumers. Fortin and Dholakia [38] explored the relationship between advertisement interactivity and vividness on participants' social presence and found that three dimensions of interactivity (control, role exchange, and two-way communication) had a direct impact on social presence.

Horzum [39] studied the relationship between interactivity and social presence in online learning environments and showed that interactivity positively influences students' sense of social presence. Cui, et al. [40] found that social presence significantly affects website interactivity and suggested that user-generated content with emotive expressions enhances consumers' sense of control, synchronicity, and responsiveness.

This study examines five dimensions of social media interactivity (user control, personalization, responsiveness, interestingness, and two-way communication) and their influence on consumers' sense of social presence. If sports organizations actively engage with consumers on SNS and meet their needs, they are more likely to have a positive impact on their social presence. Therefore, this study proposes the following hypotheses.

H_1: *Social media interactivity will have a positive effect on consumers' sense of social presence.*

H_{1-1}: *User control will positively influence social presence.*

H_{1-2}: *Personalization will positively influence social presence.*

H_{1-3}: *Responsiveness will positively influence social presence.*

H_{1-4}: *Interestingness will positively influence social presence.*

H_{1-5}: *Two-way communication will positively influence social presence.*

2.3. Social Presence and Relationship Satisfaction

Both social presence and relationship satisfaction are consumer-perceived psychological states. In SNS, relationship satisfaction refers to the degree of satisfaction consumers derive from a sports organization that provides them with a greater sense of social presence.

The relationship between social presence and satisfaction has been well documented. Bulu [41] found that, among the three types of presence (place, social, and co-presence) in virtual worlds, social presence has the most significant impact on student satisfaction. Similarly, Li et al. [42] showed that social presence significantly affects user satisfaction in digital social reading. Richardson et al. [43] conducted a meta-analysis of online environments and found a strong positive correlation between social presence and satisfaction. This study posits that high-quality interactions between consumers and sports organizations on SNS enhance social presence, which in turn positively impacts relationship satisfaction. Based on previous studies, this study proposes the following hypothesis.

H_2: *Social presence positively influences consumer relationship satisfaction.*

2.4. Consumer Loyalty and Social Presence

Sports organizations are deeply interested in fostering consumer loyalty. Social presence provides a sense of direct personal interaction, which can lead to sustained relationships and loyalty from consumers [44]. Earlier studies have confirmed the impact of social presence on consumer loyalty. Attar et al. [45] examined the influence of SNS on consumer loyalty in an online shopping environment and found that social presence within SNS positively impacts consumer loyalty.

Cyr, et al. [46] conducted an empirical study with 185 participants to explore how consumer loyalty can be established in an online environment. Their results indicate that social presence has a direct positive influence on consumer loyalty and also affects it indirectly through factors such as trust. Fang, et al. [10] investigated the effect of social presence in video site bullet screens on electronic loyalty, revealing that viewers' sense of social presence positively impacts their electronic loyalty to the website.

In summary, social presence can influence consumer loyalty to certain products or services, either directly or indirectly; therefore, this study proposes the following hypothesis.

H₃: Social presence has a positive effect on customer loyalty.

Consumer loyalty encompasses various dimensions; it is appropriate to consider consumer satisfaction because loyal consumers often develop an emotional bond through repeated purchases of services or products [47]. Relationship satisfaction is one such emotional bond. Most studies identify relationship satisfaction as a key factor in consumer loyalty.

Fuentes-Blasco et al. [48] investigated the impact of satisfaction on loyalty in the retail sector, finding that both emotional and cognitive satisfaction contribute to the development of loyalty. Yoo and Park [49] studied the relationship between consumer satisfaction and loyalty in the context of custom luxury goods online, finding that consumer satisfaction affects loyalty to the brand. Wu [50] surveyed destination loyalty in the tourism industry and found that consumer satisfaction with a destination is a crucial determinant of destination loyalty. Thus, consumer relationship satisfaction impacts loyalty across various domains. Based on these findings, this study proposes the following hypothesis.

H₄: Relationship satisfaction has a positive effect on customer loyalty.

This study's research model, which is based on the above review of the relevant literature, is illustrated in Figure 1.
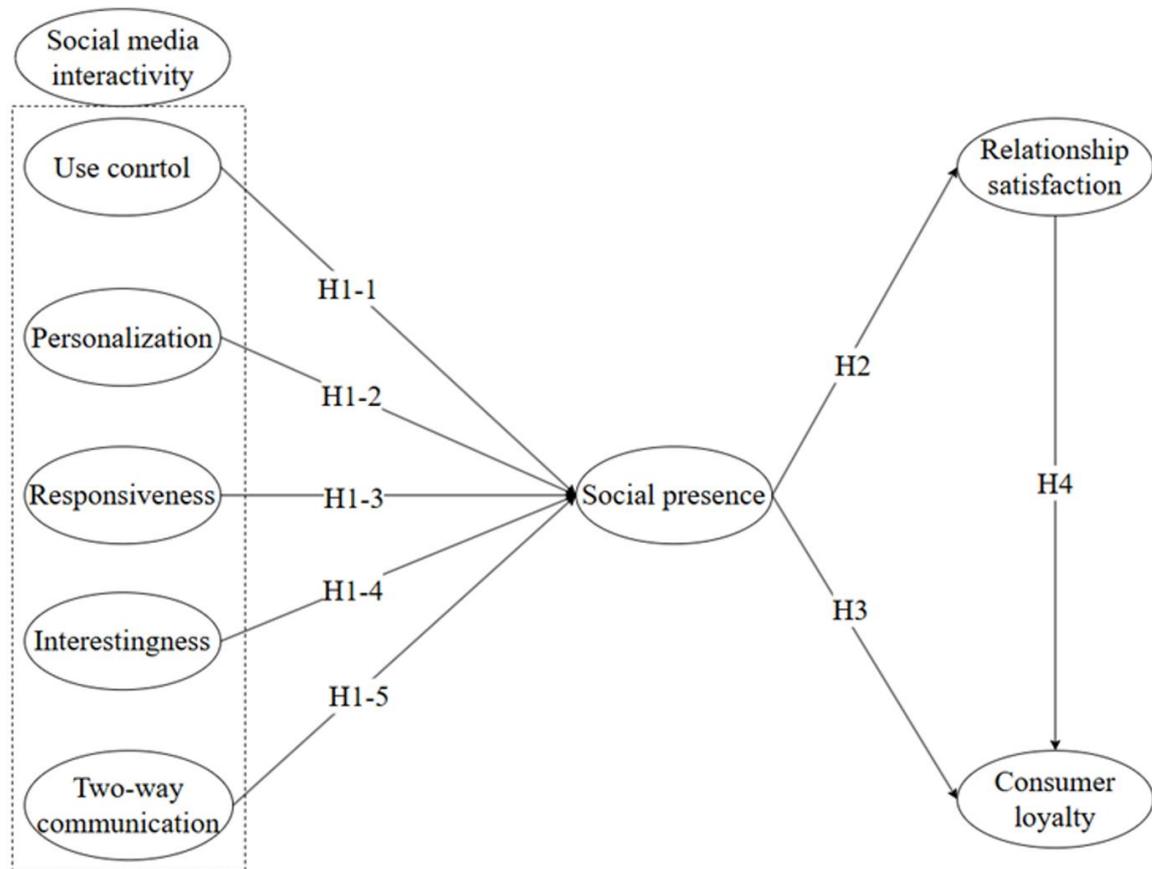

Figure 1. Research model.

3. RESEARCH METHOD

3.1. Participants

This study examines the impact of social media interactivity, such as user control, personalization, responsiveness, interestingness, and two-way communication, on consumer loyalty in the context of sports organizations. To achieve this, this study used a questionnaire to survey 212 undergraduate students at a four-year university in Gyeonggi-do, South Korea.

The initial screening questions were whether the participants used social media (e.g., X and Instagram) and whether they had purchased sports products. Participants who answered "yes" to both questions were selected for the study; those who answered "no" to either question were excluded.

During the survey, participants were explicitly instructed not to disclose any personally identifiable information such as their phone number, name, or email address. Additionally, participants had the right to withdraw from the study at any time. The initial survey included 274 participants; after removing invalid and non-qualifying responses, a total of 212 valid responses were included. Table 1 presents the descriptive statistics of the study's participants.

Table 1. Descriptive statistical information on participants.

Category	Item	Frequency	Percentage%
Gender	Male	89	41.98%
	Female	123	58.02%
Year	Freshman	34	16.04%
	Sophomore	85	40.09%
	Junior	72	33.96%
	Senior	21	9.91%
Age	Under 19	33	15.57%
	20 to 21	88	41.51%
	22 to 23	79	37.26%
	24 and above	12	5.66%

3.2. Measures

We used a survey questionnaire to measure participants' social media interactivity, social presence, relationship satisfaction, consumer loyalty, and demographic characteristics. Except for demographic characteristics, the four core constructs (social media interactivity, social presence, relationship satisfaction, and consumer loyalty) were measured using a 5-point Likert scale. Participants reported their opinions on a scale from 1 ("Strongly disagree") to 5 ("Strongly agree").

Items from previous studies were adapted to ensure the validity of the questionnaire. The complete questionnaire is available in the Supplementary Material. Social media interactivity was divided into five dimensions with 11 items: user control, personalization, responsiveness, interestingness, and two-way communication.

The user control dimension (2 items) focused on the convenience of consumer autonomy (e.g., I can freely choose the order, speed, and manner of viewing content) [25, 51]. The personalization dimension (2 items) addressed consumers' specific needs (e.g., the service can be tailored to my needs) [27, 52].

The responsiveness dimension (2 items) considered the speed and frequency of sports organizations' responses via social media (e.g., promptly responding to my needs) [29]. The interestingness dimension (3 items) focused on consumers' experiences during interactions with sports organizations on social media (e.g., providing enjoyable and interesting experiences) [31, 38] while the two-way communication (2 items) assessed whether communication during interactions meets consumers' needs (e.g., easily finding answers to questions that meet visitor needs) [53, 54].

Social presence (3 items) primarily examined consumers' perceived responses to interactions with sports organizations on social media (e.g., feeling a sense of shared participation, understanding, and closeness through continuous communication) [39, 40, 42, 55].

Relationship satisfaction (4 items) evaluated consumers' satisfaction with the services and products provided by sports organizations (e.g., overall satisfaction with my relationship with the sports organization) [49, 56].

Finally, consumer loyalty (6 items) focused on consumers' willingness to be loyal to a sports organization (e.g., willingness to repurchase products from the sports organization; actively spreading positive information about the sports organization) [10, 57, 58].

3.3. Data Analysis

This study used SPSS 30.0 and AMOS 29.0 to analyze the collected data. Initially, a frequency analysis was conducted to identify the demographic characteristics of the study participants. Then, a confirmatory factor analysis (CFA) was conducted to assess the convergent and discriminant validity of all the research constructs. The empirical analysis employed the maximum likelihood method, which assumes multivariate normality. Subsequently, goodness of fit was assessed by CFA to determine the optimality of the conceptual and variable constructs. The results are summarized in Table 2.

Although the chi-square (χ^2) value in Table 2 does not meet conventional standards, it is important to note that the fit indices in structural equation modeling (SEM) are relative indicators rather than absolute criteria; thus, the χ^2 value should be interpreted in conjunction with the other indices [59]. We utilized the Tucker-Lewis index (TLI) and comparative fit index (CFI) proposed by Netemeyer, et al. [60] along with the χ^2/df ratio and root mean square error of approximation (RMSEA) suggested by Kenny, et al. [61] to validate the model fit. The results indicated that TLI = 0.939, CFI = 0.951, χ^2/df = 1.813, and RMSEA = 0.062, suggesting that the model fit was satisfactory.

Furthermore, to verify the aggregate validity, the standardized loadings for this study were all greater than 0.5, the average variance extracted (AVE) values exceeded 0.5, and the composite reliability (CR) values were above 0.7, indicating compliance with the established standards. Following the CFA, a Cronbach's alpha test was conducted to assess the internal consistency reliability of each factor. According to Nunnally and Bernstein [62], a Cronbach's alpha value of 0.7 or higher is acceptable. Table 2 shows that all the factors exceeded this threshold, demonstrating high reliability of the scales.

Additionally, we validated the discriminant validity of the scales based on the research conducted by Fornell and Larcker [63], which utilized AVE values and the squared correlations. Fornell and Larcker stated that if the AVE for each construct is greater than the squared correlation between two constructs, then discriminant validity is established. In this study, the minimum AVE value reported in Table 2 was 0.688 for two-way communication, while the maximum squared correlation value in Table 3 was 0.594 (0.771^2). This indicates that the scales employed in this research possessed adequate discriminant validity.

Table 2. Confirmatory factor analysis and reliability analysis.

Factor	Item	Standardized loading	So. E	CR	AVE	Cronbach's α
User control (UC)	UC1	0.883	0.150	0.905	0.827	0.870
	UC 2	0.872	0.173			
Personalization (PE)	PE1	0.864	0.248	0.845	0.731	0.848
	PE2	0.853	0.292			
Responsiveness (RE)	RE1	0.904	0.198	0.903	0.823	0.904
	RE2	0.915	0.159			
Interestingness (IN)	IN1	0.822	0.246	0.915	0.783	0.891
	IN2	0.873	0.162			
	IN3	0.875	0.203			
Two-way communication (TW)	TW1	0.816	0.263	0.815	0.688	0.778
	TW2	0.780	0.315			
Social presence (SP)	SP1	0.793	0.271	0.905	0.760	0.874

Factor	Item	Standardized loading	So. E	CR	AVE	Cronbach's α
	SP2	0.880	0.163			
	SP3	0.840	0.231			
Relationship satisfaction (RS)	RS1	0.895	0.149	0.946	0.815	0.928
	RS2	0.876	0.166			
	RS3	0.878	0.168			
	RS4	0.844	0.211			
Consumer loyalty (CL)	CL1	0.785	0.230	0.929	0.688	0.891
	CL2	0.816	0.191			
	CL3	0.781	0.278			
	CL4	0.814	0.189			
	CL5	0.694	0.287			
	CL6	0.676	0.409			

Note: $\chi^2=406.194$(df=224, p=0.000), χ^2/df=1.813, TLI=0.939, CFI=0.951, RMSEA=0.062.

Table 3. Correlation analysis results.

Factor	1	2	3	4	5	6	7	8
User control	1							
Personalization	0.39***	1						
Responsiveness	0.37***	0.77***	1					
Interestingness	0.41***	0.52***	0.52***	1				
Two-way communication	0.44***	0.62***	0.61***	0.534***	1			
Social presence	0.48***	0.46***	0.49***	0.51***	0.52***	1		
Relationship satisfaction	0.40***	0.33***	0.32***	0.40***	0.41***	0.49***	1	
Consumer loyalty	0.50***	0.57***	0.48***	0.41**	0.55***	0.60***	0.59***	1

Note: ***$p<0.001$.

4. RESULTS

4.1. Correlation Results

The results of the Pearson correlation coefficient analysis, as presented in Table 3, indicate that all variables exhibit positive correlations with one another. The correlations are statistically significant at the 0.01 level. Furthermore, the correlation coefficients are all below 0.8, suggesting the absence of multicollinearity among the study's variables.

4.2. Hypothesis Testing

This study analyzed the structural model by focusing on the relationships among the various variables, with results presented in Table 4 and Figure 2. The findings summarized in Table 4 show that the model fit indices were TLI = 0.927, CFI = 0.938, χ^2/df = 1.980, and RMSEA = 0.068, indicating a satisfactory model fit. Among the five factors of social media interactivity (user control, personalization, responsiveness, interestingness, and two-way communication), user control (β = 0.260, p < 0.001), interestingness (β = 0.170, p < 0.05), and two-way communication (β = 0.293, p < 0.05) had a positive impact on social presence. Consequently, H1-1, H1-4, and H1-5 were supported, whereas H1-2 (personalization) and H1-3 (responsiveness) were not supported. Furthermore, social presence significantly positively influenced relationship satisfaction (β = 0.646, p < 0.001) and consumer loyalty (β = 0.464, p < 0.001), leading to the acceptance of hypotheses H2 and H3. Additionally, relationship satisfaction demonstrated a significant positive effect on consumer loyalty (β = 0.269, p < 0.001), thus supporting hypothesis H4. In summary, with the exception of hypotheses H1-2 and H1-3, all the research hypotheses and proposed model received empirical support.

Table 4. Model testing results.

Hypothesis	Paths	Standardized regression coefficient	Standardized error	t -value	Testing
H1-1	UC→SP	0.260	0.070	3.731***	Supported
H1-2	PER→SP	−0.015	0.147	−0.101	Rejected
H1-3	RES→SP	0.105	0.117	0.898	Rejected
H1-4	INT→SP	0.170	0.079	2.151*	Supported
H1-5	TC→ SP	0.293	0.128	2.293*	Supported
H2	SP→RS	0.646	0.084	7.699***	Supported
H3	SP→CL	0.464	0.070	6.595***	Supported
H4	RS→CL	0.269	0.055	4.873***	Supported

Note: χ^2=463.369, df=234, p=.000), $\chi2$/df=1.980, TLI=0.927, CFI=.938, RMSEA=0.068; *p<0.05, ***p<0.001.
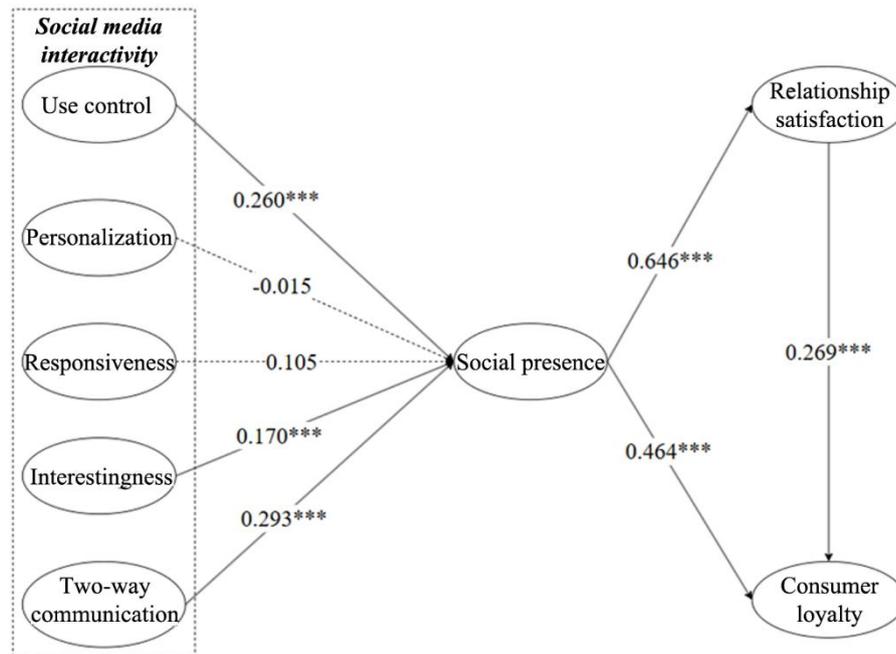
Figure 2. Path coefficients of the hypothesized model.
Note: ***p<0.001.

5. DISCUSSION

This study examined the impact of social media interactivity in sports organizations on social presence, relationship satisfaction, and their subsequent effects on consumer loyalty in the context of SNS. The results of this study indicate that the interactivity of a sports organization's social media exerts a positive influence on social presence. In turn, social presence positively impacts relationship satisfaction and consumer loyalty. Relationship satisfaction also positively influences consumer loyalty. More specifically, user control, interestingness, and two-way communication are key factors in social media interactivity that enhance social presence, which then influences relationship satisfaction and consumer loyalty.

In this study, both social presence and relationship satisfaction had significant positive effects on consumer loyalty. This confirms the critical role of social presence and relationship satisfaction in fostering consumer loyalty within sports organizations, as demonstrated by Xu and Du [64] and Lim et al. [55]. Previous studies have shown that social presence, whether in online or offline environments, can foster a sense of community among consumers. This sense of community encourages greater interaction and participation, thereby strengthening the bond between consumers and brands, ultimately leading to repeat purchases or usage and increased loyalty [44].

In this study, interactive behaviors between sports organizations and consumers enhanced consumers' sense of social presence, which, in turn, increased their loyalty to a sports organization. When consumers are satisfied with

the products or services they receive (particularly in terms of convenience and customer service responsiveness), their loyalty to the brand or organization increases [65]. In our research, consumers' increased satisfaction with a sports organization led to greater loyalty. Interestingly, the influence of social presence on consumer loyalty was stronger than that of relationship satisfaction. This may be due to the immersive experience elicited by a heightened sense of social presence, directly fostering consumer loyalty toward the sports organization [66].

Among the five dimensions of social media interactivity, user control, interestingness, and two-way communication had significant positive effects on consumers' social presence. Social media interactivity explained important aspects of what influences social presence, consistent with previous research [39]. However, the different dimensions of social media interactivity had varying impacts on consumers' social presence within sports organizations.

Specifically, two-way communication has the strongest effect on social presence among the three positively influential dimensions. This result aligns with prior findings that two-way communication fosters increased interaction between consumers and sports organizations, promoting a sense of connection and closeness, which are key drivers of social presence [67].

User control was the second most influential factor on consumers' social presence. As prior studies had identified user control as a central dimension of interactivity [24], our findings were consistent with our expectations. Users' ability to easily control the content they wish to view and interact with through SNS facilitates their engagement with sports organizations, enhancing social presence. Greater control over their interactions leads to higher engagement, stronger interactive capacities, and ultimately, a greater sense of social presence [68].

Interest was the third most influential factor in social presence. On SNS platforms, consumer engagement often revolves around the interestingness of the content and the enjoyable experiences users derive from it. Interesting content and enjoyable environments both contribute to an enhanced social presence [69].

However, personalization and responsiveness did not show a positive impact on social presence. While this result contradicts our initial hypothesis, it is consistent with the findings of some previous studies [40]. Research has indicated that responsiveness may not have a direct relationship with outcome variables but can influence them indirectly. For example, responsiveness can indirectly affect consumer loyalty through trust, but it does not directly influence loyalty itself [70].

The lack of a positive relationship between responsiveness and social presence could be due to the nature of low-engagement environments, where prompt responses may not necessarily create a meaningful sense of presence among consumers. Although users may receive quick replies, those responses may lack meaningful engagement.

Another possible reason is a mismatch between responsiveness and consumer expectations. For instance, if consumers expect highly personalized interactions when engaging with sports organizations on SNS but instead receive automated or scripted responses via chatbots, their sense of social presence may be diminished [40]. In this study, we did not observe a positive relationship between personalization and social presence. One potential reason is that when personalization fails to meet the desired expectations of consumers, it may lead to dissatisfaction, reducing their social presence. Another reason may be concerns about excessive personalization, which could trigger privacy concerns and ultimately decrease consumers' sense of social presence.

Previous studies on social media interactivity have predominantly focused on consumers from a theoretical perspective. This study, however, explored the role of social media interactivity in the context of sports organizations. First, this research expands the model of consumer loyalty, particularly within the domain of sports marketing. Traditional consumer loyalty models have largely emphasized factors such as quality, brand image, and service. This study's findings demonstrate that sports organization participation in SNS also influences consumer loyalty.

Second, our study's findings show that new dimensions of social media interactivity (user control, interestingness, and two-way communication) can serve as theoretical constructs to explore various consumer behaviors on digital media platforms, especially in terms of emotional and cognitive engagement with sports organizations. Finally, our

study shows that SNS is not just a marketing tool but also an interactive platform for sports organizations and consumers. This study offers novel insights for future research on consumer behavior and digital marketing strategies.

From a practical perspective, our findings provide valuable insights for sports organizations seeking to improve service quality and enhance competitive advantage on SNS platforms. First, we show that social media interactivity has a positive impact on consumers' social presence, which enhances their positive perception of the sports organization. This offers practical insights for sports organizations on how to effectively engage with consumers on SNS, helping to strengthen emotional ties and loyalty.

Second, social presence has a stronger influence on consumer loyalty than relationship satisfaction. Although both factors positively impact loyalty, sports organizations should recognize this distinction when developing strategies. By fostering sustained and meaningful interaction on SNS, organizations can create digital spaces that cultivate consumers' sense of belonging and loyalty.

This study has several limitations. First, the results were obtained in the context of interactions between sports organizations and consumers on SNS, where consumers' identity and sense of belonging (e.g., to teams or sports organizations) may play a more pronounced role in consumer loyalty than in other industries. Thus, the unique context provided by sports organizations may differ from that of other businesses or service providers. Future research should analyze consumer loyalty across different industry contexts.

Second, this study did not classify social media interactivity but instead explored its different dimensions. Future research could identify additional dimensions and categorize them into various types.

Finally, this study primarily focuses on the younger generations. More detailed research across different demographic groups is required in the future.

6. CONCLUSION

This study empirically demonstrates the impact of sports organizations' social media interactivity on consumer loyalty and reveals the unique contribution of social presence to consumer loyalty. These findings provide a deeper understanding of the psychological factors that drive consumer loyalty within the SNS domain, particularly in the context of sports organizations and their engagement with consumers through social media interactivity. Additionally, the findings are based on interactions between sports organizations and consumers on SNS, suggesting that future research could explore the effects of interactivity on consumer loyalty across different industry contexts. Future studies could examine other dimensions of interactivity and classify them into distinct types for further investigation.

REFERENCES

[1]   D. Laniado, Y. Volkovich, S. Scellato, C. Mascolo, and A. Kaltenbrunner, "The impact of geographic distance on online social interactions," *Information Systems Frontiers*, vol. 20, no. 6, pp. 1203-1218, 2018. https://doi.org/10.1007/s10796-017-9784-9

[2]   F. Li, J. Larimo, and L. C. Leonidou, "Social media in marketing research: Theoretical bases, methodological aspects, and thematic focus," *Psychology & Marketing*, vol. 40, no. 1, pp. 124-145, 2023. https://doi.org/10.1002/mar.21746

[3]   B. Popp, B. Wilson, C. Horbel, and H. Woratschek, "Relationship building through Facebook brand pages: The multifaceted roles of identification, satisfaction, and perceived relationship investment," *Journal of Strategic Marketing*, vol. 24, no. 3-4, pp. 278-294, 2016. https://doi.org/10.1080/0965254x.2015.1095226

[4]   I. Abosag, S. Roper, and D. Hind, "Examining the relationship between brand emotion and brand extension among supporters of professional football clubs," *European Journal of Marketing*, vol. 46, no. 9, pp. 1233-1251, 2012. https://doi.org/10.1108/03090561211247810

[5]   K. Frandsen, "Sports organizations in a new wave of mediatization," *Communication & Sport*, vol. 4, no. 4, pp. 385-400, 2016. https://doi.org/10.1177/2167479515588185

[6]   J. C. Machado, C. C. Martins, F. C. Ferreira, S. C. Silva, and P. A. Duarte, "Motives to engage with sports brands on Facebook and Instagram–The case of a Portuguese football club," *International Journal of Sports Marketing and Sponsorship*, vol. 21, no. 2, pp. 325-349, 2020. https://doi.org/10.1108/ijsms-06-2019-0066

[7]   J. An, C. C. Lee, and N. Kwak, "A study on content creator competencies influencing YouTube channel loyalty and viewing satisfaction," *Journal of Organizational Computing and Electronic Commerce*, vol. 33, no. 1-2, pp. 70-95, 2023. https://doi.org/10.1080/10919392.2023.2249785

[8]   B. Annamalai, M. Yoshida, S. Varshney, A. A. Pathak, and P. Venugopal, "Social media content strategy for sport clubs to drive fan engagement," *Journal of Retailing and Consumer Services*, vol. 62, p. 102648, 2021. https://doi.org/10.1016/j.jretconser.2021.102648

[9]   T. M. Nisar, G. Prabhakar, and P. P. Patil, "Sports clubs' use of social media to increase spectator interest," *International Journal of Information Management*, vol. 43, pp. 188-195, 2018. https://doi.org/10.1016/j.ijinfomgt.2018.08.003

[10]   J. Fang, L. Chen, C. Wen, and V. R. Prybutok, "Co-viewing experience in video websites: The effect of social presence on e-loyalty," *International Journal of Electronic Commerce*, vol. 22, no. 3, pp. 446-476, 2018. https://doi.org/10.1080/10864415.2018.1462929

[11]   L. Leclercq-Machado *et al.*, "Effect of corporate social responsibility on consumer satisfaction and consumer loyalty of private banking companies in Peru," *Sustainability*, vol. 14, no. 15, p. 9078, 2022. https://doi.org/10.3390/su14159078

[12]   F.-F. Cheng, C.-S. Wu, and Y.-C. Chen, "Creating customer loyalty in online brand communities," *Computers in Human Behavior*, vol. 107, p. 105752, 2020. https://doi.org/10.1016/j.chb.2018.10.018

[13]   L. Vale and T. Fernandes, "Social media and sports: Driving fan engagement with football clubs on Facebook," *Journal of Strategic Marketing*, vol. 26, no. 1, pp. 37-55, 2018. https://doi.org/10.1080/0965254X.2017.1359655

[14]   P. Capriotti and L. Ruesja, "How CEOs use Twitter: A comparative analysis of Global and Latin American companies," *International Journal of Information Management*, vol. 39, pp. 242-248, 2018. https://doi.org/10.1016/j.ijinfomgt.2018.01.003

[15]   A. Roberts, N. Roche, C. Jones, and M. Munday, "What is the value of a Premier League football club to a regional economy?," *European Sport Management Quarterly*, vol. 16, no. 5, pp. 575-591, 2016. https://doi.org/10.1080/16184742.2016.1188840

[16]   N. Kim and W. Kim, "Do your social media lead you to make social deal purchases? Consumer-generated social referrals for sales via social commerce," *International Journal of Information Management*, vol. 39, pp. 38-48, 2018. https://doi.org/10.1016/j.ijinfomgt.2017.10.006

[17]   K. K. Kapoor, K. Tamilmani, N. P. Rana, P. Patil, Y. K. Dwivedi, and S. Nerur, "Advances in social media research: Past, present and future," *Information Systems Frontiers*, vol. 20, pp. 531-558, 2018. https://doi.org/10.1007/s10796-017-9810-y

[18]   R. Wang and S. S. Sundar, "How does parallax scrolling influence user experience? A test of TIME (Theory of Interactive Media Effects)," *International Journal of Human–Computer Interaction*, vol. 34, no. 6, pp. 533-543, 2018. https://doi.org/10.1080/10447318.2017.1373457

[19]   J. Steuer, *Defining virtual reality: Dimensions determining telepresence. In Communication in the Age of Virtual Reality*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1995.

[20]   D. L. Hoffman and T. P. Novak, "Marketing in hypermedia computer-mediated environments: Conceptual foundations," *Journal of Marketing*, vol. 60, no. 3, pp. 50-68, 1996. https://doi.org/10.1177/002224299606000304

[21]   G. Wu and G. Wu, "Conceptualizing and measuring the perceived interactivity of websites," *Journal of Current Issues & Research in Advertising*, vol. 28, no. 1, pp. 87-104, 2006. https://doi.org/10.1080/10641734.2006.10505193

[22]   F.-J. Cortado and R. Chalmeta, "Use of social networks as a CSR communication tool," *Cogent Business & Management*, vol. 3, no. 1, p. 1187783, 2016. https://doi.org/10.1080/23311975.2016.1187783

[23]   Y. P. Chang and X. B. Dong, "Research on the impact of consumer interaction behaviour on purchase intention in an SNS environment: Evidence from China," *Information Development*, vol. 32, no. 3, pp. 496-508, 2016. https://doi.org/10.1177/0266666914556821

[24]   M. S. Yadav and R. Varadarajan, "Interactivity in the electronic marketplace: An exposition of the concept and implications for research," *Journal of the Academy of Marketing Science*, vol. 33, pp. 585-603, 2005. https://doi.org/10.1177/0092070305278487

[25]   K. Wise and B. Reeves, "The effect of user control on the cognitive and emotional processing of pictures," *Media Psychology*, vol. 9, no. 3, pp. 549-566, 2007. https://doi.org/10.1080/15213260701283186

[26]   J.-H. Park, "The effects of personalization on user continuance in social networking sites," *Information Processing & Management*, vol. 50, no. 3, pp. 462-475, 2014. https://doi.org/10.1016/j.ipm.2014.02.002

[27]   F. Ricotta and M. Costabile, "Customizing customization: A conceptual framework for interactive personalization," *Journal of Interactive Marketing*, vol. 21, no. 2, pp. 6-25, 2007.

[28]   J. Stromer-Galley, "On-line interaction and why candidates avoid it," *Journal of communication*, vol. 50, no. 4, pp. 111-132, 2000. https://doi.org/10.1093/joc/50.4.111

[29]   R. Avidar, "The responsiveness pyramid: Embedding responsiveness and interactivity into public relations theory," *Public Relations Review*, vol. 39, no. 5, pp. 440-450, 2013. https://doi.org/10.1016/j.pubrev.2013.05.004

[30]   P. J. Silvia, "What is interesting? Exploring the appraisal structure of interest," *Emotion*, vol. 5, no. 1, p. 89, 2005. https://doi.org/10.1037/1528-3542.5.1.89

[31]   S. J. Tedjamulia, D. L. Dean, D. R. Olsen, and C. C. Albrecht, "Motivating content contributions to online communities: Toward a more comprehensive theory," in *Proceedings of the 38th Annual Hawaii International Conference on System Sciences*, 2005: IEEE, pp. 193b-193b.

[32]   S. Kiousis, "Interactivity: A concept explication," *New media & society*, vol. 4, no. 3, pp. 355-383, 2002. https://doi.org/10.1177/146144402320564392

[33]   J. V. Pavlik and D. P. Pavlik, *New media technology: Cultural and commercial perspectives (Part of the Allyn & Bacon Series in Mass Communication)*. Boston, MA: Allyn & Bacon, 1997.

[34]   K. Ning Shen and M. Khalifa, "Exploring multidimensional conceptualization of social presence in the context of online communities," *Intl. Journal of Human–Computer Interaction*, vol. 24, no. 7, pp. 722-748, 2008. https://doi.org/10.1080/10447310802335789

[35]   K. M. Lee, "Presence, explicated," *Communication theory*, vol. 14, no. 1, pp. 27-50, 2004. https://doi.org/10.1111/j.1468-2885.2004.tb00302.x

[36]   J. B. Walther, "Interpersonal effects in computer-mediated interaction: A relational perspective," *Communication Research*, vol. 19, no. 1, pp. 52-90, 1992. https://doi.org/10.1177/009365092019001003

[37]   L.-d. Chen, M. L. Gillenson, and D. L. Sherrell, "Consumer acceptance of virtual stores: A theoretical model and critical success factors for virtual stores," *ACM SIGMIS Database: the DATABASE for Advances in Information Systems*, vol. 35, no. 2, pp. 8-31, 2004. https://doi.org/10.1145/1007965.1007968

[38]   D. R. Fortin and R. R. Dholakia, "Interactivity and vividness effects on social presence and involvement with a web-based advertisement," *Journal of Business Research*, vol. 58, no. 3, pp. 387-396, 2005. https://doi.org/10.1016/S0148-2963(03)00106-1

[39]   M. B. Horzum, "Interaction, structure, social presence, and satisfaction in online learning," *Eurasia Journal of Mathematics, Science and Technology Education*, vol. 11, no. 3, pp. 505-512, 2017. https://doi.org/10.12973/eurasia.2014.1324a

[40]   N. Cui, T. Wang, and S. Xu, "The influence of social presence on consumers' perceptions of the interactivity of web sites," *Journal of Interactive Advertising*, vol. 11, no. 1, pp. 36-49, 2010. https://doi.org/10.1080/15252019.2010.10722176

[41]   S. T. Bulu, "Place presence, social presence, co-presence, and satisfaction in virtual worlds," *Computers & Education*, vol. 58, no. 1, pp. 154-161, 2012. https://doi.org/10.1016/j.compedu.2011.08.024

[42]   W. Li, Y. Mao, and L. Zhou, "The impact of interactivity on user satisfaction in digital social reading: Social presence as a mediator," *International Journal of Human–Computer Interaction*, vol. 37, no. 17, pp. 1636-1647, 2021. https://doi.org/10.1080/10447318.2021.1898850

[43]   J. C. Richardson, Y. Maeda, J. Lv, and S. Caskurlu, "Social presence in relation to students' satisfaction and learning in the online environment: A meta-analysis," *Computers in Human Behavior*, vol. 71, pp. 402-417, 2017. https://doi.org/10.1016/j.chb.2017.02.001

[44]   A. Yeboah and E. Afrifa-Yamoah, "The influence of social presence on customer loyalty in emerging market retail industry: The mediating role of trust," *Journal of African Business*, vol. 25, no. 2, pp. 287-308, 2024. https://doi.org/10.1080/15228916.2023.2171023

[45]   R. W. Attar, A. Amidi, and N. Hajli, "The role of social presence and trust on customer loyalty," *British Food Journal*, vol. 125, no. 1, pp. 96-111, 2023. https://doi.org/10.1108/bfj-11-2021-1218

[46]   D. Cyr, K. Hassanein, M. Head, and A. Ivanov, "The role of social presence in establishing loyalty in e-service environments," *Interacting with Computers*, vol. 19, no. 1, pp. 43-56, 2007. https://doi.org/10.1016/j.intcom.2006.07.010

[47]   S. Doherty and R. Nelson, "Customer loyalty to food retailers in Northern Ireland:'Devoted loyals' or 'promiscuous switchers'?," *International Journal of Consumer Studies*, vol. 32, no. 4, pp. 349-355, 2008. https://doi.org/10.1111/j.1470-6431.2007.00641.x

[48]   M. Fuentes-Blasco, B. Moliner-Velázquez, and I. Gil-Saura, "Effect of customer heterogeneity on the relationship satisfaction–loyalty," *Revista Española de Investigación de Marketing ESIC*, vol. 18, no. 2, pp. 78-92, 2014. https://doi.org/10.1016/j.reimke.2014.06.002

[49]   J. Yoo and M. Park, "The effects of e-mass customization on consumer perceived value, satisfaction, and loyalty toward luxury brands," *Journal of Business Research*, vol. 69, no. 12, pp. 5775-5784, 2016. https://doi.org/10.1016/j.jbusres.2016.04.174

[50]   C.-W. Wu, "Destination loyalty modeling of the global tourism," *Journal of Business Research*, vol. 69, no. 6, pp. 2213-2219, 2016. https://doi.org/10.1016/j.jbusres.2015.12.032

[51]   S. J. McMillan and J.-S. Hwang, "Measures of perceived interactivity: An exploration of the role of direction of communication, user control, and time in shaping perceptions of interactivity," *Journal of Advertising*, vol. 31, no. 3, pp. 29-42, 2002. https://doi.org/10.1080/00913367.2002.10673674

[52]   E. Reategui, E. Boff, and J. A. Campbell, "Personalization in an interactive learning environment through a virtual character," *Computers & Education*, vol. 51, no. 2, pp. 530-544, 2008. https://doi.org/10.1016/j.compedu.2007.05.018

[53]   Y. J. Lee, S. Yang, and Z. Johnson, "Need for touch and two-way communication in e-commerce," *Journal of Research in Interactive Marketing*, vol. 11, no. 4, pp. 341-360, 2017. https://doi.org/10.1108/JRIM-04-2016-0035

[54]   J. Mero, "The effects of two-way communication and chat service usage on consumer attitudes in the e-commerce retailing sector," *Electronic Markets*, vol. 28, pp. 205-217, 2018. https://doi.org/10.1007/s12525-017-0281-2

[55]   J. S. Lim, Y. Hwang, S. Kim, and F. A. Biocca, "How social media engagement leads to sports channel loyalty: Mediating roles of social presence and channel commitment," *Computers in Human Behavior*, vol. 46, pp. 158-167, 2015. https://doi.org/10.1016/j.chb.2015.01.013

[56] M. Kim, Y. Chang, M.-C. Park, and J. Lee, "The effects of service interactivity on the satisfaction and the loyalty of smartphone users," *Telematics and Informatics,* vol. 32, no. 4, pp. 949-960, 2015. https://doi.org/10.1016/j.tele.2015.05.003

[57] X. Yang and Q. Yuan, "The effects of B2C interaction on customer loyalty," *Journal of Data and Information Science,* vol. 3, no. 2, pp. 78-104, 2018. https://doi.org/10.2478/jdis-2018-0010

[58] E. Park, K. J. Kim, and S. J. Kwon, "Corporate social responsibility as a determinant of consumer loyalty: An examination of ethical standard, satisfaction, and trust," *Journal of Business Research,* vol. 76, pp. 8-13, 2017. https://doi.org/10.1016/j.jbusres.2017.02.017

[59] J. F. J. Hair, R. E. Anderson, R. L. Tatham, and W. C. Black, *Multivariate data analysis.* Englewood Cliffs, NJ: Prentice Hall, 1998.

[60] R. G. Netemeyer, J. S. Boles, D. O. McKee, and R. McMurrian, "An investigation into the antecedents of organizational citizenship behaviors in a personal selling context," *Journal of Marketing,* vol. 61, no. 3, pp. 85-98, 1997. https://doi.org/10.1177/002224299706100306

[61] D. A. Kenny, B. Kaniskan, and D. B. McCoach, "The performance of RMSEA in models with small degrees of freedom," *Sociological Methods & Research,* vol. 44, no. 3, pp. 486-507, 2015. https://doi.org/10.1177/0049124114543236

[62] J. C. Nunnally and I. H. Bernstein, *Psychometric theory.* New York: McGraw-Hill, 1994. https://doi.org/10.1007/BF02301419

[63] C. Fornell and D. F. Larcker, "Evaluating structural equation models with unobservable variables and measurement error," *Journal of Marketing Research,* vol. 18, no. 1, pp. 39-50, 1981. https://doi.org/10.1177/002224378101800104

[64] F. Xu and J. T. Du, "Factors influencing users' satisfaction and loyalty to digital libraries in Chinese universities," *Computers in Human Behavior,* vol. 83, pp. 64-72, 2018. https://doi.org/10.1016/j.chb.2018.01.029

[65] Y. Bi and I. Kim, "Older travelers' E-loyalty: The roles of service convenience and social presence in travel websites," *Sustainability,* vol. 12, no. 1, p. 410, 2020. https://doi.org/10.3390/su12010410

[66] Z. Huang, Y. Zhu, A. Hao, and J. Deng, "How social presence influences consumer purchase intention in live video commerce: The mediating role of immersive experience and the moderating role of positive emotions," *Journal of Research in Interactive Marketing,* vol. 17, no. 4, pp. 493-509, 2023. https://doi.org/10.1108/JRIM-01-2022-0009

[67] C. Angelaki and I. Mavroidis, "Communication and social presence: The impact on adult learners' emotions in distance learning," *European Journal of Open, Distance and e-Learning,* vol. 16, no. 1, pp. 78-93, 2013.

[68] Y. J. Kang and W. J. Lee, "Effects of sense of control and social presence on customer experience and e-service quality," *Information Development,* vol. 34, no. 3, pp. 242-260, 2018. https://doi.org/10.1177/0266666916686820

[69] L. Weng and F. Menczer, "Topicality and impact in social media: Diverse messages, focused messengers," *PloS One,* vol. 10, no. 2, p. e0118410, 2015. https://doi.org/10.1371/journal.pone.0118410

[70] D. Gefen, "Nurturing clients' trust to encourage engagement success during the customization of ERP systems," *Omega,* vol. 30, no. 4, pp. 287-299, 2002. https://doi.org/10.1016/S0305-0483(02)00032-4