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# The Impact of E-Sports Streaming Platform Attributes on Consumer Media Loyalty

Jiafa Yang <sup>1,\*</sup>

<sup>1</sup> Department of Physical Education, Dong-A University, Busan, Republic of Korea

\* Correspondence: Jiafa Yang, Department of Physical Education, Dong-A University, Busan, Republic of Korea



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**Abstract:** Objective: This study aims to investigate the impact of key attributes of Electronic sports (e-sports) live streaming platforms on consumer media loyalty, focusing on the roles of flow experience and satisfaction. Methods: A research model integrating platform attributes (interactivity, informativeness, convenience, sense of community), flow experience, satisfaction, and media loyalty was constructed based on Social Presence Theory. Data were collected through an online survey of 378 active e-sports viewers in China and analyzed using partial least squares structural equation modeling (PLS-SEM). Results: All proposed hypotheses were supported ( $p < 0.01$ ). Interactivity exerted the strongest positive effect on flow experience ( $\beta = 0.512$ ), followed by sense of community ( $\beta = 0.425$ ) and informativeness ( $\beta = 0.404$ ). Convenience had a significant but relatively weaker effect ( $\beta = 0.276$ ). Satisfaction was confirmed as a significant antecedent of flow experience ( $\beta = 0.382$ ). Both flow experience ( $\beta = 0.450$ ) and satisfaction ( $\beta = 0.274$ ) significantly predicted media loyalty, with flow experience demonstrating a stronger influence. Conclusion: The findings demonstrate that media loyalty in e-sports streaming platforms is primarily cultivated through the enhancement of flow experience and satisfaction. Interactivity emerges as the most influential factor in fostering flow states, while sense of community and informativeness also play substantial roles. Satisfaction not only directly contributes to loyalty but also reinforces flow experience, creating a mutually reinforcing psychological cycle. This study extends Social Presence Theory into digital entertainment contexts and provides actionable insights for platform design, suggesting that emphasizing interactive features, community-building elements, and real-time informational value can effectively strengthen user retention and platform attachment.

**Keywords:** interactivity; streaming platform; media loyalty; sense of community; e-sports

## 1. Introduction

Electronic sports (e-sports) are video game-based competitions between individual players or teams. As an emerging sporting event, they are attracting a growing number of participants, particularly among younger generations [1]. As an online marketing venue, e-sports can draw substantial viewership, channeling young audiences' attention to sponsoring companies' services or products. The continuous growth in users and the emergence of larger-scale tournaments have led to a proliferation of dedicated live streaming platforms (e.g., Twitch, YouTube Live, Bilibili). This increase in platforms has, in turn, ignited intense competition for viewership. Therefore, a crucial factor for success in this competitive landscape is cultivating viewers' habitual use of a specific platform and fostering media loyalty between the platform and its audience.

Current academic research on viewers watching live streams primarily focuses on viewing motivations and decision-making [2]. However, less attention has been paid to how streaming platforms, as media conduits, attract viewers. In other words, within the internet environment, why do viewers choose one specific media platform over another to watch e-sports? Researchers recognize that viewers' feelings and behavioral intentions during live e-sports streams, such as satisfaction and flow experience, can help explain this choice. Yet, prior studies have predominantly concentrated on viewers' enjoyment and perceptions of the content itself [3], leaving the role of the platform underexplored. Consequently, understanding why viewers choose specific platforms to watch e-sports involves examining the attributes of the live streaming media platform itself (e.g., interactivity, informativeness, convenience, and sense of community). In today's competitive market, identifying and understanding these key platform attributes that attract viewers and improve their media loyalty is of paramount importance.

In the context of e-sports viewers, involvement describes the degree to which viewers believe the sport is relevant and important to their lives [4]. Perception describes the rewards viewers derive from the viewing experience relative to their expectations [5]. Unlike previous studies that focused on demographic variables such as gender and age [6], this research emphasizes the connection between the viewer and the media platform, centering on viewer involvement and perception while watching e-sports on a live streaming platform. First, we investigate how various attributes of a streaming media platform influence viewer experience under conditions of high viewer involvement. Second, we consider the viewers' perception, what they gain from watching on the platform. Finally, we examine other factors that can influence the viewer's ultimate decision. For viewers, a positive viewing experience is a condition that attracts them to watch but does not necessarily guarantee loyalty to a specific streaming media platform [7]. Therefore, this study seeks to identify the conditions that govern the relationship between positive experiences (satisfaction and flow experience) and media loyalty, thereby enhancing our understanding of how e-sports viewers develop loyalty to a streaming platform.

To address this research gap, the present study draws on Social Presence Theory and investigates how specific attributes of e-sports streaming media platforms influence media loyalty, with a focus on the younger generation of sports viewers. This demographic represents the core consumer base for e-sports, characterized by younger age and higher engagement levels compared to other groups [8].

This study aims to identify the key attributes of e-sports streaming media platforms that can attract viewers and enhance their media loyalty. The findings will provide a theoretical foundation for understanding the psychological mechanisms underlying the development of media loyalty among sports viewers. Furthermore, they will offer new perspectives for industry practitioners and researchers to improve streaming media services based on viewer engagement characteristics.

## **2. Theoretical Background**

Live streaming is an internet-based form of multimedia entertainment interaction. It delivers live, delayed, or recorded content through virtual streaming rooms, characterized by high interactivity, low participation barriers, strong entertainment value, and the ability to satisfy viewers' cognitive needs [9]. Live streaming content encompasses various domains, including e-sports, social interaction, and e-commerce [10]. In e-commerce, for instance, live streaming has emerged as a novel sales format. Unlike traditional face-to-face selling, this format enables consumers to make purchases conveniently from home through merchant explanations and price confirmation without physical participation [11].

In the context of e-sports, the rapid early development of live streaming media was closely associated with the proliferation and success of e-sports themselves [12]. Subsequently, the growth of e-sports has benefited considerably from the expansion of

live streaming platforms [13]. Sports viewers utilize live streaming platforms to watch e-sports competitions, deriving entertainment and social value. They express their engagement through likes, virtual gifts, subscriptions, and other forms of recognition. Broadcasters, in turn, leverage viewership and quality content to increase their popularity, thereby attracting more viewers and encouraging continued engagement and monetization behaviors [14]. Researchers have examined sports viewers' engagement with e-sports live streaming platforms from various perspectives, including behavioral motivation, loyalty, content characteristics, and viewing motivations [15-18].

Social presence is a concept that has evolved from traditional communication research into domains such as online education and marketing, driven by advancements in internet and information technology. It describes the extent to which viewers or consumers perceive themselves as connected and interacting with others as real, independent individuals when using media products [19]. Social presence is frequently employed to explain individuals' cognitive and affective behaviors. Within marketing research, studies on social presence have primarily focused on consumer behavioral motivation, online community building, and consumer-brand relationships [20, 21]. In live streaming media, social presence enhances viewers' positive attitudes toward the platform, their well-being, and their continued engagement by addressing their emotional, informational, and trust-related needs [20, 22].

The degree of social presence experienced by viewers and consumers in live streaming media is positively associated with the extent of their interaction with others [23]. Based on this characteristic, e-sports live streaming platforms can be considered particularly conducive environments for fostering social presence, as they offer multiple mechanisms for real-time and interactive engagement. First, viewers can interact with broadcasters through danmu (real-time comments), virtual gifts, or other features based on the visual, physical, and verbal content provided, while also engaging with fellow viewers via comment sections to share evaluations or express emotions (i.e., interactivity). Second, during viewing, audiences can obtain content and information of interest through live programming, peer conversations, or community discussions (i.e., informativeness). Third, streaming platforms deliver useful, timely, accurate, and relevant information to viewers, facilitate access through categorized content and search functions, and thereby enhance convenience by saving users' time and effort (i.e., convenience). Finally, when viewers derive benefits from their platform experience, they tend to develop positive attitudes such as a sense of belonging and collective identity, referred to as sense of community [24].

Interactivity in this study refers to the degree to which consumers engage in real-time communication and interaction with broadcasters and other viewers through features such as bullet comments during e-sports live streaming. Informativeness refers to the extent to which e-sports live streaming platforms provide viewers with valuable content that satisfies their cognitive needs. Convenience refers to the degree to which viewers can easily access desired content through features such as simple operations and personalized recommendations. It reduces the time and effort required for viewers to obtain content, making the experience more efficient and effortless. Sense of community refers to consumers' perceived sense of belonging and collective identity within the e-sports live streaming platform. The concept of "flow" is defined as "the holistic sensation that people feel when they act with total involvement" [25]. Flow is characterized as a state in which an individual is completely immersed in an activity, to the extent that time seems to pass quickly. In this study, viewing satisfaction serves as an important criterion for assessing whether online e-sports spectators are satisfied with the services provided by both the media platform and the e-sports event itself. Consistent with the focus of this research, viewing satisfaction is defined as viewers' subjective affective judgment regarding the extent to which the functions and services offered during the event fulfill their needs. Previous research has indicated a positive correlation between experience and satisfaction [26]. For online viewers watching e-sports competitions, the quality of their

viewing experience directly influences their subsequent thoughts and behaviors. Customer experience serves as an important predictor of purchasing behavior and decision-making [27]. Satisfaction also affects media loyalty. Consumers with higher levels of satisfaction demonstrate greater repurchase intention and recommendation willingness, a finding consistently supported in traditional consumer behavior research. For online viewers of professional e-sports events, higher satisfaction likely leads to increased intention to revisit and recommend the content. As e-sports events constitute spectator-oriented entertainment products, viewers engage in psychological evaluations from the moment they begin watching on media platforms, which in turn influences their media loyalty.

The research hypotheses are as follows:

H1: Interactivity positively influences flow experience.

H2: Informativeness positively influences flow experience.

H3: Convenience positively influences flow experience.

H4: Sense of community positively influences flow experience.

H5: Satisfaction positively influences flow experience.

H6: Satisfaction positively influences media loyalty.

H7: Flow experience positively influences media loyalty.

Although previous research has examined viewing intentions and motivations through the lens of social presence, relatively limited attention has been devoted to the media attributes of the platforms themselves that enable such presence. Therefore, it is necessary to conceptualize these platform attributes in ways that are directly relevant to understanding which key features contribute to viewers' development of media loyalty when using live streaming platforms to watch e-sports content.

### 3. Methodology

#### 3.1. Participants

Data for this study were collected via Wenjuanxing, a leading online survey platform in China. Preliminary screening questions were employed to confirm that participants were active viewers of e-sports content on live streaming platforms. Prior to commencing the survey, all participants were explicitly instructed not to disclose any personally identifiable information, such as phone numbers, names, or email addresses. Initially, 425 respondents completed the questionnaire. After excluding invalid responses and samples that did not meet the inclusion criteria, 378 valid responses were retained for final analysis. Descriptive statistics of the study participants are presented in Table 1.

**Table 1.** Prescriptive statistical information on participants.

Category	Item	Frequency	Percentage%
Gender	Male	280	74.07%
	Female	98	25.93%
Education	High school or below	30	7.94%
	Specialized	140	37.04%
	Undergraduate	172	45.50%
	Graduate school or above	36	9.52%
Age	18 to 24	189	50.00%
	25 to 29	162	42.86%
	30 and above	27	7.14%

#### 3.2. Research Framework

Based on Social Presence Theory, this study posits that media interactivity, informativeness, convenience, sense of community, and satisfaction are key antecedents

influencing viewers' flow experience. Furthermore, it examines the subsequent impacts of both flow experience and satisfaction on media loyalty (Figure 1).

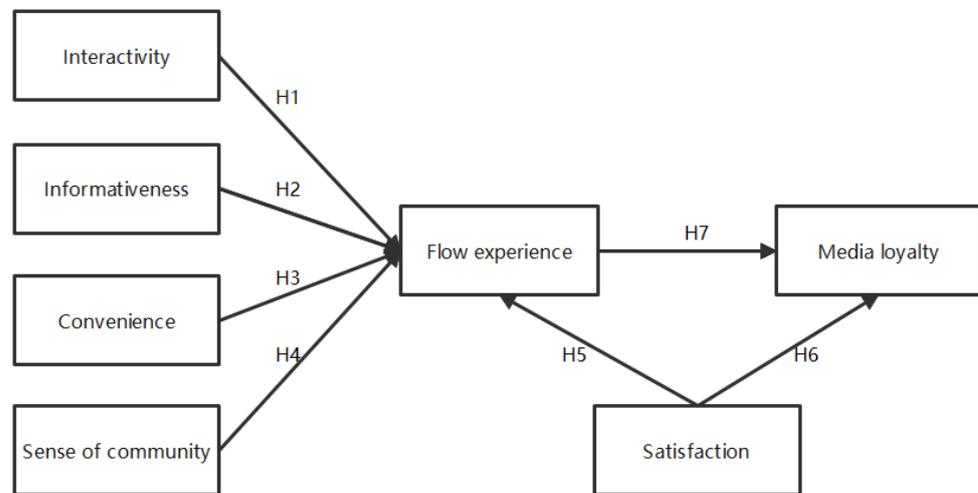


Figure 1. Hypothesized research model.

4. Results

4.1. Validity and Reliability

A two-step structural equation modeling (SEM) approach was employed in this study. First, descriptive statistical analyses were conducted using SPSS 28.0. Subsequently, SmartPLS 4.0 software was used to assess the reliability and validity of the research model. The results indicated that all standardized factor loadings ranged from 0.764 to 0.915, exceeding the recommended threshold of 0.5. The average variance extracted (AVE) values ranged from 0.789 to 0.828, also surpassing the minimum acceptable level of 0.5. Composite reliability (CR) values ranged from 0.814 to 0.912, all above the benchmark of 0.7, confirming that the constructs met the necessary reliability standards. Regarding internal consistency, Cronbach's  $\alpha$  coefficients for all variables ranged from 0.842 to 0.914, demonstrating good scale reliability. Furthermore, the square root of the AVE for each construct was greater than its correlation coefficients with other latent constructs, indicating adequate discriminant validity of the measurement model.

4.2. Hypothesis Testing

The hypothesis testing results are presented in Table 2. All seven research hypotheses were statistically supported ( $p < 0.01$ ).

Table 2. Hypothesis test results of main variables.

Hypothesis	Paths	Path Coefficient	t -value	95%CI	Testing
H1	IT→FE	0.512**	6.320	(0.353, 0.671)	Accepted
H2	IN→FE	0.404**	4.447	(0.226, 0.582)	Accepted
H3	CO→FE	0.276**	3.452	(0.119, 0.433)	Accepted
H4	SC→FE	0.425**	5.044	(0.260, 0.590)	Accepted
H5	SA→FE	0.382**	5.113	(0.236, 0.528)	Accepted
H6	SA→ML	0.274**	3.432	(0.118, 0.431)	Accepted
H7	FE→ML	0.450**	6.258	(0.309, 0.591)	Accepted

IT, interactivity; FE, flow experience; IN, informativeness; CO, convenience; SC, sense of community; SA, satisfaction; ML, media loyalty; \*\* $p < 0.01$ , \* $p < 0.05$ .

Interactivity showed the most pronounced positive effect on flow experience ( $\beta = 0.512, t = 6.320$ ). Sense of community ( $\beta = 0.425, t = 5.044$ ) and informativeness ( $\beta = 0.404, t = 4.447$ ) also demonstrated significant, though comparatively weaker, influences. Although its path coefficient was the smallest among the platform attributes, convenience still exerted a significant positive effect on flow experience ( $\beta = 0.276, t = 3.452$ ). Furthermore, satisfaction was confirmed as an important antecedent of flow experience ( $\beta = 0.382, t = 5.113$ ).

Flow experience had a stronger positive influence on media loyalty ( $\beta = 0.450, t = 6.258$ ) than the direct effect of satisfaction ( $\beta = 0.274, t = 3.432$ ). Both paths were statistically significant, indicating that flow experience and satisfaction jointly contribute to users' loyalty toward the live streaming platform.

## 5. Discussion

The primary objective of this study is to investigate how the key attributes of esports live-streaming platforms influence media loyalty through users' flow experience and satisfaction. The results support all proposed hypotheses, revealing the underlying psychological mechanisms among platform attributes, user experience, and loyalty behaviors.

First, the findings confirm that four key attributes of social media platforms are significant factors influencing consumers' flow experience. Among these, interactivity demonstrated the highest impact on flow experience ( $\beta = 0.512$ ). This result is consistent with previous research, which also identified interactivity as the most influential factor on flow experience in the context of live commerce and purchase intention [28]. This indicates that during esports livestream viewing, interactions between viewers and streamers or among viewers, through features such as real-time comments and virtual gifting, can facilitate a more immersive psychological experience.

This was followed by informativeness and sense of community. Livestream platforms engage viewers by providing professional commentary and data analysis, thereby deepening their immersion in the content. This informational layer not only enhances comprehension of the game but also adds depth to the viewing experience, sustaining users' cognitive engagement. Sense of community reflects the strong social dimension of these platforms. By implementing measures such as customized badges and interactive interfaces for different fan groups, platforms reinforce collective identity and enrich viewers' emotional engagement. In contrast, convenience exhibited the weakest influence among the four attributes, likely due to its role as a more foundational utility rather than a distinctive experiential feature. While necessary for initial access and basic usability, convenience alone may not be sufficient to induce the deep psychological immersion characteristic of flow, unless it is combined with engaging and interactive content.

Both flow experience and viewing satisfaction positively influence consumers' media loyalty. Deeper flow experiences and higher satisfaction during viewing foster strong emotional and habitual attachment to the platform, establishing a robust and stable relationship [29]. This suggests that loyalty in the esports live-streaming context is not merely a function of content availability but is heavily dependent on the quality of the psychological state experienced during consumption.

Additionally, satisfaction itself serves as a significant antecedent of flow experience ( $\beta = 0.382$ ). Satisfaction derived from platform use can enhance consumers' flow state, which in turn further increases satisfaction, collectively reinforcing media loyalty. It implies that initial gratifications can open the door to more profound immersive states, which are key to retaining users in a competitive market.

By examining how attributes of esports livestreaming platforms affect consumers' media loyalty, this study expands the perspective on esports audience research, highlights the central role of flow experience and satisfaction in digital media consumption, and

offers practical insights for platform operators and content creators. This study also has certain limitations. The data were collected from an online sample in China, with a relatively young demographic bias. Future research could examine the generalizability of these findings across different regions and cultures. Moreover, this study did not differentiate among consumers' viewing motivations. Different motivations may lead to different pathways to loyalty. Future work could conduct segmented analyses to explore how platform attributes influence viewing motives across diverse consumer groups.

## 6. Conclusion

This study reveals that media loyalty on e-sports streaming platforms is driven by a complex interplay between platform attributes and user psychology. The results demonstrate that interactivity, informativeness, sense of community, and convenience are vital in fostering a "flow experience," with interactivity emerging as the most potent driver. A key finding is the dual-pathway to loyalty: while both satisfaction and flow experience are significant predictors, the immersive state of flow exerts a stronger influence on long-term retention. Furthermore, satisfaction not only directly builds loyalty but also reinforces the flow state, creating a virtuous cycle of engagement. Theoretically, this research extends Social Presence Theory by showing that platform attachment depends on psychological immersion rather than just content. Practically, platform operators should prioritize real-time interactive tools and community-building features to deepen user involvement. Ultimately, cultivating media loyalty in the competitive e-sports market requires an integrated approach that transforms passive viewing into a highly interactive, informative, and emotionally resonant experience.

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