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Official onsite event versus unofficial streaming: Understanding the wellbeing formation in esports spectatorship

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ABSTRACT

This study explores how esports spectators' motivations lead to psychological benefits in two settings: official onsite events and unofficial online streams. The benefits examined are flow experience and subjective wellbeing. A professional research company conducted a cross-sectional survey of 400 South Korean esports consumers with 200 per viewing context. We used partial least squares structural equation modelling (PLS-SEM) to test the hypothesised relationships. The results showed that all three motivations predicted flow for onsite spectators, while only skill-based and relationship-based motivations influenced flow for online viewers. Entertainment-based motivations directly enhanced wellbeing in both contexts, while relationship-based motivations predicted wellbeing only for online viewers. Flow experience contributed significantly to wellbeing in both groups and fully mediated the skill-based motivation-wellbeing relationship. Despite these variations, multigroup analysis showed no significant differences between viewing contexts. These findings demonstrate that fundamental psychological mechanisms remain consistent across viewing contexts.

1. Introduction

Researchers have extensively investigated the positive psychological benefits linked to traditional sports spectatorship. Research demonstrates that sport event attendance improves wellbeing; for example, consuming sport media positively correlates with viewers' subjective wellbeing regardless of age (Kinoshita et al., 2024; Lin et al., 2023; Ramchandani et al., 2022). Sport spectating fulfils psychological needs such as belonging, achievement, and autonomy, which in turn enhance wellbeing outcomes (Kim & James, 2019). Within the esports context, early research suggests that watching esports can generate psychological benefits beyond entertainment value (e.g., Kim & Kim, 2020a, b; Yin et al., 2023); however, the evidence base remains limited compared to traditional, where concerns about negative psychological impacts often persist (Monteiro Pereira et al., 2022). More importantly, esports fundamentally different from traditional sport through its unique dual spectatorship model. In this ecosystem, fans often act as both content creators and spectators. They can watch official professional competitions or engage with unofficial streaming content. Indeed, unofficial streaming represents the cornerstone of esports culture (Pagáč et al., 2025).

Despite this distinction, so far no research has examined whether the way psychological benefits form differs between these two contexts. The first gap in our knowledge, therefore, addresses how different esports consumption contexts shape the relationship between viewing motivations and positive psychological outcomes. Esports consumption occurs through multiple distinct contexts that diverge from traditional sport spectatorship patterns (Pizzo et al., 2018). The critical difference may not lie in where people watch esports but rather in what content type they consume. Fans attend physical venues to watch professional teams compete in official tournaments (Sjöblom et al., 2020). At the same time, unofficial channels foster a participatory culture where fans communicate actively. This prosumer behaviour allows fans to broadcast their own gameplay; it effectively blurs the line between spectator and performer (Andrews & Ritzer, 2018). This distinction is important given that unofficial content represents the vast majority of viewership in the esports ecosystem (Kramer et al., 2021).

Furthermore, most studies examining positive psychological outcomes from esports focus on active gameplay rather than spectatorship experiences (e.g., Gao et al., 2015; Lacko et al., 2025). This represents the second significant research gap. There remains limited understanding of how passive esports spectatorship affects viewers' beneficial psychological outcomes compared to the extensive knowledge available regarding active gaming impacts. Although prior studies have examined

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wellbeing outcomes in esports contexts, these investigations have focused exclusively on active players and playing experience (e.g., Choi et al., 2024; Mechelin & Liu-Lastres, 2025; Yin et al., 2023). As a result, our understanding of how spectatorship influences viewers' wellbeing remains largely unexplored. The current study, thus, will focus on how sports consumption motivations influence two specific positive psychological outcomes of esports spectatorship: flow experience and subjective wellbeing.

By bringing these gaps together, it becomes clear that we do not yet know how the pathways from motivations to psychological benefits differ between official tournaments and unofficial online streams. The current study raised the following research questions:

RQ1: How do esports consumption motivations influence spectators' psychological benefits, specifically flow experience and subjective wellbeing?

RQ2: How do the relationships between consumption motivations and psychological benefits differ between spectators at official onsite events and viewership of unofficial online streams?

To answer the research question, the current study investigates whether motivations from the Motivation Scale for Sports Consumption (MSSC) positively predict flow experience and wellbeing, which are positive psychological benefits at the individual level. This study also compares how these pathways differ between two groups: those attending live professional tournaments and those watching unofficial online streams. The research aims are threefold: (a) to enhance theoretical understanding of how sports consumption motivations shape individual psychological outcomes in different viewing settings; (b) to provide practical insights for event organisers and streaming platforms regarding the distinct pathways to viewer loyalty; and (c) to inform evidence based strategies for improving viewer satisfaction across both official and unofficial viewing environments.

2. Theoretical background and hypothesis development

2.1. Motivation Scale for Sports Consumption in esports

The adoption of the Motivation Scale for Sport Consumption (MSSC; Trail & James, 2001) in this research is theoretically justified by its foundation in the Psychological Continuum Model, which examines sport spectatorship motives through psychological involvement and needs frameworks (Funk & James, 2001). Although the MSSC offers a strong foundation for understanding motivation, it was originally designed for traditional sports; it may not, therefore, capture every unique feature of esports. However, previous research shows that the MSSC works well in esports contexts (e.g., Hamari & Sjöblom, 2017; Pizzo et al., 2018; Sjöblom et al., 2020), establishing that traditional sport consumption frameworks effectively capture esports spectators' motivational patterns. This theoretical transferability enables examination of how motivational factors influence esports consumption behaviours within an established framework; thus, the MSSC's comprehensive dimensions effectively capture viewers' psychological and social needs within digital sport environments.

Following Barney and Pennington's (2023) categorisation, the current study uses the 3 s-order constructs (i.e., skill-based [acquisition of knowledge, skill of players], entertainment-based [escape, novelty, drama], relationship-based [social interaction, vicarious achievement] motivations) to encompass specific MSSC dimensions that drive esports spectatorship. The main reason for using the current constructs while excluding some constructs from MSSC is based on the Qian et al. (2020) results, which show that some constructs do not fully fit in the esports context (e.g., aesthetics, physical attractiveness). Aesthetics traditionally captures the beauty of physical athletic movement; however, esports players remain seated rather than performing physically with movements. Similarly, physical attractiveness matters less when fans focus on the game characters.

First, skill-based motivations comprise knowledge acquisition and player skill appreciation. Knowledge acquisition refers to spectators' desire to learn about game mechanics, strategies, and competitive techniques through observation of professional play (Rietz & Hallmann, 2023). This highlights the educational side of esports, where fans aim to improve their own performance by watching others (Barney & Pennington, 2023). Player skill appreciation involves the admiration of exceptional performance and technical mastery displayed by professional players, satisfying spectators' desire to witness excellence in competitive gaming (Barney & Pennington, 2023; Kim & Kim, 2020a, b).

Second, entertainment-based motivations encompass escape, novelty, and drama dimensions. The escape dimension shows how fans use esports to find a break from daily stress and responsibilities. (Kim & James, 2019). Novelty reflects the appeal of experiencing new content, unexpected gameplay situations, and evolving competitive narratives that keep viewing experiences fresh and engaging (Yin et al., 2023). Drama encompasses the excitement derived from competitive tension, unexpected outcomes, and the emotional intensity of high stakes matches that create compelling viewing experiences (Kim & Kim, 2020a, b; Sjöblom et al., 2020).

Third, relationship-based motivations include social interaction and vicarious achievement dimensions. Social interaction captures the communal aspects of esports spectatorship, where viewing becomes a shared social experience that facilitates connections with other fans through online platforms and live events (Barney & Pennington, 2023; Rietz & Hallmann, 2023). This dimension recognises that esports viewing often occurs within social contexts, whether through live streaming chat interactions or collective viewing experiences. Vicarious achievement refers to the psychological connection spectators develop with players or teams, experiencing success and failure through their chosen representatives in competitive play (Kim & James, 2019). This dimension reflects the identity-forming aspects of fandom, where spectators derive personal meaning and satisfaction from the achievements of others.

2.2. Flow experience in esports spectatorship and hypothesis development

The concept, originally developed by Csikszentmihalyi (2000), describes a psychological state characterised by complete absorption in an activity, where individuals experience a sense of effortless concentration and enjoyment (Ding & Hung, 2021). Flow theory suggests that this optimal experience emerges when there is a clear balance between perceived challenges and individual skills; this creates the conditions for deep engagement and intrinsic motivation (Pham et al., 2022). The theoretical framework of flow encompasses several key dimensions that define the experience. Flow states involve focused attention, clear goals, immediate feedback, a sense of control, merger of action and awareness, transformation of time perception, and autotelic experience (Huang et al., 2024). At its core, flow experience manifests through cognitive appraisal processes. This is where individuals continuously weight their capabilities relative to situational demands (Ding & Hung, 2021). When this evaluation results in perceived balance, cognitive resources become fully invested in the activity at hand, producing the characteristic absorption and enjoyment associated with flow states (Rodríguez-Sánchez et al., 2011). This theoretical understanding provides crucial insights into how spectator experiences can be optimised to promote engagement and satisfaction (Martin & Jackson, 2008).

Flow experience in esports spectatorship presents unique characteristics that emerge through environmental factors such as skill performance displays, immersive digital environments, and interactive viewing features (Chou et al., 2023; Yin et al., 2023). The interactive nature of esports platforms allows fans to watch, talk, and participate at the same time through live chat. At live events, flow grows from the energy of the crowd and the visual scale of the venue; this shared intensity helps fans feel fully immersed in the moment. This multi-layered

engagement helps create deeper psychological involvement than traditional sport (Rietz & Hallmann, 2023). Huang et al. (2024) identify three fundamental reasons for flow's applicability to esports: first, watching esports is a self-rewarding activity that brings natural pleasure (i.e., autotelic nature). Second, the competition demands intense focus; this often leads to deep mental absorption. Third, the combination of entertainment and focus makes it harder to see how much time is passing. These three fundamental characteristics reveal how flow experience manifests uniquely within esports spectatorship. Unlike traditional sport viewing, esports platforms enable viewers to seamlessly transition between watching and playing; this creates optimal challenge and skill balance as spectators apply their gaming knowledge while observing professional play (Huang et al., 2024). Moreover, flow experience serves as a vital mechanism that transforms consumption motivations into wellbeing outcomes (Kim & Kim, 2020a, b). Therefore, esports is distinct because its interactive digital features can generate more frequent and intense flow states.

2.2.1. Skill-based motivations and flow experience

Skill-based motivations encompass both knowledge acquisition and player skill appreciation. Regarding knowledge acquisition, research reveals mixed findings. Knowledge acquisition motives have been shown to influence streaming consumption patterns, particularly in strategy games (Ma et al., 2021); however, the relationship between usefulness and flow experience appears non-significant (Yin et al., 2023). This contradiction suggests informational seeking alone does not guarantee flow states. In contrast, information acquisition influences flow in traditional sports broadcasting contexts (Choi, 2022), indicating context-specific effects operate across different viewing environments.

Player skill appreciation demonstrates stronger relationships with flow across multiple contexts. The unique dimension of skill appreciation in esports spectatorship drives satisfaction through observing exceptional gameplay mastery (Qian et al., 2020). This relationship has been confirmed through studies showing player skills significantly affect flow experience in esports viewing contexts (Kim & Kim, 2020a, b). In a similar context, skill performance emerges as the strongest predictor of flow in music festival contexts (Ding & Hung, 2021), suggesting cross-context validity of this relationship. When it comes to the unofficial streaming watching experience, the influence of streamer skills on flow experiences has been particularly evident on platforms such as Twitch (Kim & Kim, 2022). The evidence indicates skill-based motivations enhance flow primarily through aesthetic appreciation of exceptional performance rather than utilitarian learning goals. Spectators derive satisfaction from witnessing mastery; therefore, vicarious competence experiences emerge as the primary pathway to flow states.

H1a. Skill-based motivations have a positive association with flow experience

2.2.2. Entertainment-based motivations and flow experience

Entertainment motivations consistently predict flow across diverse viewing contexts. Prior studies demonstrate that entertainment significantly influences flow experience in esports viewing (Yin et al., 2023). These relationships remain robust regardless of viewer involvement levels, establishing entertainment as a fundamental flow facilitator.

Escape motivations facilitate flow through temporary disengagement from daily concerns. Watching sports as a means of escaping everyday life significantly predicts streaming consumption behaviours (Ma et al., 2021). However, the quality of escape varies across media contexts; theatre audiences seek challenging escape experiences that require active cognitive engagement rather than passive consumption (Walmsley, 2011). This distinction suggests escape operates through different mechanisms depending on the entertainment medium. In the esports context, escape takes on a unique interactive form. Unlike traditional media, esports platforms allow viewers to actively participate through live chat and real-time feedback (Macey et al., 2022). This creates an 'interactive escape' where fans are not merely observing plays but actively engaging with it.

Drama emerges as a particularly powerful flow facilitator across entertainment contexts. The significant effect of drama on flow has been established in esports environments (Kim & Kim, 2020a, b). Similarly, ambiance, which encompasses dramatic atmospheric elements, predicts flow experience in music festival settings (Ding & Hung, 2021). The emotional intensity generated by dramatic moments creates the psychological arousal necessary for sustained flow states. Esports escape differs from traditional passive media consumption. Official tournaments provide collective escape through watching elite performance together; unofficial streams offer participatory escape through active participation where viewers engage via live chat and interact with content creators.

Entertainment motivations create optimal conditions for flow through multiple interconnected pathways. These dimensions provide intrinsic rewards while preventing monotony through content diversity; moreover, dramatic tension maintains viewer engagement throughout the experience (Ding & Hung, 2021). Consequently, entertainment-based motivations emerge as the most reliable and consistent flow facilitators.

H1b. Entertainment-based motivations have a positive association with flow experience.

2.2.3. Relationship-based motivations and flow experience

Social interaction enhances flow through collective viewing experiences and emotional contagion. Real-time interaction with streamers and fellow spectators significantly enhances flow experiences on streaming platforms (Kim & Kim, 2022). The influence of consumer-to-consumer interaction extends beyond digital contexts; both direct interaction and witnessing other consumers' passion significantly influence flow in physical event settings (Ding & Hung, 2021). These findings suggest emotional shared experience amplifies individual flow states through shared enthusiasm.

Vicarious achievement represents another crucial relationship pathway to flow experiences. The phenomenon of experiencing success through professional players' accomplishments has been identified as a distinct motivational dimension (Qian et al., 2020). Self-congruence between spectators (i.e., fans) and performers (i.e., players) predicts flow experience; when viewers perceive alignment with performers, they experience stronger vicarious success and consequently achieve deeper flow states (Ding & Hung, 2021).

Another point worth noticing is that trust and reliability in content creators establish important parasocial relationships that facilitate flow. Reliability significantly influences flow experience, with this effect being particularly pronounced among less involved viewers (Yin et al., 2023). Although reliability primarily concerns content trustworthiness, it creates the psychological safety necessary for viewers to fully immerse themselves in the viewing experience. As a result, relationship-based motivations operate through multiple interconnected mechanisms including social presence, emotional contagion, and parasocial connections. Modern streaming platforms successfully enable social engagement while maintaining the individual concentration necessary for flow states. When viewers develop shared connections with streamers and other audience members through collective emotional investment, relationship-based motivations create the psychological conditions (Yin et al., 2023). Given these multiple pathways, it is reasonable to assume that relationship-based motivations enhance viewers' capacity to achieve flow states during esports consumption.

H1c. Relationship-based motivations have a positive association with flow experience.

2.3. Wellbeing in esports spectatorship and hypothesis development

Sport spectator wellbeing has emerged as a critical area in sport

management research, reflecting growing recognition of sport consumption's psychological and social impacts (Inoue et al., 2020). Du et al. (2025) offer a comprehensive framework through their scoping review. Their review shows that sport spectator wellbeing encompasses multiple dimensions including life satisfaction, happiness, feelings of worthwhileness, and reduced anxiety. Their Sport Spectator Wellbeing Process Model demonstrates that wellbeing outcomes emerge through interaction between spectator motivations, consumption experiences, and post-consumption reflections.

Moving from traditional sport spectatorship to esports viewing reveals distinct wellbeing mechanisms driven by digital features. Compared to traditional sport, esports transforms spectatorship through interactive features including real-time chat participation, direct streamer-viewer communication, and collaborative content creation (Qian et al., 2020). These elements foster a participatory culture that may influence wellbeing differently by allowing direct social connection between viewers and broadcasters (Mechelin & Liu-Lastres, 2025). Kim & Kim (2020a, b) show that esports spectators gain similar wellbeing benefits to traditional sport fans. Specifically, their motivations for watching live streams link directly to subjective wellbeing. Further evidence suggests that esports consumption impacts a broad range of biological, psychological, and social factors (Schulze et al., 2023). Together, these studies confirm that traditional wellbeing frameworks apply to esports. This research defines esports spectator wellbeing following Kim & Kim (2020a, b) conceptualisation, which adapts subjective wellbeing measures to the esports context. According to Kim & Kim (2020a, b), esports spectator wellbeing encompasses "the cognitive and affective evaluations of one's life satisfaction and emotional states resulting from esports viewing experiences" (p. 4).

2.3.1. Skill-based motivations and wellbeing

Knowledge acquisition enhances positive psychological benefits (e.g., competence need satisfaction, psychological wellbeing) through cognitive stimulation and competence fulfilment in esports contexts (Liao et al., 2020). Existing literature confirmed that spectators actively seeking to understand game mechanics and strategies report higher psychological wellbeing compared to passive viewers (Mechelin & Liu-Lastres, 2025). This cognitive engagement operates through multiple pathways. First, the complex strategic nature of esports provides rich learning opportunities. Unlike traditional sports, where rules remain largely set up, esports involves frequent game updates and patches that require viewers to constantly update their knowledge. Esports fans who decode these evolving and changing professional tactics experience intellectual satisfaction that contributes to psychological health (Qian et al., 2022). Second, knowledge acquisition fulfils basic psychological needs for competence. When spectators understand why professionals make specific decisions, they experience cognitive mastery that leads to self-efficacy (Choi et al., 2024). Furthermore, continuous learning about evolving game strategies can provide ongoing intellectual challenges that prevent cognitive stagnation and maintain mental vitality (Guo et al., 2024).

Similarly, player skill appreciation generates distinct wellbeing benefits through aesthetic and inspirational experiences. Witnessing exceptional gameplay creates aesthetic appreciation that triggers positive emotions and enhances subjective wellbeing; this effect proves particularly strong in esports where skill ceilings are highly visible (Kim & Kim, 2020a, b). Several studies confirmed that regular exposure to professional gameplay increases both hedonic and eudaimonic wellbeing (Yin et al., 2023). Like knowledge acquisition, skill appreciation satisfies vicarious competence needs. Motivation to see the players skill significantly influences subjective wellbeing amongst esports spectators; viewers experience psychological benefits similar to personal achievement when observing mastery (Kim & Kim, 2020a, b). The evidence establishes that skill-based motivations enhance wellbeing through cognitive satisfaction and aesthetic pleasure; therefore, these motivations provide both immediate emotional benefits and long-term psychological growth.

H2a. Skill-based motivations have a positive association with wellbeing

2.3.2. Entertainment-based motivations and wellbeing

Escape motivations facilitate wellbeing through stress reduction and psychological restoration particularly vital for esports audiences. Existing evidence identifies escapism as a primary wellbeing mechanism; young adults use esports viewing to create psychological distance from academic and occupational stressors (Marques et al., 2023). This escape differs qualitatively from passive entertainment consumption. The immersive nature of competitive gaming creates what Kosa and Uysal (2020) term "healthy escapism", which involves active emotional regulation rather than avoidance. Furthermore, escape through esports viewing provides temporary relief that enables better stress management. The drama dimension proves equally important; Kim & Kim (2020a, b) found that drama significantly influenced both flow experience and subjective wellbeing amongst esports spectators. This finding suggests dramatic entertainment elements contribute directly to psychological health outcomes.

Novelty and entertainment create sustained emotional engagement essential for psychological vitality. The dynamic nature of esports provides continuous novelty through evolving strategies and unexpected plays (Yin et al., 2023). Existing literature verified that the entertainment dimensions enhance multiple wellbeing indicators. For example, live sporting event attendance significantly improves life satisfaction and reduces loneliness; these effects remain significant even after controlling for demographic factors (Keyes et al., 2023). Moreover, entertainment motivations facilitate recovery from mental fatigue too. The combination of excitement and relaxation restores psychological resources depleted by daily demands (Shulze et al., 2023). Entertainment motivations thus enhance wellbeing through stress relief and emotional stimulation; these mechanisms prove essential for maintaining mental health in high-stress contemporary environments.

H2b. Entertainment-based motivations have a positive association with wellbeing

2.3.3. Relationship-based motivations and wellbeing

Social interaction through esports spectatorship generates profound wellbeing benefits through community connection and belonging. Several studies demonstrate that friendship and social dimensions significantly predict subjective wellbeing amongst esports spectators (e.g., Kim & Kim, 2020a, b). These benefits operate through several mechanisms. First, synchronous viewing creates collective effervescence; spectators experience heightened emotions when sharing dramatic moments with others. Second, esports communities offer identity validation. Members find acceptance amongst peers who share their interests, fulfilling fundamental belonging needs (Wan & Nordmann, 2023). Third, digital platforms enable continuous social connection. Research confirms that live event attendance reduces loneliness significantly; importantly, these social benefits persist beyond the viewing experience itself (Keyes et al., 2023).

Vicarious achievement provides unique wellbeing pathways through team identification and collective success. Kim & Kim (2020a, b) found that achievement motivations significantly influenced subjective wellbeing in esports contexts; fans experience genuine happiness increases when their favourite players succeed. The mechanism involves psychological merger with teams; fans incorporate team achievements into their self-concept, deriving personal meaning from collective success (Kim et al., 2022; Kim & Manoli, 2023). Furthermore, group membership in esports communities predicts enhanced social efficacy and psychological health. Choi et al. (2024) identified distinct player profiles based on genre preferences; those engaged in physical enactment and sport simulation genres showed superior social health outcomes. Parasocial relationships with professional players intensify these effects; fans

develop emotional connections that provide social fulfilment despite physical distance (Liu, Zheng, Xu, & Bill, 2025). The comprehensive evidence confirms relationship motivations enhance wellbeing through social connection and vicarious achievement; these pathways prove essential for psychological flourishing in digital entertainment contexts.

H2c. Relationship-based motivations have a positive association with wellbeing

2.4. The association between flow experience and subjective wellbeing

Flow experience has been consistently identified as an antecedent of wellbeing outcomes across various contexts from tourism (e.g., Heo et al., 2010) to education (e.g., Wu et al., 2021). Unlike passive traditional sports viewing, esports platforms enable real-time engagement through chat functions, direct interaction with content, and participatory features that enhance viewer immersion (Huang et al., 2024; Sjöblom et al., 2020). These digital features create conditions where viewers transition from passive observers to active participants, strengthening the flow experience. Within the esports spectatorship domain, empirical evidence shows that flow experience directly influences viewers' subjective wellbeing through live streaming platforms (Kim & Kim, 2020a, b). Furthermore, research on online game spectators reveals that flow experience significantly predicts psychological wellbeing amongst Twitch viewers (Kim & Kim, 2022), while esports content attributes that facilitate viewing flow have been shown to enhance spectators' overall wellbeing (Yin et al., 2023). Therefore, this study hypothesises that flow experience will have a positive association with wellbeing amongst esports spectators.

H3. Flow experience has a positive impact on subjective wellbeing

2.5. Onsite official versus online unofficial spectatorship as a moderating mechanism

For the purposes of this study, "onsite official esports events" refers specifically to physical attendance at formally organised esports competitions held in designated venues such as arenas, stadiums, or convention centres. These events are characterised by official tournament structures, professional broadcasting production, and direct face-to-face interaction among spectators within a shared physical environment. Conversely, "online unofficial esports" spectatorship encompasses the consumption of esports content through digital platforms where viewers watch non-broadcaster sanctioned streams, typically including user-generated content, individual streamer broadcasts, or community-created viewing experiences accessed through platforms such as Twitch, YouTube, or similar streaming services. This distinction excludes official online broadcasts produced by tournament organisers or professional broadcasting entities.

The existing literature provides substantial evidence for consumption behaviour differences between onsite and online esports spectators (not the official and unofficial spectatorships). Wang and Shang (2023) demonstrated that onsite spectators show greater willingness to purchase and recommend gaming experiences compared to online viewers. Similarly, Sjöblom et al. (2020) investigated spectating differences between online and live attendance contexts, focusing primarily on gratification seeking patterns. Additional research by Tang et al. (2024) and Hua et al. (2023) explored motivational variations using established theoretical frameworks; however, these studies consistently treat online viewing as a homogeneous category without distinguishing between official and unofficial streaming platforms. Although the literature establishes differences between physical attendance and digital viewing, researchers have not examined how official versus unofficial online streaming contexts might create fundamentally different spectator experiences.

The difference between onsite official spectatorship and online unofficial viewing influences the model through contrasting mechanisms. Regarding social interaction, for example, fans experience collective consumption and shared emotions at onsite official events (Behrens & Uhrich, 2022). In contrast, viewers on unofficial online channels enjoy autonomous engagement and personal control (Granow et al., 2018). Concerning environmental structure, physical venues provide embodied experiences within predetermined settings (Guo et al., 2024), whereas digital platforms offer flexible and customisable viewing spaces (Jose et al., 2022). Consequently, these different consumption contexts suggests that the strength and nature of associations between MSSC, subjective wellbeing, and flow experience will vary based on whether individuals engage through official onsite attendance or unofficial online streaming:

H4. The relationships between spectator motivations, flow experience, and subjective wellbeing will vary between onsite official attendees and online unofficial viewers

3. Methodology

3.1. Data collection and participants

This study engaged a professional survey research company based in South Korea to ensure data quality and systematic collection procedures. A non-probability purposive sampling method was employed to recruit participants who had specific experience with esports spectatorship; participants were required to have attended either onsite official esports matches or watched online unofficial esports streaming content. Using screening questions, the present study prioritises to recruit the onsite official events spectatorships. Furthermore, quota sampling was implemented to achieve balanced representation across the two viewing contexts, with 200 participants allocated to each group, resulting in a total sample of 400 respondents. The sample size was justified through an a priori power analysis using G*Power software (Faul et al., 2009; Hair et al., 2022). The analysis indicated that a minimum of 137 responses would be sufficient to detect medium effect sizes ($f^2 = 0.15$) with adequate statistical power of 0.80 at a significance level of 0.05.

Prior to data collection, three experts in sport management checked the questionnaire to ensure it was accurate. We then made minor changes to the wording and formatting based on their advice. The study received ethical approval from authors' university ethics panel before commencing data collection. Moreover, all participants were explicitly informed of their right to withdraw from the study at any point without consequence.

The sample comprised 400 esports fans, with males accounting for 60.0% ($n = 240$) and females representing 40.0% ($n = 160$) of respondents. The age distribution showed that the largest group was aged 30-39 years (37.8%), followed by those aged 20-29 years (25.3%) and 40-49 years (23.3%). Regarding educational level, the majority of participants held bachelor's degrees (70.3%), with smaller proportions having completed secondary school (14.5%) or obtained postgraduate qualifications (6.3%). In terms of employment status, over half of the respondents were company employees (51.8%), with the remainder distributed across various occupations including freelancers (7.5%) and professionals (7.3%). Finally, more than half of the participants (53.8%) played esports two to three times per month or less, while 25.3% played one to two times per week (see Table 1).

3.2. Measures

This study adapted measurement items from previous esports research and made very minor revisions for the current context. Participants were required to have esports spectator experience within the past 12 months; this criterion aligns with previous research that examined participants who watched esports events through various platforms during the preceding year (Kim & Kim, 2020a, b). All constructs were measured using a seven-point Likert scale ranging from strongly

Table 1
Sample demographic profile.

Variable	Category	N = 400	Percent (%)
Gender			
	Male	240	60.0
	Female	160	40.0
Age group			
	18-19 years	13	3.3
	20-29 years	101	25.3
	30-39 years	151	37.8
	40-49 years	93	23.3
	50-59 years	35	8.8
	60-69 years	7	1.8
Educational attainment			
	Secondary school or below	9	2.3
	Secondary school completion	58	14.5
	Undergraduate student	23	5.8
	Bachelor's degree	281	70.3
	Postgraduate student	4	1.0
	Postgraduate degree	25	6.3
Employment status			
	Secondary school student	8	2.0
	University student	26	6.5
	Company employee	207	51.8
	Civil servant	17	4.3
	Self-employed	14	3.5
	Professional	29	7.3
	Sales/service worker	20	5.0
	Homemaker	14	3.5
	Freelancer	30	7.5
	Unemployed	28	7.0
	Other	7	1.8
Esports gameplay frequency			
	≤2-3 times per month	215	53.8
	1-2 times per week	101	25.3
	3-4 times per week	50	12.5
	≥5 times per week	34	8.5
	Total	400	100.0

Notes. Professional category includes doctors, lawyers, professors, researchers, and similar occupations requiring advanced qualifications. Percentages may not sum to 100.0 due to rounding.

disagree (1) to strongly agree (7).

Flow experience and subjective wellbeing were each measured using three items adapted from established scales (Kim & Kim, 2020a, b). The 3 s order motivation constructs incorporated items from recent esports studies that demonstrated strong psychometric properties (Barney & Pennington, 2023; Sjöblom et al., 2020). A pilot study with 20 South Korean esports fans resulted in minor wording adjustments; furthermore, multiple quality control questions were embedded throughout the survey to screen inattentive responses. Lastly, the current study employed partial least squares structural equation modelling (PLS-SEM) using the SmartPLS (4.1. version) software.

4. Results

4.1. Assumptions of multivariate normality

The multivariate normality assumption was assessed through multiple methods. Visual inspection using normal Q-Q plots revealed some deviations from normality across the outcome variables. Furthermore, the Shapiro Wilk test yielded significant results ($p < 0.05$) for all constructs. Examination of skewness and kurtosis values revealed that the data remained within acceptable parameters for multivariate analysis. Skewness and kurtosis values ranged from −1.202 to −0.063 and from −0.831 to 1.826 respectively, well within the recommended threshold of ±2 for structural equation modelling (Hair et al., 2022). The presence of linearity was also confirmed through ordinary least squares regression analysis, with all p values falling below 0.05. This finding supports the appropriateness of linear modelling approaches for the data.

4.2. Common methods bias

Since the current study utilised a single method of data collection, common methods bias was also tested. First, principal axis factoring (PAF) was employed to identify variation describing factors in the data. The analysis revealed that a single construct explained less than 50% of the total variance, indicating that common method bias was not a significant concern in this study (Fuller et al., 2016). Second, a full collinearity variance inflation factor (VIF) test was conducted. The initial analysis revealed that one item (SI1) from the social interaction construct exceeded the conservative threshold of 3.3; consequently, this item was removed from further analysis. After removing SI1, all remaining VIF values fell below 3.3, providing evidence that common method bias did not threaten the validity of the results (Kock & Lynn, 2012). Moreover, the outer model VIF values for all constructs remained below 5, confirming that multicollinearity was not present in the measurement model.

4.3. Outer measurement model

The measurement model was evaluated through examination of reliability (internal consistency), convergent validity, and discriminant validity. Reliability was established as all Cronbach's alpha values ranged from 0.840 to 0.943, exceeding the recommended threshold of 0.70 (Hair et al., 2022). Similarly, the composite reliability (rho_A) values ranged from 0.840 to 0.944, further confirming the internal consistency of the constructs (Hair et al., 2022). These results indicate that all measurement items consistently capture their intended constructs. Convergent validity was assessed through two criteria. First, all outer loadings exceeded the minimum requirement of 0.70, with values ranging from 0.790 to 0.957 (Hair et al., 2022). Second, the average variance extracted values for all constructs surpassed the threshold of 0.50, ranging from 0.712 to 0.898 (see Table 2).

Discriminant validity was evaluated using the Heterotrait Monotrait ratio of correlations (HTMT). As shown in Table 3, all HTMT values were below the conservative threshold of 0.85, confirming that each construct is empirically distinct from the others (Henseler et al., 2015). Therefore, discriminant validity was successfully established, indicating that all constructs measure unique theoretical concepts without excessive overlap. Overall, the measurement model demonstrates satisfactory psychometric properties.

4.4. Inner structural model

For onsite official spectatorship, all three types of motivations significantly predicted flow experience; however, the pattern differed for online streaming viewers. Specifically, skill-based motivations showed a significant effect on flow for both online streaming spectators ($\beta = 0.346$, $p < .001$) and onsite attendees ($\beta = 0.175$, $p = .025$). Furthermore, entertainment-based motivations significantly influenced flow only for onsite official match spectators ($\beta = 0.244$, $p = .003$), whereas this relationship was not significant for online unofficial viewers ($\beta = 0.186$, $p = .102$). Relationship-based motivations demonstrated consistently strong effects on flow across both groups, with comparable coefficients for onsite ($\beta = 0.310$, $p < .001$) and online ($\beta = 0.332$, $p < .001$) spectators.

Regarding direct effects on wellbeing, skill-based motivations failed to predict wellbeing in either group, suggesting that technical appreciation alone does not directly enhance esports fans' subjective wellbeing. Entertainment-based motivations, however, showed robust positive effects on wellbeing for both onsite ($\beta = 0.471$, $p < .001$) and online ($\beta = 0.463$, $p < .001$) spectators, indicating that the entertainment value of esports consistently contributes to viewer wellbeing regardless of viewing context. Interestingly, relationship-based motivations significantly predicted wellbeing only for online streaming viewers ($\beta = 0.138$, $p = .045$), while showing no effect for onsite spectators ($\beta = 0.013$, $p =$

Table 2
Outer loading, reliability, and convergent validity.

Construct	Item	M	SD	Outer Loading	Cronbach's Alpha	rho_A	AVE
Skill-based motivations							
Skills of players	SP1	5.737	1.007	0.901	0.873	0.878	0.797
	SP2	5.805	0.909	0.920			
	SP3	5.782	0.933	0.856			
Acquisition of knowledge	AK1	5.450	1.043	0.873	0.860	0.860	0.781
	AK2	5.535	1.055	0.897			
	AK3	5.400	1.136	0.881			
Entertainment-based motivations							
Escape	ESCAPE1	4.952	1.255	0.908	0.899	0.900	0.833
	ESCAPE2	5.120	1.217	0.914			
	ESCAPE3	5.105	1.204	0.915			
Novelty	NOVELTY1	4.872	1.344	0.937	0.943	0.944	0.898
	NOVELTY2	4.987	1.339	0.957			
	NOVELTY3	4.975	1.219	0.950			
Drama	DRAMA1	5.820	1.040	0.817	0.864	0.868	0.712
	DRAMA2	5.790	1.059	0.886			
	DRAMA3	5.367	1.236	0.790			
	DRAMA4	5.790	1.013	0.879			
Relationship-based motivations							
Social interaction	SI1	4.320	1.571	0.946	0.940	0.940	0.892
	SI2	4.135	1.572	0.944			
	SI3	3.970	1.668	0.943			
Vicarious achievement	VA1	5.463	1.041	0.879	0.840	0.840	0.758
	VA2	5.508	1.110	0.866			
	VA3	5.525	1.111	0.866			
Flow experience	FLOW1	5.332	1.076	0.919	0.905	0.907	0.840
	FLOW2	5.268	1.054	0.912			
	FLOW3	5.255	1.094	0.918			
Subjective wellbeing	SW1	5.290	1.109	0.883	0.863	0.865	0.785
	SW2	4.912	1.206	0.877			
	SW3	5.312	1.091	0.899			

Note. rho_A = composite reliability.

Table 3
Discriminant validity using HTMT.

Construct	SP	AK	ESCAPE	NOVELTY	DRAMA	SI	VA	FLOW	SW
SP	-								
AK	0.783	-							
ESCAPE	0.498	0.555	-						
NOVELTY	0.414	0.493	0.461	-					
DRAMA	0.770	0.603	0.467	0.358	-				
SI	0.174	0.387	0.480	0.572	0.184	-			
VA	0.665	0.564	0.493	0.409	0.572	0.304	-		
FLOW	0.563	0.609	0.565	0.534	0.443	0.464	0.620	-	
SW	0.540	0.584	0.739	0.619	0.509	0.530	0.563	0.783	-

Note. SP = skill of players; AK = acquisition of knowledge; ESCAPE = escape; NOVELTY = novelty; DRAMA = drama; SI = social interaction; VA = vicarious achievement; FLOW = flow experience; SW = subjective wellbeing. Values represent the heterotrait monotrait ratio of correlations (HTMT).

.846). This finding suggests that social connections may play a more important role in digital viewing environments. Additionally, flow experience demonstrated significant positive associations with well-being in both contexts: onsite official spectators ($\beta = 0.428$, $p < .001$) and online unofficial viewers ($\beta = 0.350$, $p < .001$; see Table 4, Figs. 1 and 2).

Although it was not the aim of the current study, the mediation analysis was conducted to uncover the insignificant results. Interestingly, flow experience fully mediated the relationship between skill-based motivations and wellbeing in both groups (onsite official: $\beta = 0.075$, $p = .041$, 95% CI [0.008, 0.151]; online streaming: $\beta = 0.121$, $p = .006$, 95% CI [0.053, 0.228]), indicating that appreciating player skills enhances wellbeing only when it generates flow states first. Also, relationship-based motivations showed full mediation through flow for onsite spectators ($\beta = 0.133$, $p < .001$, 95% CI [0.070, 0.215]) but partial mediation for online viewers ($\beta = 0.116$, $p < .01$, 95% CI [0.052, 0.205]). The results for all indirect effects are presented in Table 5.

The permutation multigroup analysis examined whether the structural relationships differed significantly between onsite official spectators and online unofficial streaming spectators (H4a to H4g). Prior to comparing structural paths, configural and compositional invariance was assessed to confirm that the measurement model operated equivalently across the two groups (Henseler et al., 2016). Permutation multigroup analysis determines whether path coefficients differ significantly between groups. This method works by randomly shuffling observations across groups and re-estimating the model multiple times to build a distribution of test statistics (Chin & Dibbern, 2010). A total of 5000 permutations were conducted and a significance threshold of $p < .05$ was applied to determine whether path coefficient differences between the two groups were statistically significant. The results revealed no significant differences in any of the hypothesised paths between the two spectator groups. These findings suggest that the underlying psychological mechanisms linking spectator motivations, flow experience, and wellbeing have a similarity regardless of whether individuals attend

Table 4
Structural model results for direct effects.

Hypothesis	Path	β	t	95% CI	Results
Group 1: Onsite official events spectatorship					
H1a	Skill-based → Flow	0.175	2.236*	[0.010, 0.317]	Supported
H1b	Entertainment-based → Flow	0.244	2.969**	[0.082, 0.402]	Supported
H1c	Relationship-based → Flow	0.310	3.927***	[0.151, 0.459]	Supported
H2a	Skill-based → Wellbeing	−0.021	0.351	[-0.130, 0.097]	Not supported
H2b	Entertainment-based → Wellbeing	0.471	6.957***	[0.331, 0.599]	Supported
H2c	Relationship-based → Wellbeing	0.013	0.194	[-0.126, 0.139]	Not supported
H3	Flow → Wellbeing	0.428	7.317***	[0.311, 0.537]	Supported
Group 2: Online unofficial streaming viewership					
H1a	Skill-based → Flow	0.346	3.886***	[0.167, 0.519]	Supported
H1b	Entertainment-based → Flow	0.186	1.636	[-0.021, 0.418]	Not supported
H1c	Relationship-based → Flow	0.332	4.209***	[0.173, 0.480]	Supported
H2a	Skill-based → Wellbeing	−0.059	0.692	[-0.225, 0.113]	Not supported
H2b	Entertainment-based → Wellbeing	0.463	4.657***	[0.244, 0.632]	Supported
H2c	Relationship-based → Wellbeing	0.138	2.001*	[0.001, 0.272]	Supported
H3	Flow → Wellbeing	0.350	4.228***	[0.186, 0.509]	Supported

Note. CI = confidence interval bias corrected. Bootstrapping results based on 5000 bootstrap samples. *$p < .05$. **$p < .01$. ***$p < .001$.

esports events in person or watch through online streaming platforms (see Table 6).

5. Discussion

A critical finding of this study is the full mediation of skill-based motivations on wellbeing through flow experience in both contexts: official onsite and unofficial online. Contrary to the expectation that understanding game skills would directly enhance wellbeing (e.g., Kim & Kim, 2020a, b; Shulze et al., 2023), this aligns with cognitive evaluation theory where skill-based motivations need flow state for psychological benefits. The desire for competence is only impactful when it is validated by an optimal experience and flow acts as the psychological mechanism that satisfies the need for competence, which in turn fosters wellbeing. Another key finding is that entertainment-based motivations significantly predicted flow experience for onsite official attendees but not for online unofficial viewers. This aligns with the distinct nature of official events described by Sjöblom et al. (2020) and the work of Ding and Hung (2021), which noted that ambiance and drama are critical predictors of flow experience. Conversely, relationship-based motivations showed a direct impact on subjective wellbeing for online unofficial viewers, but not for onsite attendees. This supports the arguments presented by Kim & Kim (2020a, b, 2022) regarding the power of digital interaction and the model of parasocial relationship (Lim et al., 2020). On unofficial channels, the social connection is often intimate and continuous; the viewer feels a direct bond with the streamer and community, which directly contributes to their subjective wellbeing (Yin et al., 2023). For onsite attendees, on the other hand, the result found out that the social aspect acts strictly as a facilitator of flow experience. Despite the differing significance levels of specific paths, the permutation multigroup analysis revealed that the strength of the structural relationships does not statistically differ between onsite official and online unofficial contexts. This result contrasts with the theoretical expectation underpinning Hypothesis 4, which predicted that these relationships would vary across viewing and match contexts based on their distinct environmental characteristics (i.e., official onsite and unofficial online). Several factors may explain this null finding. The core psychological mechanisms linking motivations to flow and wellbeing may operate similarly regardless of the viewing setting, reflecting a universal process among esports spectators. It is also possible that the measurement instruments, while reliable and valid, were not sufficiently

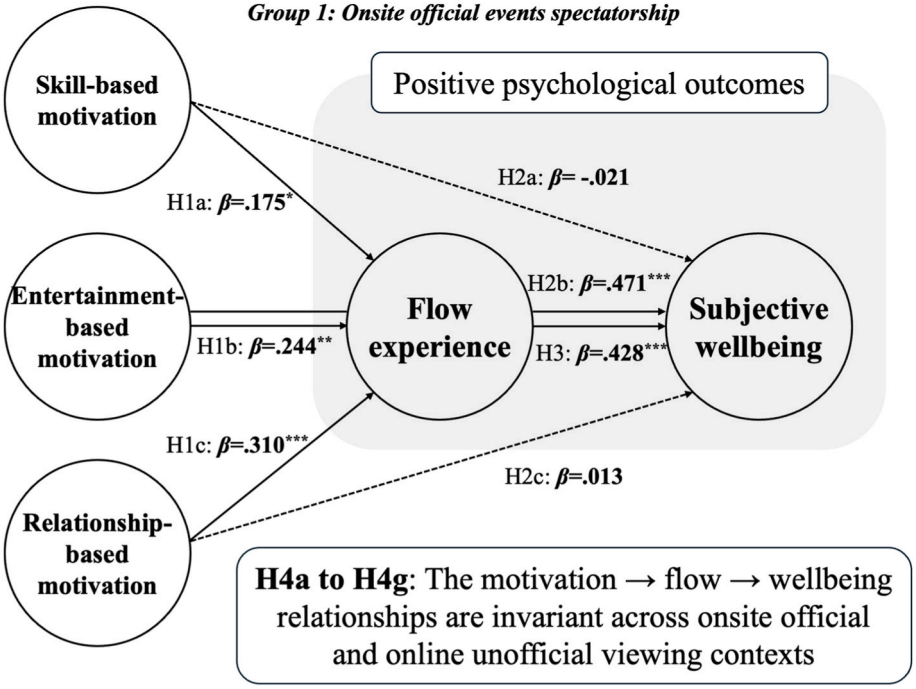

Fig. 1. The results of structural relationships of onsite official events spectatorship.

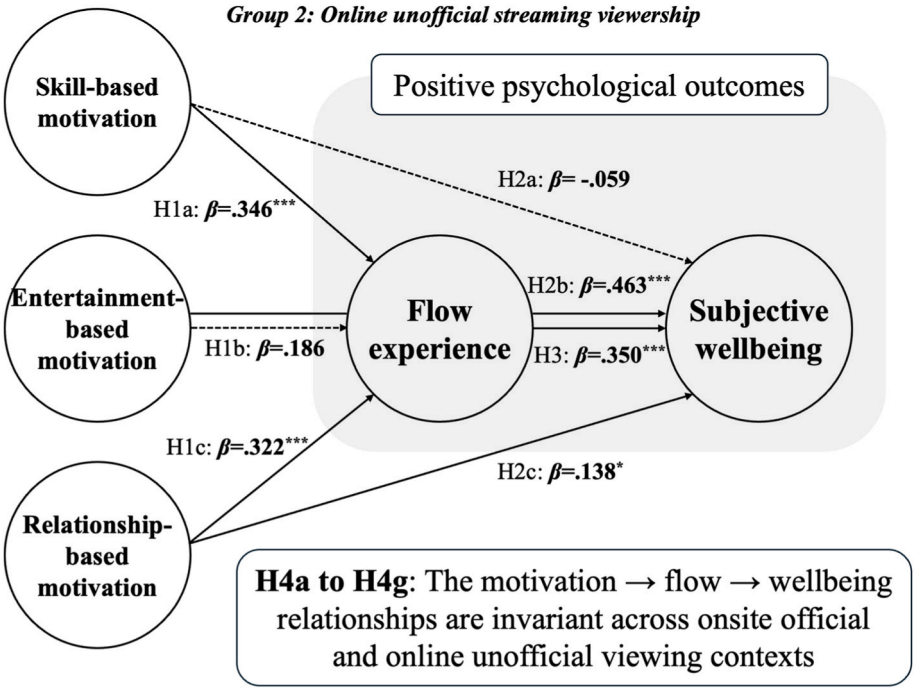

Fig. 2. The results of structural relationships of online unofficial streaming viewership.

Table 5
Indirect effects through flow experience.

Path	β	T	95% CI	Mediation type
Group 1: Onsite official events spectatorship				
Skill-based → Flow → Wellbeing	0.075	2.044*	[0.008, 0.151]	Full mediation
Entertainment-based → Flow → Wellbeing	0.105	2.916**	[0.039, 0.181]	Partial mediation
Relationship-based → Flow → Wellbeing	0.133	3.595***	[0.070, 0.215]	Full mediation
Group 2: Online unofficial streaming viewership				
Skill-based → Flow → Wellbeing	0.121	2.759**	[0.053, 0.228]	Full mediation
Entertainment-based → Flow → Wellbeing	0.065	1.445	[-0.003, 0.174]	No mediation
Relationship-based → Flow → Wellbeing	0.116	2.952**	[0.052, 0.205]	Partial mediation

Note. CI = confidence interval bias corrected. Bootstrapping results based on 5000 bootstrap samples. Full mediation occurs when the direct effect is not significant but the indirect effect is significant; partial mediation occurs when both direct and indirect effects are significant; no mediation occurs when the indirect effect is not significant. *$p < .05$. **$p < .01$. ***$p < .001$.

sensitive to capture subtle context-specific differences. Furthermore, many esports fans engage across multiple platforms, and this cross-platform behaviour may have blurred the boundaries between the two groups.

5.1. Theoretical implications

The present study can provide significant theoretical contributions in understanding esports fan behaviour and their formation of wellbeing mechanisms. First, the current study contributes to the existing knowledge by uncovering a new finding that skill-based motivations cannot generate wellbeing benefits without first producing flow states for both onsite official and online unofficial experiences. Given the consistent positive relationship between flow and wellbeing (Kim & Kim, 2022; Yin et al., 2023), this pattern suggests that cognitive engagement alone is insufficient to generate psychological benefits. This discovery extends flow theory by positioning flow not merely as an enhancing variable but as an essential transformative process in the context of the current study. It appears to convert the cognitive appreciation of skill into a tangible improvement in subjective wellbeing. This finding extends our understanding of how intellectual engagement in consuming esports translates into psychological benefits. Building on this, the results further highlight the critical full mediating role of flow in translating the skill-based motivation into wellbeing outcomes. While previous research has often treated flow as a desirable outcome, these findings establish its fundamental role as a necessary bridge between certain motivations and subjective wellbeing.

Table 6
Permutation multigroup analysis for hypothesised paths between spectator groups.

Path	β Group 1	β Group 2	Difference (G1-G2)	Mean difference	95% CI	p	Decision
H4a: Skill-based → Flow	0.175	0.346	−0.172	−0.000	[-0.217, 0.230]	0.131	No difference
H4b: Entertainment-based → Flow	0.245	0.186	0.059	−0.007	[-0.276, 0.276]	0.674	No difference
H4c: Relationship-based → Flow	0.310	0.332	−0.023	0.003	[-0.222, 0.208]	0.860	No difference
H4d: Skill-based → Wellbeing	−0.021	−0.063	0.042	−0.001	[-0.206, 0.207]	0.676	No difference
H4e: Entertainment-based → Wellbeing	0.471	0.465	0.006	−0.003	[-0.259, 0.236]	0.961	No difference
H4f: Relationship-based → Wellbeing	0.011	0.138	−0.127	0.005	[-0.191, 0.199]	0.211	No difference
H4g: Flow → Wellbeing	0.429	0.351	0.078	0.003	[-0.186, 0.208]	0.451	No difference

Note. Group 1 = onsite official events spectatorship; Group 2 = online unofficial streaming spectatorship. CI = confidence interval bias corrected. No difference indicates that the path coefficients are statistically equivalent between groups ($p > .05$).

Second, this research extends Barney and Pennington's (2023) three higher-order motivational framework (i.e., skill-based, entertainment-based, and relationship-based) that is based on MSSC by demonstrating its applicability across two distinct viewing modalities. The framework's effectiveness in explaining both onsite official and online unofficial spectatorship demonstrates theoretical robustness; showing that these motivational categories capture psychological drivers across the broader esports ecosystem rather than just formal competitive events, addressing the second research gap. This cross-cultural and cross-contextual validation strengthens the theoretical foundation of esports spectator motivation research by confirming that these higher-order constructs capture universal psychological drivers.

Third, the insignificance of the multigroup analysis in the structural paths between two groups brings another theoretical contribution. This study found out that human psychological needs and processes remain fundamentally unchanged whether people consume esports in person or through screens. The motivations that drive spectators, the flow states they experience, and the wellbeing benefits they derive follow the same psychological pathways regardless of whether they sit in an arena or watch from home. This finding can be explained through the lens of self-determination theory (Deci & Ryan, 2000), which posits that fundamental psychological needs for competence, autonomy, and relatedness are universal drivers of esports fans motivation and wellbeing (Qian et al., 2022). Previous research has established that these three basic psychological needs operate consistently across esports consumption contexts. Qian et al. (2020) demonstrated that competence, autonomy, and relatedness orientations shape online spectatorship motivation; similarly, Tang et al. (2024) found that self-determination processes drive engagement regardless of platform. This study's results suggest that both onsite and online and official and unofficial matches of esports consumption are functionally equivalent in their capacity to satisfy these needs. Therefore, the result contributes an insight that the power of the content and the internal motivations of the individual may transcend the type of games and environmental context.

5.2. Practical implications

First, reflecting the finding that entertainment motivations significantly predicted flow for onsite attendees ($\beta = 0.244$, $p = .003$) but failed to do so for online viewers ($\beta = 0.186$, $p = .102$), we recommend context-specific strategies for similar spectator populations. To leverage this strong onsite pathway, event organisers should prioritise sensory immersion. Conversely, given the non-significant relationship found in digital contexts, streaming platforms should reallocate resources toward skill-based features, which emerged as the dominant driver of flow for online audiences ($\beta = 0.346$, $p < .001$, the largest effect among the three motivational paths in this group).

Second, the discovery that skill motivations influence wellbeing solely through flow mediation (onsite: $\beta = 0.075$, $p = .041$; online: $\beta = 0.121$, $p = .006$) suggests that cognitive content alone is insufficient. Broadcasters and content creators should deliberately structure viewing experiences to facilitate flow states when showcasing player skills. Practical implementations could include removing distracting interface elements during crucial skill moments, providing focused viewing modes that minimise chat distractions during technical gameplay sequences. This approach already proves successful in traditional sports; the Korean Baseball Organisation offers “no commentary versions” of key highlights such as walk-off home runs, which fans appreciate as these allow focus on key moments without distraction.

Third, the direct effect of relationship motivations on wellbeing for online viewers ($\beta = 0.138$, $p = .045$), contrasted with the non-significant result for onsite attendees ($\beta = 0.013$, $p = .846$), highlights the unique value of digital intimacy over physical proximity within the sample studied. Consequently, platforms should prioritise features that foster parasocial bonds (e.g., membership badges, interactive tools) rather than attempting to replicate stadium-style collective behaviours. However, it should be noted that these recommendations are drawn from a specific sample of esports spectators and may not be directly transferable to all esports audiences or game genres.

5.3. Limitation and future directions

This study acknowledges several limitations that provide valuable opportunities for future research in the e-sport context. Firstly, although this study focused on motivational factors as primary drivers of psychological benefits among spectators, it did not account for other potentially significant constructs such as behavioural habits in consuming esports. For instance, research demonstrates that the amount of time spectators spends online each day significantly correlates with both flow experiences and subjective wellbeing outcomes (Shao et al., 2024). Moreover, the choice of viewing devices plays a crucial role in shaping user experience. Studies have identified significant differences in flow experiences between handheld devices such as tablets and smartphones versus PCs and laptops (Barta et al., 2021). These device-specific characteristics affect how spectators engage with esports content, as mobile and PC platforms generate different flow and game experience outcomes (Aker et al., 2020; Chou et al., 2023). Therefore, future research should incorporate these behavioural variables as potential moderators to develop a more comprehensive understanding.

Secondly, this study did not account for different game genres of esports, treating esports as a homogeneous category. Esports encompass diverse genres, and research confirms that esports genres differ significantly in their core characteristics and player requirements (e.g., Jang & Byon, 2020a, b). For example, first-person shooter (FPS) games demand quick and precise actions, while multiplayer online battle arena (MOBA) games emphasise strategic team coordination, and real-time strategy (RTS) games focus on tactical decision-making (Toth et al., 2021). Furthermore, these genre-specific differences create varying cognitive demands; FPS and MOBA games have been shown to produce different patterns of cognitive performance and engagement among players (Mancı et al., 2024). Additionally, research demonstrates that game genre acts as a significant moderator in the relationship between motivational factors and gameplay intention (Jang & Byon, 2020a, b). Therefore, future studies should employ comparative analyses across different esports genres.

Thirdly, the absence of significant multigroup differences also opens avenues for future investigation. Scholars could examine alternative moderating variables that may better differentiate spectator experiences across contexts, such as level of fandom, frequency of engagement, or prior event attendance. Additionally, employing more context-sensitive methodological approaches could help uncover the differences that cross-sectional survey designs may not capture.

CRediT authorship contribution statement

Sungkyung Kim: Writing – original draft, Visualization, Methodology, Formal analysis, Data curation, Conceptualization. **Hee Jung Hong:** Writing – original draft.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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