

Who's Watching from Home? Who's Cheering On-Site? Empirical Study on Motivations for Esports Spectatorship in Taiwan

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ABSTRACT

The reasons why esports fans watch competitions are shaped by various factors, including attachment to players (teams), uncertainty of outcomes, social interactions, knowledge acquisition, entertainment, and escapism, which drive them to watch esports competitions. Contrasted with watching esports online, being present at live events provides spectators with a unique array of experiences and sensations. This study gathered a total of 764 valid responses through questionnaires. The results indicate that spectators with weaker attachment motivations to players (teams) are more inclined to attend live events. Those with stronger social interaction motivations are more likely to participate in live events, with male spectators being more influenced by attachment and social interaction motivations when deciding whether to attend. Empirical findings also demonstrate that ‘on-site’ esports spectators are more willing to purchase and recommend gaming experiences than ‘online’ spectators, with male spectators displaying higher purchase intentions. Spectators who exhibit a greater inclination for social interaction motivations are more likely to recommend viewing, suggest gameplay, and engage in purchasing behavior. Additionally, spectators with stronger motivations related to uncertainty of outcomes, social interactions, knowledge acquisition, entertainment, and escapism exhibit a higher willingness to purchase, even as their attachment motivations weaken.

Keywords: On-site Esports Spectator, Online Esports Spectator, Motivations for Esports Spectatorship

1. INTRODUCTION

In contemporary society, individuals grapple with significant life pressures and high work demands, leading to an amplified focus on leisure activities that offer stress relief and mental relaxation. With the continuous advancement of electronic devices and internet technology, electronic sports (esports or e-sports) have emerged as a vital form of entertainment for the younger generation during their leisure hours. Esports share resemblances with traditional sports regarding of spectator motivations and consumption patterns, contributing to the gradual classification of esports as a mainstream sporting endeavor [1].

While traditional sports allow spectators to experience the enthusiasm of live attendance or casual television viewing, both online and in-person viewing of esports competitions necessitate electronic devices such as television screens, mobile phone displays, and projectors to relay the gameplay visuals of esports athletes. This raises the question of why, considering the inherently online nature of esports competitions, there is a trend toward the creation of on-site spectator experiences. What differentiates the motivations for spectatorship, resulting in varying preferences for viewing modes?

The terms 'esports,' 'gaming,' 'competitive video gaming,' and 'virtual sports' are synonymous with the concept of electronic sports [2], from now on referred to as esports. Esports possess the following characteristics: 1. A substantial reliance on technological innovation to create content. 2. Esports competitions are conducted through electronic devices within virtual environments. 3. Dependence on users' online connectivity via the internet. 4. Concrete user engagement with consumers facilitated through electronic interfaces. 5. Creating of a hybrid space intertwining physical and virtual viewing experiences [3]. Given the shared traits between esports and traditional sports, numerous scholars use comparative analysis to affirm the interconnectedness of esports and traditional sports [1, 4, 5]. Due to the similarities between esports and traditional sports, esports can be categorized as a sport. These attributes include voluntary competitions fueled by intrinsic motivations, the implementation of strict rules and organized event management, and the determination of outcomes based on victory or defeat [4, 6].

The dissemination of many esports events occurs through online streaming, with real-time broadcasting of gameplay content being a complex and costly technology. The advent of Twitch has notably transformed and accelerated the esports gaming broadcast industry [7]. Esports competitions' live events typically involve players, coaches, referees, sponsors, fans, and media, with fans collectively viewing esports matches through screens. Esports events have become an integral facet of the ecosystem, with spectator attendance contributing significantly to revenues. Notably, the "League of Legends World Championship" held at the Seoul World Cup Stadium in 2018 saw ticket sales exceeding capacity, attracting around 40,000 attendees [3]. Esports are evolving towards sportingization [8], which involves establishing regulations and norms akin to sports while infusing sporting elements (e.g., fostering competition) to enhance appeal

to the audience. A notable instance of sportingization is the surge of on-site esports event, and organized multiplayer gaming tournaments wherein individuals and teams assemble within sports arenas to engage in real-time competitive activities [9].

While traditional sports offer live attendance excitement and televised ease, online and on-site viewing of esports competitions necessitate electronic devices (television screens, mobile phone displays, projectors) to broadcast the esports players' game visuals. It prompts inquiry into the emergence of on-site spectatorship for inherently online esports competitions. What distinct motivational differences start audiences to opt for varying modes of viewing?

The viewing modes for esports predominantly comprise two categories: online platform streaming and on-site viewing through projection equipment. Watching on online platforms allows the flexibility to choose a comfortable viewing environment, free from external emotions and noises, and facilitates the simultaneous tracking of multiple matches. In contrast, on-site esports spectatorship allows one to witness favorite players (teams) up close, enjoy the experience with like-minded friends, and partake in a sense of historical significance. These motivational disparities influence the choices in spectator viewing modes. This study investigates how diverse motivations influence whether esports event spectators opt for on-site attendance, ultimately affecting behaviors such as purchasing esports-related merchandise, recommending esports viewing, and endorsing engagement in esports gaming. The study aims to investigate whether specific motivations for viewing esports competitions influence the probability of attending events in person, as well as affecting purchasing and recommendation behaviors. Specifically, the study examines how uncertainty, knowledge acquisition, entertainment, escapism, team attachment, and social motivations influence the likelihood of in-person attendance, attitudes toward purchasing relevant goods, endorsing esports viewing, and recommending participation in esports gaming.

2. LITERATURE REVIEW

Understanding the motivations of fans and consumers and what drives them to consume sports products is a crucial aspect of managing the sports industry. Earlier studies have categorized the reasons for attending sporting events into two groups for spectator sports: 1. External factors (stadium size, environment, weather, etc.) 2. Psychological factors (fans' perceptions, expectations, preferences, etc.) [10]. Esports spectator motives align with traditional sports spectator motives [1]. The following sections introduce the influence of the escapism motive, knowledge motive, player (team) attachment motive, entertainment motive, social motive, outcome uncertainty motive, and gender factors on spectatorship.

2.1 Escapism Motive

The escapism motive refers to watching a sport to escape from daily life and divert attention from routine life, and compared to traditional sports, esports can more easily

provide viewers with an escapist experience [11]. Escaping reality refers to how watching allows individuals to escape from daily life and divert attention from routine activities. The escapism motive has been shown to have a specific impact on sports spectatorship and is distinct from other emotional reasons, as it depends on the watching process. In contrast other emotional reasons are often determined by the match outcome [12]. Esports competitions can immerse viewers and give them a sense of participation, as watching others play games can make them feel like they are playing. This unique viewing experience allows spectators to deeply immerse themselves in the world depicted by esports. Hence, this study anticipates that the motivation for escapism will contribute to an increased willingness to attend live events.

2.2 Knowledge Motive

In traditional sports, the knowledge motive refers to knowledge about players and teams [12]. In the context of esports, research on esports game streaming platforms indicates that knowledge acquisition is a crucial factor influencing viewers' engagement with esports game broadcasts and videos [13]. Learning and replicating gameplay, tactics, and skills in esports is more accessible compared to traditional sports, especially considering that a significant portion of esports viewers are also gamers themselves. They share the same gaming experiences and knowledge, which allows them to appreciate and understand the skills exhibited by professional players [11]. Since many esports viewers are also players of the same games, they seek to learn from the best and enhance their mastery of the game [14, 15]. Watching esports competitions online let viewers focus on player techniques and strategies and review recorded videos for practice. Therefore, this study anticipates that the knowledge motive will decrease the willingness to attend live events.

2.3 Player (Team) Attachment Motive

Player (team) attachment motive refers to the sense of belonging viewers feel towards supported players (teams). In esports, attachment motives are heightened compared to traditional sports, as numerous professional esports players actively engage in game streaming. This dynamic foster a more profound connection between viewers and players. [11]. The development of esports has created famous players, teams, and a large fan base. Attending live esports events offers passionate fans the chance to personally support their favorite players or teams. The atmosphere at esports events is passionate, and being in the live audience enhances the excitement of watching, as fans can cheer together and feel a sense of unity [3]. Therefore, this study expects that the player (team) attachment motive will increase the willingness to attend live events.

2.4 Entertainment Motive

Watching sports is a leisure activity that brings happiness [16]. The viewing experience is an entertaining activity that brings fun and serves as a way to pass the time [12]. The atmosphere created at esports events drives viewers and offers a different way to experience esports games than online broadcasts. Live esports competitions often feature lighting, sound equipment, and large projection screens and create an immersive

and stimulating environment for viewers [14]. The heightened excitement is more evident during live events compared to online broadcasts. While novelty and curiosity were originally distinctive motivators for sports spectatorship [17], live esports events now cultivate an atmosphere that viewers appreciate in crowded event spaces [3]. Consequently, this study anticipates that the entertainment motive will contribute to an increased willingness to attend live events.

2.5 Social Motive

The social motive refers to the satisfaction derived from interacting with others. In traditional sports, interacting with peers is a crucial factor for spectating live games [11]. People often desire to socialize and be part of a group, known as a sense of belonging [18]. Social interaction is essential, and esports viewing often includes game commentary and online chat functions, allowing viewers to support their favorite players and teams [13]. Social motive is even more pronounced in live events, where viewers can watch together, discuss, and experience the event alongside a large group of like-minded individuals. This fosters a feeling of unity and provides a chance to watch the sport in a social environment [12]. Despite occurring in virtual spaces online, one should not overlook the significance of physical presence in esports events. Social interaction has long been recognized as a core motive for sports consumption, and in the context of esports, it provides an opportunity for face-to-face interaction with players who are usually only interacted with online, strengthening online communities and forming new relationships [3]. Hence, this study anticipates that the social motive will contribute to an increased willingness to attend live events.

2.6 Outcome Uncertainty Motive

Outcome uncertainty (drama) refers to the preference for and enjoyment of suspense and dramatic shifts during sports events. Esports, akin to traditional sports, incorporates uncertainty as a crucial element of the viewing experience. Many esports games incorporate randomness and information asymmetry into game design to increase tension and drama [11]. When a competition has perennial winners and losers, the demand for viewership decreases. [19]. This is 'league status effect.' The presence of perennial champions results in highly predictable outcomes, which weakens spectator interest [20]. Outcome uncertainty is considered a significant motivating factor for spectators [21]. When teams are evenly matched and outcomes remain uncertain, it draws a greater number of spectators to attend events. Therefore, this study expects that the outcome uncertainty motive will increase the willingness to participate in live events.

2.7 Gender

Researchers have often used gender as a moderating variable [1, 3]. Gender roles play a significant role as predictors of active participation in sports, with males being more likely than females to engage deeply in sports activities [22]. Compared to female spectators, male spectators demonstrate heightened emotional engagement and reactions during sports competitions. Additionally, they tend to be more involved in

sports-related consumption behaviors than their female counterparts. [23]. Research examining gender differences as moderators of spectator motives has found that male spectators score higher than female spectators in reasons like entertainment, economic factors, positive emotions, escapism, aesthetics, and self-esteem. In contrast, female spectators tend to score higher in family-related reasons [24].

3. EMPIRICAL METHODOLOGY

3.1 Questionnaire Distribution

The pretest of this questionnaire was conducted from March 18th to March 20th, 2023. The survey targeted individuals who had previously watched online (or in-person) esports competitions. The purpose was to assess the respondents' feedback and identify any areas requiring modification in the questionnaire. We collected a total of 40 valid responses, and we reviewed them to ensure the accuracy of the answers. We conducted reliability analysis, and the results met the reliability requirement, with Cronbach's α exceeding 0.7 for all dimensions.

The formal questionnaire survey was conducted from March 20th to the end of March 2023. We distributed the survey on various Facebook groups and discussion boards related to esports, including 'LOL League of Legends Friendship Platform (Taiwan),' 'League of Legends: Summoner's Rift Taiwan Community,' 'League of Legends: Summoner's Rift Taiwan-Hong Kong-Macao-Chinese Community,' 'Bahamut Legend of the Arena Discussion Zone,' 'League of Legends Discussion Zone,' and 'Arena of Valor Discussion Zone.' Before distributing each questionnaire, specific instructions regarding the considerations for filling out the questionnaire were established.

The esports referred to in this study align with the 'Battle of Victory Classification (Real-time Strategy)' esports category defined by the Chinese Taipei Olympic Committee. The study focused on 'Multiplayer Online Battle Arena (MOBA) games' with similar gameplay mechanics, including 'League of Legends,' 'League of Legends: Wild Rift,' and 'Arena of Valor.'

3.2 Questionnaire Design

We designed the questionnaire for this study with three sections: 'Motivations for Watching Online/In-person Esports Competitions,' 'Behavioral Intent Measurement,' and 'Demographic Variables.'

The measurement of motivations for watching online/in-person esports competitions is a comprehensive amalgamation of sports spectator motivation scales from various researchers. It primarily encompasses six dimensions: 'Escape,' 'Knowledge Acquisition,' 'Attachment to Players/Teams,' 'Entertainment,' 'Social,' and 'Uncertainty.' There are 30 items in this section, and the measurement employs a five-point Likert scale. Respondents are asked to rate their agreement levels on a scale of 'Strongly Disagree,' 'Disagree,' 'Neutral,' 'Agree,' to 'Strongly Agree,' with scores of

1, 2, 3, 4, and 5 respectively, aiming to assess the impact of motivations on the act of watching.

The measurement of behavioral intent [25] encompasses three primary aspects: 'Game Recommendation,' 'Encouragement to Watch,' and 'Purchase Behavior.' The measurement employs a five-point Likert scale. The scoring ranges from 'Very Likely,' 'Likely,' 'Neutral,' 'Unlikely,' and 'Very Unlikely,' corresponding to scores of 5, 4, 3, 2, and 1 respectively. This is done to measure the respondent's performance in terms of behavioral intent.

The demographic variables for this research encompass factors such as weekly gaming duration, age, gender, education level, monthly disposable income, and employment status.

3.3 Descriptive Statistical Analysis

We primarily use descriptive statistical analysis to examine the sample structure in this study, aiming to comprehend the distribution of basic information about the research subjects, including gender ratio, age distribution, education level, disposable income, and other fundamental data. This analysis explores the personal backgrounds and motivations of online and in-person esports viewers.

3.4 Reliability Analysis

We conduct reliability analysis to assess the consistency of the results obtained from the survey questions. We use Cronbach's α to assess the stability of the measurement. A higher α value indicates more excellent reliability of the questionnaire items. When the reliability coefficient is more significant than 0.7, the questionnaire items are reliable; otherwise, they are considered unreliable.

3.5 Factor Analysis

Factor Analysis Factor analysis is employed to identify underlying latent variables among numerous questionnaire items and to reduce dimensionality. This study utilizes factor analysis to confirm the dimensions of viewing motivations and to eliminate items with lower reliability. We use the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity to evaluate the suitability for factor analysis.. Principal component analysis is adopted for factor extraction using the maximum variance method.

3.6 Logistic Regression

Logistic regression is employed for predicting viewing preferences, as illustrated in Model 1.

$$\begin{aligned}
 Attend_i = & \beta_0 + \beta_1 Drama_i + \beta_2 knowledge_i + \beta_3 Escape_i + \beta_4 Attachment_i \\
 & + \beta_5 Entertainment_i + \beta_6 Social_i + \beta_7 Gender_i * Drama_i + \beta_8 Gender_i \\
 & * knowledge_i + \beta_9 Gender_i * Escape_i + \beta_{10} Gender_i * Attachment_i \\
 & + \beta_{11} Gender_i * Entertainment_i + \beta_{12} Gender_i * Social_i \\
 & + \epsilon_i
 \end{aligned}
 \quad Model\ 1$$

Attend_i represents whether the i-th viewer has attended live esports events, where 0 indicates watching online and 1 indicates attending live events.

Drama_i represents the i-th viewer's motivation of uncertainty. We expect higher uncertainty motivation led to higher chances of in-person attendance. Thus, $\beta_1 > 0$ is expected.

knowledge_i represents the i-th viewer's motivation for knowledge acquisition. Greater knowledge acquisition motivation is anticipated to decrease the likelihood of in-person attendance. Hence $\beta_2 < 0$ is expected.

Escape_i represents the i-th viewer's motivation for escapism. Higher escapism motivation is expected to decrease the likelihood of in-person attendance. Thus, $\beta_3 > 0$ is expected.

Attachment_i represents the i-th viewer's motivation of attachment to players (teams). Stronger attachment to players/teams is expected to increase the likelihood of in-person attendance. Thus, $\beta_4 > 0$ is expected.

Entainment_i represents the i-th viewer's motivation for entertainment. Greater entertainment motivation is expected to increase the likelihood of in-person attendance. Thus, $\beta_5 > 0$ is expected.

Social_i represents the i-th viewer's motivation for social interaction. Higher social interaction motivation is expected to increase the likelihood of in-person attendance. Thus, $\beta_6 > 0$ is expected.

Gender_i represents whether the i-th viewer is female, taking 1 if female and 0 otherwise. Since males are expected to amplify the effect of uncertainty motivation, $\beta_7 < 0$ is expected. Similarly, since males are expected to boost the impact of knowledge acquisition motivation, $\beta_8 < 0$ is expected. Due to the expected amplification of escapism motivation's effect in males, $\beta_9 < 0$ is anticipated. Males are expected to strengthen the impact of attachment to players/teams motivation; thus $\beta_{10} < 0$. The effect of entertainment motivation is expected to be amplified by males, leading to $\beta_{11} < 0$. Social interaction motivation is anticipated to have an amplified effect in males, resulting in $\beta_{12} < 0$.

3.7 Logistic Regression

This study employs ordinary least squares regression analysis to examine the impact of different spectator motivations on the endorsement of watching behavior, favor of playing behavior, and purchasing behavior, as illustrated in Models 2, 3, and 4. Model 2 is presented as follows.

$$\begin{aligned}
 \text{RecommendWatch}_i &= \beta_0 + \beta_1 \text{Drama}_i + \beta_2 \text{knowledge}_i + \beta_3 \text{Escape}_i + \beta_4 \text{Attachment}_i \\
 &+ \beta_5 \text{Entainment}_i + \beta_6 \text{Social}_i + \beta_7 \text{Gender}_i + \beta_8 \text{Attend}_i \\
 &+ \epsilon_i
 \end{aligned}
 \quad \text{Model 2}$$

In model 2, *RecommendWatch_i* represents the willingness of the *i*-th spectator to recommend others to watch esports competitions. ***Drama_i*** describes the *i*-th spectator's uncertainty motivation. This study anticipates that individuals with higher uncertainty motivation are more likely to recommend watching behavior; hence the expected $\beta_1 > 0$. ***knowledge_i*** represents the *i*-th spectator's knowledge acquisition motivation. It is likely that individuals with higher knowledge acquisition motivation are more inclined to engage in recommending watching behavior; hence the predicted $\beta_2 > 0$. ***Escape_i*** represents the *i*-th viewer's motivation for escapism. The study hypothesizes that individuals with higher escapism motivation are less likely to recommend watching behavior, resulting in an expected $\beta_3 < 0$. ***Attachment_i*** represents the *i*-th spectator's attachment to players/teams. The study predicts that individuals with a stronger attachment to players/teams are more likely to recommend watching behavior, leading to an expected $\beta_4 > 0$. ***Entainment_i*** represents the *i*-th viewer's motivation for entertainment. The study postulates that individuals with higher entertainment motivation are more likely to recommend watching behavior, hence the expected $\beta_5 > 0$. ***Social_i*** represents the *i*-th viewer's motivation of social interaction. It is hypothesized that individuals with higher social motivation are more inclined to recommend watching behavior, resulting in an expected $\beta_6 > 0$. ***Gender_i*** represents whether the *i*-th viewer is female, taking 1 if female and 0 otherwise. The study anticipates that males are more likely to engage in recommending watching behavior, hence the expected $\beta_7 < 0$. ***Attend_i*** represents whether the *i*-th spectator has attended live events. This study anticipates that spectators who have experienced attending live events will be more likely to recommend others to watch, thus expecting the coefficient $\beta_8 > 0$. The presentation of Model 3 regarding the recommendation to play is as follows.

RecommendPlay_i

$$\begin{aligned}
 &= \beta_0 + \beta_1 \text{Drama}_i + \beta_2 \text{knowledge}_i + \beta_3 \text{Escape}_i + \beta_4 \text{Attachment}_i \\
 &+ \beta_5 \text{Entainment}_i + \beta_6 \text{Social}_i + \beta_7 \text{Gender}_i + \beta_8 \text{Attend}_i \\
 &+ \epsilon_i
 \end{aligned}$$

Model 3

In model 3, ***RecommendPlay_i*** represents the willingness of the *i*-th spectator to recommend others to play esports. ***Drama_i*** represents the *i*-th spectator's uncertainty motivation. This study anticipates that individuals with higher uncertainty motives are more likely to recommend gameplay behavior, thus expecting $\beta_1 > 0$. ***knowledge_i*** represents the *i*-th spectator's knowledge acquisition motivation. This study anticipates that individuals with higher knowledge acquisition motives are more likely to recommend gameplay behavior, thus expecting $\beta_2 > 0$. ***Escape_i*** represents the *i*-th viewer's motivation for escapism. This study predicts that individuals with higher escapism motives are less likely to recommend gameplay behavior, thus expecting $\beta_3 < 0$. ***Attachment_i*** represents the *i*-th spectator's attachment to players/teams. This study anticipates that individuals with higher attachment to players/teams motives are more likely to recommend gameplay behavior, thus expecting $\beta_4 > 0$. ***Entainment_i*** represents the *i*-th viewer's motivation for entertainment. This study anticipates that individuals with higher entertainment motives are more likely to recommend gameplay

behavior, thus expecting $\beta_5 > 0$. **Social_i** represents the i-th viewer's motivation for social interaction. This study anticipates that individuals with higher social motives are more likely to recommend gameplay behavior, thus expecting $\beta_6 > 0$. **Gender_i** represents whether the i-th viewer is female, taking the value of 1 if female and 0 otherwise. This study anticipates that males are more likely to recommend gameplay behavior, thus expecting $\beta_7 < 0$. **Attend_i** represents whether the i-th spectator has attended live events. This study expects that audiences who have experienced live attendance are more likely to recommend gameplay behavior, thus anticipating $\beta_8 > 0$. The presentation of Model 4 regarding the purchase intention is as follows.

$$\begin{aligned} \text{Purchase}_i = & \beta_0 + \beta_1 \text{Drama}_i + \beta_2 \text{knowledge}_i + \beta_3 \text{Escape}_i + \beta_4 \text{Attachment}_i \\ & + \beta_5 \text{Entainment}_i + \beta_6 \text{Social}_i + \beta_7 \text{Gender}_i + \beta_8 \text{Attend}_i \\ & + \epsilon_i \end{aligned} \quad \text{Model 4}$$

In model 4, **Purchase_i** represents the willingness of the i-th audience member to purchase esports-related products. **Drama_i** signifies the i-th audience member's uncertainty motivation. This study expects that individuals with higher uncertainty motivation will be more likely to engage in purchasing behavior, hence anticipating $\beta_1 > 0$. **knowledge_i** represents the i-th audience member's knowledge acquisition motivation. The study hypothesizes that individuals with higher knowledge acquisition motivation will be more likely to engage in purchasing behavior, thus anticipating $\beta_2 > 0$. **Escape_i** stands for the i-th audience member's escapism motivation. The study predicts that individuals with higher escapism motivation will be more likely to engage in purchasing behavior, resulting in $\beta_3 < 0$. **Attachment_i** represents the i-th audience member's attachment motivation to players/teams. This research expects that individuals with higher attachment motivation to players/teams will be more likely to engage in purchasing behavior, hence $\beta_4 > 0$. **Entainment_i** signifies the i-th audience member's entertainment motivation. The study hypothesizes that individuals with higher entertainment motivation will be more likely to engage in purchasing behavior, leading to $\beta_5 > 0$. **Social_i** represents the i-th audience member's social motivation. The study anticipates that individuals with higher social motivation will be more likely to engage in purchasing behavior, resulting in $\beta_6 > 0$. **Gender_i** represents whether the i-th viewer is female, taking 1 if female and 0 otherwise. This study anticipates that males are more likely to engage in purchasing behavior, thus expecting $\beta_7 < 0$. **Attend_i** represents whether the i-th spectator has attended live events. This study predicts audiences who have experienced live attendance are more likely to engage in purchasing behavior, thus anticipating $\beta_8 > 0$.

4. EMPIRICAL RESULTS

Firstly, this study analyzes the personal demographic information of online and on-site esports spectators. Secondly, it examines the factors influencing spectator motivations. Following that, we use predictive analysis to confirm the factors influencing the choice of viewing mode. Subsequently, the study compares the

differences in behavioral intentions among spectators of different viewing modes. Lastly, it analyzes the variations in behavioral purposes among spectators with varying motivations for viewing.

4.1 Descriptive Statistics Analysis

The study collected 769 valid questionnaires and obtained information on five aspects of respondents' primary personal data to understand the demographic composition and characteristics of the questionnaire respondents. The following provides an analysis:

The number of male respondents was 586, accounting for 76.2%, while the number of female respondents was 183, accounting for 23.8%. The age distribution is concentrated in the 19-24 age group and the 25-34 age group, accounting for 59.3% and 29.6% of the sample, respectively. Together, these two groups make up 88.9% of the total sample. The remaining age groups, in order, are below 18 years old, 35-44 years old, and above 45 years old, accounting for 8.1%, 2.9%, and <0.1% of the sample, respectively.

Regarding education level, the majority had completed tertiary education, accounting for 73.3%. The next most common education level was high school or below, at 16%, followed by graduate school and above, at 10.7%. Regarding current employment status, full-time students and full-time workers were the main categories, accounting for 39.4% and 34.7% of the sample, respectively. The remaining types, in order, were students with part-time jobs, part-time workers, and unemployed, accounting for 16.5%, 4.3%, and 5.1% of the sample, respectively.

The study categorized spectatorship into three modes: online viewing via platforms (e.g., YouTube, Twitch, Douyu TV, Afreeca TV, Niconico, etc.), offline attendance, and both. Among the collected data, 642 participants engaged in online platform viewing, accounting for 83.5% of the sample; 122 participants involved in both online and offline modes, accounting for 15.9%; and 5 participants attended offline events, accounting for 0.7%. For subsequent analysis, the study combined the "both" and "offline attendance" groups into a category termed "attended offline events" to facilitate further analysis. The weekly gaming duration revealed that most respondents participating in the esports spectator motivation study had a habit of playing esports games, with 95.4% playing for more than 2 hours per week. The relevant figures are listed in Table 1.

Table 1 : Descriptive statistics

Items	Category	Observations	Percentage (%)
Gender	Male	586	76.2%
	Female	183	23.8%
Age	Under 18	62	8.1%
	91-24	456	59.3%
	25-34	228	29.6%
	35-44	22	2.9%
	Above 45	1	<0.1%
Education Level	High school or below	123	16%
	College or University	564	73.3%
	Graduate School	82	10.7%
Employment Status	full-time students	303	39.4%
	students with part-time jobs	127	16.5%
	full-time workers	267	34.7%
	part-time workers	33	4.3%
	Unemployment	39	5.1%
Spectatorship Modes	Online	642	83.5%
	Both online and On-Site	122	15.9%
	On-Site	5	0.7%
Weekly Gaming Duration	None	2	0.3%
	Under 2 Hours	31	4%
	2-5 Hours	174	22.6%
	5-10 Hours	179	23.3%
	10-20 Hours	209	27.2%
	More than 20 Hours	174	22.6%

Notes: Total samples are 769

4.2 Analysis of Spectator Motivations

Through factor analysis, the motivational aspects of watching were confirmed, and six items with low consistency were excluded. The motivation scale for this study consists of 24 questions and undergoes factor analysis. The Cronbach's alpha value obtained after revising the items was 0.904. The result of Bartlett's sphericity test was 11052.961, and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.9. After factor analysis and retaining items with consistent response data, six main factors were extracted, and the factor loadings of each item exceeded 0.4, indicating good validity. The relevant factor analysis values are presented in Table 2.

Table 2: Factor Analysis Results(n=769)

Factor	Eigenvalues	% of Variance	Cumulative % of Variance	Cornbach's α
Attachment	8.01	33.40%	33.40%	0.91
Uncertainty of Outcomes	2.92	12.19%	45.59%	0.89
Social Interactions	1.90	7.92%	53.52%	0.83
Knowledge Acquisition	1.71	7.15%	60.68%	0.9
Entertainment	1.53	6.39%	67.07%	0.76
Escapism	1.11	4.63%	71.70%	0.68

4.3 Prediction of Spectating Motivations and On-Site Attendance

The logistic regression statistical method was employed to examine whether gender and watching motivation influence whether esports viewers attend live events or choose to watch online only. The results are presented in Table 3.

Table 3: Logistic Regression Results (The test of model 1)

	Coefficient (Standard Deviation)	Wald
Intercept	-1.79(0.11)	251.24***
Attachment	-0.6(0.33)	3.22*
Uncertainty of Outcomes	-0.21(0.3)	0.51
Social Interactions	0.93(0.32)	8.4***
Knowledge Acquisition	-0.11(0.33)	0.1
Entertainment	0.44(0.33)	1.79
Escapism	-0.37(0.3)	1.51
Gender*Attachment	0.68(0.26)	6.67***
Gender*Uncertainty of Outcomes	0.06(0.22)	0.07
Gender*Socia Interactions	-0.42(0.23)	3.46*
Gender*Knowledge Acquisition	0.23(0.26)	0.79
Gender*Entertainment	-0.25(0.25)	0.97
Gender*Escapism	0.27(0.22)	1.44

Notes: The dependent variable $Attend_i$ is a dummy variable, where 0 indicates i-th viewer only watching online, and 1 indicates attending live events. $Gender_i$ is a dummy variable, taking the 1 if i-

th viewer is female and 0 otherwise. *, **, and *** are, respectively, significant at the 0.1, 0.05 and 0.01 levels. The total samples are 769.

Viewers with weaker player (team) attachment motivation are more inclined to choose to attend live events as their mode of watching. In contrast, those with stronger social motivation are more likely to opt for attending live events.

Viewers with stronger player (team) attachment motivation find their needs satisfied through online interactions, such as leaving comments and engaging in live chats with players (teams). Furthermore, those with a stronger motivation for player (team) attachment tend to refrain from attending live events if their preferred players (teams) are not involved in the competition. Their attendance is likely limited to live matches where their favorite players (teams) are actively participating.

Viewers with solid social motivation enjoy interacting, discussing, and sharing esports content with other viewers. Attending live events provides a more direct platform for social interaction and allows viewers to meet friends and family.

Regarding the interaction questions, 'Gender and Attachment Motivation' and 'Gender and Social Motivation' influence whether viewers choose to attend live events. The results confirm that viewers with stronger attachment motivation are less likely to choose to attend live events as their mode of watching, and females are more influenced by attachment motivation, leading them to avoid to attend live events. On the other hand, viewers with stronger social motivation are more likely to choose attending live events, with males being more influenced by social motivation in their decision to participate in live events.

4.4 Analysis of Spectating Motivations and Behavioral Intentions

Through linear regression analysis, the correlations between "motivation for watching and recommending esports viewing behavior," "motivation for watching and recommending esports gaming behavior," and "motivation for watching and willingness to purchase esports-related products" were separately examined. The results are presented in Table 4.

Table 4: OLS Results (Test of Model2, Model3 and Model4)

	Recommend Others to Watch	Recommend Others to Play	Willingness to Purchase
Intercept	3.49(0.11)***	3.23 (0.11) ***	2.28(0.13)***
Attachment	0.11(0.03)***	0.01(0.03)	-0.7(0.04)*
Uncertainty of Outcomes	0.22(0.36)***	0.29 (0.03) ***	0.24(0.04)***
Social Interactions	0.41(0.03) ***	0.46(0.03) ***	0.41(0.04)***
Knowledge Acquisition	0.22(0.03) ***	0.17(0.03) ***	0.07(0.04)*
Entertainment	0.20(0.03) ***	0.31(0.03) ***	0.23(0.04) ***
Escapism	-0.10(0.03) ***	0.14(0.03) ***	0.15(0.04)***
Attend	0.12(0.09)	0.22(0.09) ***	0.49(0.11)***
Gender	0.06(0.08)	0.02(0.08)	0.22(0.1)**

Notes: The standard deviations is in parentheses. The dependent variable $Attend_i$ is a dummy variable, where 0 indicates i-th viewer only watching online and 1 indicates attending live events. $Gender_i$ is a dummy variable, taking 1 if i-th viewer is female and 0 otherwise. *, **, and *** are, respectively, significant at the 0.1, 0.05 and 0.01 levels. The total samples are 769.

The above empirical results indicate that when viewers have stronger motivations in ‘Uncertainty of Outcomes,’ ‘Attachment,’ ‘Social Interactions,’ ‘knowledge Acquisition,’ ‘Entertainment,’ and ‘Escapism,’ they are more likely to recommend others to watch esports matches.

When viewers have stronger motivations in ‘Uncertainty of Outcomes,’ ‘Social Interactions,’ ‘knowledge Acquisition,’ ‘Entertainment,’ and ‘Escapism,’ they are more likely to recommend others to play esports games. Additionally, the mode of viewing also affects their intention to guide others to play esports games, with on-site viewers having a higher willingness to guide others to play esports games.

When viewers have stronger motivations in ‘Uncertainty of Outcomes,’ ‘Social Interactions,’ ‘knowledge Acquisition,’ ‘entertainment,’ and ‘Escapism,’ they are more likely to purchase esports products. The mode of viewing and gender also impact their purchasing intention, with on-site viewers showing a higher willingness to buy esports-related products. Male viewers have a higher purchasing intention than female viewers. Viewers with stronger ‘attachment’ motivation have a lower sense to buy because they primarily favor the players (teams) themselves and do not have a solid attachment to esports peripheral products.

5. CONCLUSION

The ‘player (team) attachment motivation’ and ‘social Interactions motivation’ have a significant impact on the choice of viewing mode, and there are gender-based motivational differences in viewing mode selection. Viewers with stronger attachment

motivation to players (teams) are less likely to choose to participate in live events, and women are more influenced by attachment motivation, resulting in a higher tendency to not attend live events. This may be since viewers with stronger attachment motivation can satisfy their needs through online comments and live interactions with players (teams). Additionally, viewers with stronger attachment motivation are more likely to abstain from attending live events if their favorite players (teams) are not present, possibly only participating in live events where their favorite players (teams) are involved. Viewers with stronger social interaction motivation are more likely to choose to attend live events, and men are more influenced by social motivation, leading to a preference for attending live events. This is possibly because viewers with a strong social motivation derive pleasure from interacting with other viewers, engaging in discussions, and exchanging esports content. Attending live events offers a more direct social opportunity, serving as an occasion for viewers to meet with friends and family.

There are significant differences in the behavior intentions of esports viewers in terms of their mode of viewing (online/on-site), gender, and performance in behavior choices. Live esports viewers show higher intentions in 'recommending gameplay' and 'purchasing behavior' than online viewers, with male viewers having a higher willingness to purchase than female viewers.

Esports viewers with stronger motivations in 'uncertainty of outcomes,' 'attachment,' 'social interaction,' 'knowledge acquisition,' 'entertainment,' and 'escapism' are more likely to have higher intentions to "recommend others to watch esports matches." Therefore, if you want to increase the likelihood of viewers suggesting others to watch esports matches, you can set up matchups between teams of similar skill levels in esports competitions and invite players (teams) with high fan engagement to participate, thus enhancing the social interaction, entertainment, and knowledge aspects of esports competitions by arranging hosts and event activities.

Esports viewers with stronger motivations in 'uncertainty of outcomes,' 'social interaction,' 'knowledge acquisition,' 'entertainment,' and 'escapism' are more likely to have higher intentions to 'recommend others to play esports games.' Additionally, on-site viewers are more likely to recommend others to play esports games than online viewers. Therefore, to increase the likelihood of viewers recommending others to play esports games, you can set up matchups between teams of similar skill levels in esports competitions and enhance the social, entertainment, and knowledge aspects of esports competitions through the arrangement of hosts and event activities.

Esports viewers with stronger motivations in 'uncertainty of outcomes,' 'social interaction,' 'knowledge acquisition,' 'entertainment,' and 'escapism' are more likely to have higher intentions to purchase esports products. However, viewers with stronger 'attachment' motivation have lower choices to purchase, as they primarily favor the players (teams) themselves and do not have strong attachments to esports peripheral products. Male viewers have a higher intention to purchase esports products than female viewers. Therefore, to increase the likelihood of viewers purchasing esports-related

products, you can set up matchups between teams of similar skill levels in esports competitions and enhance the social interactions, entertainment, and knowledge aspects of esports competitions by arranging hosts and event activities. Adding more elements related to players (teams) in-game products, such as player (team) merchandise and virtual in-game items and cosmetics, can also increase viewers' willingness to purchase, and different marketing strategies can be tailored for female viewers in the design and marketing of esports-related products.

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