Exploring Esports Spectator Motivations through a Market Segmentation Approach

Ju Young Lee[1], Aaron Alston[1], Minkyo Lee[2], Jinwook Chung[3], and Jun-sung Kim[4]

[1]Department of Health & Human Performance, The Citadel – The Military College of South Carolina

[2]Department of Educational Psychology, Leadership, and Higher Education, University of Nevada, Las Vegas

[3]Department of Physical Education, Sport and Human Performance, Winthrop University

[4]Department of Sports Health Management, Hanyang Women's University

Abstract

Previous studies have provided valuable insights into understanding esports consumer motivations. However, their findings are limited due to constraints in the motivation scales used. To address this, the current study adopted the Motivation Scale of Esports Spectatorship (MSES) developed by Qian et al. (2019) to examine esports spectators' motivations across different segmentation variables, specifically esports genres and psychological attachments. This study focused on three esports genres: First-Person Shooters (FPS), sports-based games, and Multiplayer Online Battle Arenas (MOBA). Participants were grouped into three clusters—heavy, moderate, and light esports consumers—based on K-means cluster analysis. A MANOVA was conducted with a 3 (esports genres) × 3 (esports consumer clusters) design to examine motivational factors. Findings reveal that esports consumers have varied needs and desires for spectating based on genre and psychological attachment levels. Notably, heavy esports consumers tend to maintain consistent motivations across game genres, while moderate consumers, especially those who watch MOBA and sports games, exhibit [lower and diminishing] motivations over time. The results suggest that esports genre type and engagement level play critical roles in shaping spectator motivations, underscoring the importance of developing marketing strategies tailored to diverse consumer segments.

Keywords: esports, motivation, involvement, segmentation, genre

1. Introduction

As esports continues to develop and establish itself as an important sector within the sports industry, research on esports consumers is actively progressing (e.g., Pizzo et al., 2022). To understand this trend, exploring the reasons why people watch esports has become an important area of study (e.g., Watanabe et al., 2021). Among various approaches, some studies have focused on the similarities and differences between esports and traditional sports (e.g., Brown et al., 2017). For instance, there are studies comparing the motivations of esports audiences with those of traditional sports audiences (Rogers et al., 2022). In terms of viewing motivation, like traditional sportss, esports spectators also travel to large indoor (e.g., State Farm Arena) and outdoor stadiums (e.g., Arthur Ashe Stadium) to watch domestic and international professional esports tournaments (e.g., Fortnite World Cup). For example, the League of Legends (LoL) championship has taken place at large arenas, like Madison Square Garden in New York City and the State Farm Arena in Atlanta (Qian et al., 2019).

Similar to established traditional sports, data related to esports viewership also shows significant potential and impressive metrics (Qian et al., 2019). During the 2015 LoL World Championship, 334 million viewers watched the event through YouTube, Facebook, and Twitch. Qian et al. (2020) also highlighted that concurrent viewership reached 4.2 million. This tournament, which has only been around for about 10 years, demonstrates that esports is becoming a fully developed industry, with sustainable profitability and popularity in the global market. Recent data shows even faster growth. Last year, the 2023 LoL World Championship set an all-time record with 6.4 million peak concurrent viewers and 146.8 million hours watched (DeSena, 2023). This surpassed the world record previously held by the 2021 Free Fire World Series event in Singapore, which had the highest viewership in esports history. This growth can be attributed to the majority of younger generations who enjoy online gaming, whether socially or competitively (Hong, 2022; Smith et al., 2019).

While there are various stakeholders involved in attracting consumers to esports, such as developers, sponsors, and tournament organizers, the key element in this growing market is the teenage and young adult professional players, whose age group closely matches that of the primary consumers (Hong, 2022). To better understand this young consumer base, previous studies have investigated various factors that influence esports viewership. These include consumer behavior-related factors, such as the types of games they watch and the frequency of gameplay. However, because many studies adapted and modified motivation scales originally designed for traditional sports fans, they may not have fully captured the unique factors that motivate esports audiences. Therefore, this study aimed to bridge this gap by utilizing a motivation scale tailored specifically for esports, the Motivation Scale of Esports Spectatorship (MSES), to explore how esports viewers' motivations relate to the genre of the game and their level of psychological attachment.

Esports Motivations

Competitive computer gaming began in South Korea and developed over time, expanding globally and growing for more than a decade (Manci et al., 2024). Since esports began to be recognized as a major sports industry, research into it has become more active, with many studies comparing it to traditional sports to better understand its consumers (e.g., Pizzo et al., 2018). Researchers have explored why people watch and follow esports, analyzing both the overlapping and distinct elements between esports and traditional sports. For example, Pizzo et al. (2018) examined the differences in viewer motivation between esports and traditional sports. Similar to traditional sports, esports also feature various types of games developed by gaming companies, and a few of these games have emerged as major esports

competitions that attract large audiences. These competitions can be broadly categorized into three main genres: FPS (First-Person Shooter), sports-based games, and MOBA (Multiplayer Online Battle Arena). Ma et al. (2021) investigated the differences between esports genres such as FPS, sports-based games, and MOBA. When comparing video game genres, research has examined the cognitive effects of FPS and MOBA games (Manci et al., 2024). By design, FPS games offer a first-person perspective, typically using fictional or realistic firearms. The primary goal in this genre is to skillfully identify and neutralize enemy targets (NPCs/players) through shooting. This requires fast reaction times, eye-hand coordination, and inhibitory control skills (Oscardio et al., 2023). In relation to fast reaction control, Donovan et al. (2023) mentioned the technique of 'flicking,' which involves quickly adjusting one's aim to find and shoot a target (p. 2). This rapid reaction demands fine motor skills, which are often cited as one reason why esports should be recognized as a form of sport (Jenny et al., 2017).

In the case of MOBA games, these games are played in teams, where each team member combines their character's abilities to strategically battle against the opposing team and win. In addition to neutralizing enemy players, these games often require achieving in-game objectives such as territory capture or flag capture. Competitive MOBA matches tend to last longer than FPS matches, requiring endurance, tactical execution, teamwork, and various other skills. A 'whole-game plan' must be developed through practice with teammates (Manci et al., 2024, p. 6). This also demands cognitive abilities such as memory, particularly when developing in-game characters and facing other players and their characters (Manci et al., 2024).

According to Choi et al. (2020), sports video games fall under the simulation genre. This genre also includes alternative sports like driving/racing games. The overall objective of these games is similar to real sports, where players use teams or individual characters to defeat their opponents. The study found data on the impact of sports simulation games on cognitive development. For example, one of the most popular video game franchises is the Madden Football series developed by Electronic Arts (Jenny & Schary, 2014). This game was named after the late football coach and sportscaster John Madden. When the game was being designed, Madden aimed to make the players' movements resemble the experience of watching real football, giving players the feeling of watching an actual football game through video gameplay. Due to the built-in elements of the game (sports commentators, realistic football play, player statistics), Jenny and Schary (2014) found a positive relationship between playing sports video games and learning real sports.

Jang et al. (2021) also analyzed the impact of gameplay frequency on viewing motivation, distinguishing between high-frequency and low-frequency gamers. While these studies provided useful insights, they often relied on scales designed for traditional sports (e.g., Trail & James's (2001) Motivation Scale for Sport Consumption (MSSC)) and thus may not have fully captured the unique motivations of esports fans. To address this gap, Qian et al. (2020) introduced the Motivation Scale of Esports Spectatorship (MSES), a scale specifically tailored to esports. Based on Self-Determination Theory (Ryan & Deci, 2000), it helped identify the motivations of online esports spectators (Qian et al., 2019). Using a mixed-method approach (qualitative and quantitative), Qian et al. initially identified ten key motivations for online esports spectators through semi-structured interviews and open-ended surveys: skill improvement, skill appreciation, vicarious achievement, bonding with friends, social opportunities, excitement of competition, game knowledge, competitive nature, dramatic character, and entertainment character (see Table 1). These motivations were included in a survey using a Likert scale to collect empirical data, confirming that all motivations played an important role for spectators.

Table 1

Variables of the Motivation Scale for Esports Spectatorship (MSES)

Variables	**Definitions**
Skill Improvement	Degree which watching professional players strategies and playstyles will develop the skill of the individual
Skill Appreciation	Degree to which fans admire strategies, quick decisions making, in-game knowledge of professional players
Vicarious Sensation	Degree to which esports spectators become immersed into the gaming experience based on how they are watching the game (i.e., large screens or projected imagery)
Friend Bonding	Degree to which esports fans find camaraderie and develop/maintain friendships with other fans in particular game communities
Socialization Opportunity	Degree to which esports fans interact, online or in person, with other esports fans to gain a sense of belonging
Competition Excitement	Degree to which levels of arousal and excitement fluctuate based on competitions and rivalries
Game Knowledge	Degree to which an individual's game knowledge influences what esports event to watch
Competitive Nature	Degree to which spectating esports fans experience sensations of competitiveness
Dramatic Nature	Degree to which esports fans gain arousal and satisfaction from watching close-score games, to include underdog upsets versus the match being one-sided
Entertainment Nature	Degree to which esports fans experience joy and excitement from watching competitive gaming in general

Note. Adapted from Qian et al. (2019) pp. 467-468.

While motivation scales designed for traditional sports fans have provided valuable insights, their adaptation to esports audiences may not fully reflect the unique factors driving engagement in this rapidly growing domain. Esports, with its distinctive characteristics such as virtual interactivity and genre diversity, requires a more tailored approach to understanding consumer motivations. To address this gap, this study utilizes the MSES, a tool specifically designed to capture the nuances of the esports audience. By exploring the relationship between esports audiences' motivations, the genres of the games they follow, and their level of psychological attachment, this research aims to provide a more accurate and comprehensive understanding of the unique motivational drivers within the esports context. With this approach, the current study aimed to address the following research question:

RQ: How do the motivations of esports spectators differ based on esports game genres and level of psychological attachment?

2. Methodology

Sample, Procedure, and Measures

To explore the motivations of esports spectators, this study recruited 486 participants using Amazon Mechanical Turk (M-Turk), an online platform known for its diverse and accessible participant pool (Sheehan, 2017). Participants were first screened based on their esports viewing experience, and those without prior esports event viewership were excluded. Those who passed the screening completed a questionnaire that gathered psychographic information, including their favorite esports game, frequency of watching and playing the game, and their psychological attachment to the game (Zaichkowsky, 1994). The psychological attachment to the game was measured with the modified version of Zaichkowsky's (1994) personal involvement inventory. Additionally, the questionnaire incorporated items from the MSES scale (Qian et al., 2019), which assessed various motivations such as competitive nature, competition excitement, and entertainment nature. All measures were assessed using 5-point Likert scales.

Data Screening & Sample Characteristics

During data screening, participants who did not play esports were excluded based on their response to the first question after agreeing to proceed with the survey. Additionally, 57 participants were excluded from the final analysis either because they reported not regularly watching esports or because they scored low on detection tests, including one open-ended question, suggesting they might be bots or cheaters. Another 34 participants were identified as outliers and removed, resulting in a final sample of 384 participants. The most popular esports genres were FPS (n = 169, 33%), sports-based games (n = 138, 32%), and MOBA (n = 77, 17%). The final sample had an average age of 36.68 years, with 250 male and 134 female participants. More than 65% of samples have higher education degrees, and more than 52% of participants make more than $50,000 per year. In terms of ethnicity, 70% of participants identified as White, 15% as Black, and 11% as Asian. On average, participants reported watching 6.42 hours per week of their favorite esports games, and they exhibited moderate to high involvement in their favorite esports, with a mean involvement score of 3.61 (SD = 0.99).

Data Analysis

To better understand the relationship between psychological attachment (Personal Involvement Inventory; Zaichkowsky, 1994) and viewing motivations (Qian et al., 2019), a K-means cluster analysis was performed (Aldenderfer & Blashfield, 1984). Participants were grouped into three clusters based on their psychological attachment scores: heavy esports consumers (n = 163, 42%), moderate esports consumers (n = 87, 23%), and light esports consumers (n = 134, 35%). A MANOVA (Multivariate Analysis of Variance) was then conducted to evaluate the effect of esports genres and esports consumer clusters on the ten motivational factors (i.e., *Skill Improvement*, *Skill Appreciation*, *Vicarious Sensation*, *Friend Bonding*, *Socialization Opportunity*, *Competition Excitement*, *Game Knowledge*, *Competitive Nature*, *Dramatic Nature*, and *Entertainment Nature*) from the MSES (Qian et al., 2019).

3. Results

The multivariate analysis of variance (MANOVA) results indicated that different esports genres had a statistically significant impact on spectators' motivations at the multivariate level, Wilks' Lambda = 0.90, $F(20, 732) = 1.97$, $p = .007$. In addition to game genres, the level of psychological attachment that spectators feel toward esports also played a significant role in shaping their motivations, Wilks' Lambda = 0.87, $F(20, 732) = 2.70$, $p < .001$. Further analysis revealed that the segmentation of esports consumers into different clusters significantly influenced all motivational factors ($p < .01$; see Table 2). The heavy esports consumer group, for example, scored significantly higher on all motivational factors compared to the light user group, indicating that more frequent or engaged viewers tend to have deeper motivational drives. Additionally, when comparing the heavy consumer group to moderate users, heavy consumers showed significantly stronger motivations across specific dimensions, particularly in terms of socialization opportunities ($p < .001$), entertainment nature ($p < .001$), and friend bonding ($p < .001$). These findings suggest that those who watch esports more frequently are not only more invested in the entertainment aspect but are also driven by opportunities for social interaction and relationship building within the community. Distinct from general consumer engagement levels, particular esports genres influenced specific motivations (see Table 3), including entertainment nature ($p < .05$), skill improvement ($p < .01$), and dramatic nature ($p < .05$). For example, consumers of FPS games had significantly higher motivations related to drama and skill improvement compared to spectators of sport-based games ($p < .05$). This result implies that FPS spectators are especially motivated by the thrill of close matches and the opportunity to learn from skilled gameplay, likely due to the fast-paced, skill-intensive nature of FPS games. Additionally, FPS consumers showed a significantly higher motivation for entertainment value than those who watched MOBA games ($p < .05$).

Table 2

Significant Univariate Effects for Esports Consumer Group

Motivations	*df*	*df error*	*F*	esports Consumer	Means	99% Confidence Interval	
						Lower Bound	Upper Bound
Socialization Opportunity	2	375	17.51	Light	2.28	1.97	2.59
				Moderate	2.41	2.03	2.79
				Heavy	3.18	2.90	3.47
Game Knowledge	2	375	6.52	Light	2.67	2.34	3.00
				Moderate	2.75	2.35	3.15
				Heavy	3.25	2.95	3.55
Skill Appreciation	2	375	9.27	Light	2.73	2.41	3.05
				Moderate	2.74	2.35	3.14
				Heavy	3.37	3.08	3.67
Vicarious Sensation	2	375	8.84	Light	2.50	2.18	2.82
				Moderate	2.72	2.33	3.12
				Heavy	3.19	2.90	3.49
Entertainment Nature	2	375	14.87	Light	2.60	2.28	2.91
				Moderate	2.70	2.32	3.08
				Heavy	3.42	3.14	3.71
Competition Excitement	2	375	9.39	Light	2.48	2.16	2.79
				Moderate	2.72	2.34	3.10
				Heavy	3.18	2.89	3.47
Competitive Nature	2	375	11.82	Light	2.46	2.15	2.76
				Moderate	2.72	2.34	3.09
				Heavy	3.23	2.94	3.51
Skill Improvement	2	375	12.04	Light	2.61	2.29	2.93
				Moderate	2.78	2.39	3.17
				Heavy	3.40	3.10	3.69
Friend Bonding	2	375	15.51	Light	2.31	1.99	2.63
				Moderate	2.48	2.10	2.87
				Heavy	3.19	2.90	3.48
Dramatic Nature	2	375	8.17	Light	2.68	2.35	3.01
				Moderate	2.86	2.45	3.26
				Heavy	3.35	3.05	3.66

Table 3

Significant Univariate Effects for Genre

Motivations	*df*	*df error*	*F*	Genre	Means	99% Confidence Interval	
						Lower Bound	Upper Bound
Entertainment Nature	2	375	3.75	FPS	3.17	2.90	3.44
				MOBA	2.73	2.33	3.12
				Sports	2.83	2.51	3.14
Skill Improvement	2	375	5.08	FPS	3.21	2.93	3.48
				MOBA	2.88	2.48	3.28
				Sports	2.70	2.37	3.02
Dramatic Nature	2	375	3.96	FPS	3.21	2.93	3.49
				MOBA	2.94	2.53	3.36
				Sports	2.74	2.41	3.07

Moreover, interaction effects between esports genres and esports consumer clusters were observed across various motivational factors. These included factors such as game knowledge ($p < .05$), skill appreciation ($p = .001$), competitive nature ($p < .05$), and skill improvement ($p < .05$). In other words, both the esports game genres and the consumer's level of engagement are key aspects for understanding esports consumers' motivations. As illustrated in Figures 1 through 4, these interaction effects revealed consistent patterns across the motivational factors, emphasizing the unique profile of each spectator type. For instance, moderate and heavy consumers of FPS games demonstrated greater motivation to acquire game knowledge, enhance their gaming skills, appreciate the skill level of professional esports players, and enjoy the dynamic competitiveness characteristic in esports contests. These results suggest that the esports game genre and the level of consumer engagement play crucial roles in shaping spectators' motivations, thus emphasizing the need for marketing strategies tailored to various esports consumer segments.

Figure 1

Interaction Effect on Game Knowledge

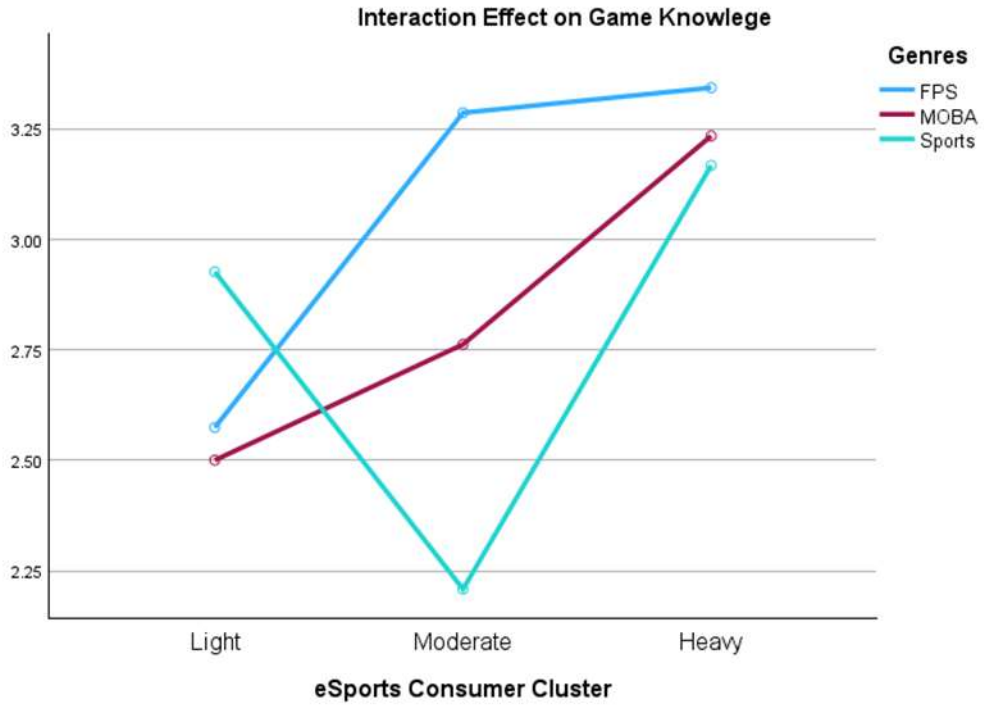


Figure 2

Interaction Effect on Skill Appreciation

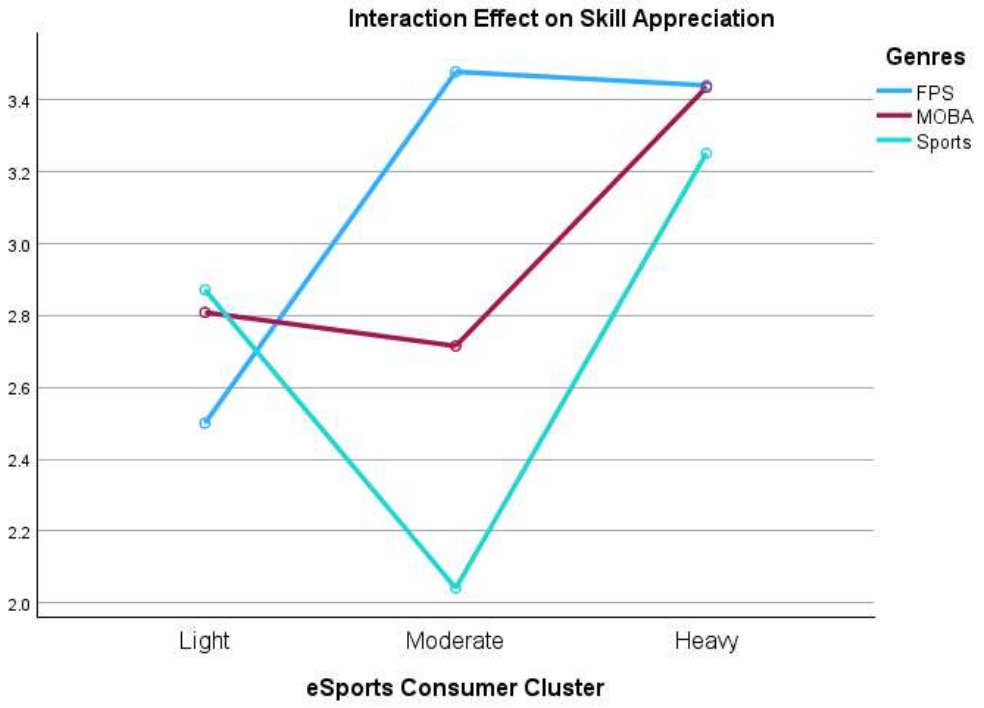


Figure 3

Interaction Effect on Competitive Nature

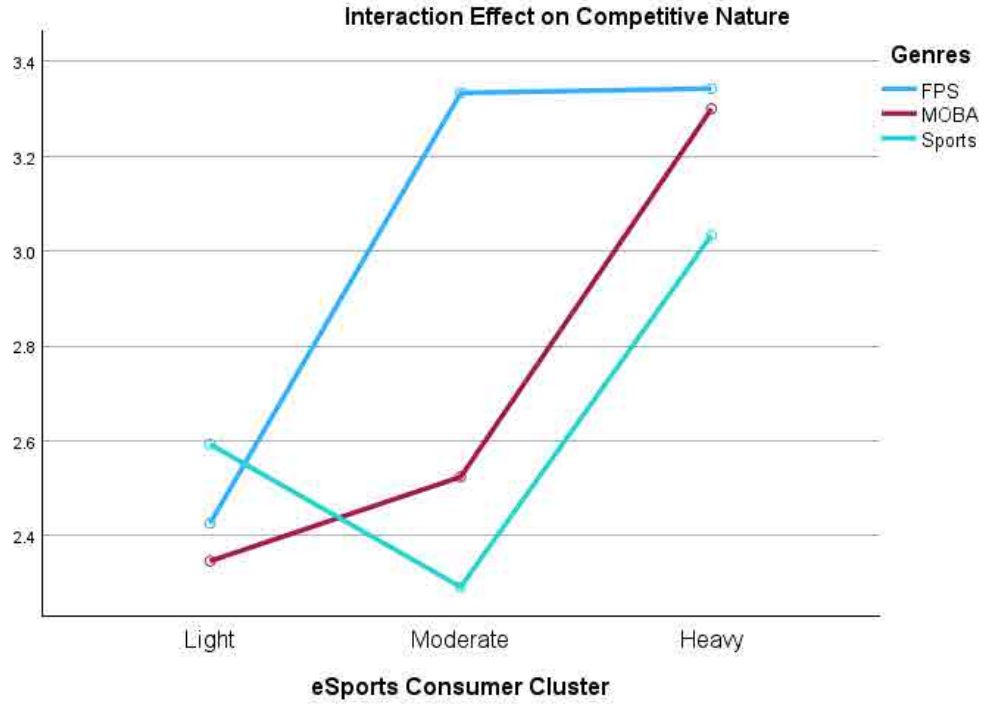
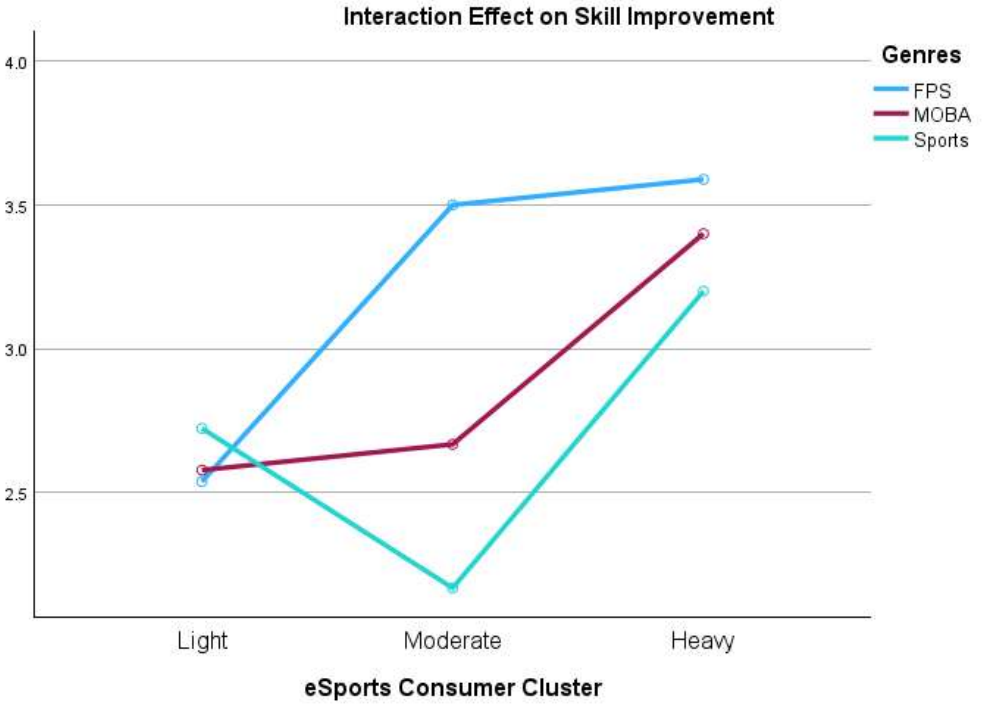


Figure 4

Interaction Effect on Skill Improvement



4. Discussion

This study utilized Qian et al.'s (2019 Motivation Scale of Esports Spectatorship (MSES to explore the roles of esports genres and consumer clusters. The findings suggest that MSES is an effective tool for understanding the motivations of esports audiences. Additionally, the study highlights the importance of developing marketing and engagement strategies tailored to the diverse motivational profiles within the esports audience, which could significantly enrich the spectator experience by aligning with their expectations. While heavy esports consumers tend to maintain consistent motivations across game genres, moderate consumers—especially those who watch MOBA and sport-based games—demonstrate relatively low and gradually diminishing motivations over time. For moderate users of these genres, initial motivations often fade as they continue to watch and play. During this stage, it is likely that while some viewers initially engage in both playing and watching these games, they may gradually shift away from gaming itself, exploring new games or alternative hobbies, a trend that is well reflected in this study's results. However, some of the moderate consumers evolve into heavy consumers through continued esports engagement, ultimately cultivating a broader range of strong motivations.

Heavy esports consumers with a strong understanding of the game watch esports not only as an opportunity for socializing and entertainment with friends they've met through gaming, but also to learn advanced strategies and specialized skills they can apply in their own gameplay. From a learner's perspective, they closely analyze the high-level tactics and techniques displayed by professional esports players. By observing why certain strategies succeed and comparing these with their own in-game decisions, they aim to integrate insights into their play, striving to improve their skills. These viewers are inspired by the skillful performances of professional esports players and deeply admire the technical expertise displayed in critical moments, such as precise motor skills and hand-eye coordination. This admiration not only fuels their aspirations to reach similar levels of expertise but also reinforces the argument that esports deserve recognition as a legitimate sport, requiring comparable levels of physical precision and mental agility as traditional sports (Jenny et al., 2016. In other words, heavy esports consumers, in particular, watch with a sense of appreciation and respect for professional players' abilities, drawing inspiration from their performances to refine their own skills.

Practical Implications

The study results show that psychological attachment plays a crucial role in shaping the motivations of esports viewers, particularly within the heavy consumer cluster (Qian et al., 2019). Understanding these motivational differences is essential for esports organizers, streamers, and marketers in designing engagement strategies tailored to various audience segments, providing valuable insights for these stakeholders. To start, designing educational and interactive events targeted at both heavy and light users is recommended. For example, recognizing that fans of FPS, MOBA, and sport-based games are highly motivated by skill improvement opens up opportunities for tailored content. Offering tutorials, strategy guides, expert analysis, and detailed post-match breakdowns can meet these viewers' desire to learn, fostering deeper engagement and loyalty. Additionally, hosting Q&A sessions with professional players, providing workshops focused on learning and practicing specific skills, or organizing events where fans can explore advanced gameplay strategies could be particularly effective. Such initiatives not only foster meaningful audience engagement but also cultivate a dedicated fan base, ultimately strengthening the esports ecosystem.

These findings also hold practical implications for game developers, especially regarding the potential use of artificial intelligence (AI) in gaming. According to Wu (2019), AI programs are currently being developed to compete against human players using advanced macro strategies typical in MOBA games, such as ambush tactics and lane control. Though still in development, these AI systems have already achieved a 45%-win rate against human players, demonstrating their potential. Developers might consider creating game modes where players can compete against AI that simulates the strategies of professional players, giving fans a challenging way to practice high-level techniques.

Beyond educational efforts, enhancing the entertainment value and immersive experiences of esports events plays a critical role in audience engagement (Qian et al., 2019). As Qian et al. (2019) observed, “spectators typically watch the game from the same perspective as if they were playing the game themselves” (pp. 472). By simulating the sights and sounds professional players experience, spectators can feel as though they are in the game, adding a layer of excitement to the viewing experience. Tournament organizers can capitalize on this by strategically selecting venues that stimulate multiple senses, optimizing the overall fan experience. Zhu et al. (2021) noted that the layout and physical environment of a venue significantly impact fan satisfaction, suggesting that both functionality and visual appeal are essential. Additionally, special effects—such as dynamic lighting and immersive sound systems—could enhance the sense of vicarious thrill for spectators, with flashy LED displays or realistic game sounds heightening the action (Migliore, 2021).

5. Conclusion

This study contributes to the growing body of literature on esports spectatorship by utilizing a motivation scale specifically designed for esports fans. The findings demonstrate that while esports genres may not significantly influence spectating motives, psychological attachment levels play a key role in shaping these motivations. In particular, heavy viewers of FPS games are motivated by a desire to improve their skills and appreciate high-level gameplay, which presents unique opportunities for marketers and content creators. It would be beneficial for future studies to adopt longitudinal research methods to examine how the motivations of light consumers and moderate consumers change over time and how they transition to the next consumer group. Understanding this aspect could enhance our overall understanding of the motivations that drive consumption among light and moderate consumers, as well as how certain motivations evolve or diminish when they progress to the next stage. Among esports games, there are modes where players face off against opponents online, as well as modes where they compete against programmed virtual opponents within the game (e.g., practice mode). These different consumption patterns of esports consumers could be analyzed in future studies. Additionally, it would be interesting to explore esports consumers' motivations for different games within the same genre. For example, the motivations of people who enjoy the NBA 2K series versus those who enjoy the Madden NFL series, or those who play PlayerUnknown's Battlegrounds (PUBG) versus Fortnite, might differ. Additionally, a variety of motivations among competitive and casual players could be investigated in future research. This would allow for a deeper understanding of the diverse motivations of esports consumers and facilitate discussions on how to leverage this information in the market. Esports leagues and tournaments (e.g., Counter-Strike Major Championships, League of Legends World Championship) have now accumulated enough time to write their own history. Rivalries formed between teams and individual players within this context may serve as a motivation for fans to watch (Tyler & Cobb, 2015). Future studies could explore this aspect of rivalry, as the current study found that competition excitement was a key spectating motivation. Overall, this study highlights the importance of segmenting esports audiences based on psychological attachment and tailoring marketing strategies to meet the diverse needs of different fan groups.

Author Note

We have no known conflict of interest to disclose.

Correspondence concerning this manuscript should be addressed to Jun-sung Kim, Department of Sports Health Management, Hanyang Women's University, 200, Salgoji-gil, Seongdong-gu, Seoul, 04763, Republic of Korea. Email: jskim@hywoman.ac.kr

References

Aldenderfer, M. S., & Blashfield, R. K. (1984). *Cluster analysis*. Sage. https://doi.org/10.4135/9781412983648

Brown, K. A., Billings, A. C., Murphy, B., & Puesan, L. (2017). Intersections of fandom in the age of interactive media: esports fandom as a predictor of traditional sport fandom. *Communication & Sport*, *6*(4), 418-435. https://doi.org/10.1177/2167479517727286

Choi, E., Shin, S. H., Ryu, J. K., Jung, K. I., Kim, S. Y., & Park, M. H. (2020). Commercial video games and cognitive functions: Video game genres and modulating factors of cognitive enhancement. *Behavioral and Brain Functions*, *16*, 1-14. https://doi.org/10.1186/s12993-020-0165-z

DeSena, G. (2023, November 20). The League of Legends 2023 World Championship becomes the most viewed esports event of all time. *Esports Illustrated*. https://www.si.com/esports/league-of-legends/worlds-2023-viewership-record

Donovan, I., Saul, M. A., DeSimone, K., Listman, J. B., Mackey, W. E., & Heeger, D. J. (2022). Assessment of human expertise and movement kinematics in first-person shooter games. *Frontiers in Human Neuroscience*, *16*, 979293. https://doi.org/10.3389/fnhum.2022.979293

Hong, H. J. (2022). eSports: the need for a structured support system for players. *European Sport Management Quarterly*, *23*(5), 1430-1453. https://doi.org/10.1080/16184742.2022.2028876

Jang, W., Byon, K. K., & Song, H. (2021). Effect of prior gameplay experience on the relationships between esports gameplay intention and live esports streaming content. *Sustainability*, *13*(14), 8019. https://doi.org/10.3390/su13148019

Jenny, S. E., Manning, R. D., Keiper, M. C., & Olrich, T. W. (2016). Virtual(ly) athletes: Where esports fit within the definition of "Sport". *Quest*, *69*(1), 1-18. https://doi.org/10.1080/00336297.2016.1144517

Jenny, S. E., & Schary, D. (2014). Exploring the Effectiveness of Learning American Football through Playing the Video Game "Madden NFL". *International Journal of Technology in Teaching and Learning*, *10*(1), 72-87. https://sicet.org/main/wp-content/uploads/2016/11/ijttl-14-01-5_Seth_Jenny.pdf

Ma, S. C., Byon, K. K., Jang, W., Ma, S. M., & Huang, T. N. (2021). Esports spectating motives and streaming consumption: Moderating effect of game genres and live-streaming types. *Sustainability*, *13*(8), 4164. https://doi.org/10.3390/su13084164

Manci, E., Güdücü, Ç., Günay, E., Güvendi, G., Campbell, M., & Bediz, C. Ş. (2024). The relationship between esports game genres and cognitive performance: A comparison between first-person

shooter vs. multiplayer online battle arena games in younger adults. *Entertainment Computing*, *50*, 100640. https://doi.org/10.1016/j.entcom.2024.100640

Migliore, L. (2021). What is esports? The past, present, and future of competitive gaming. In *Handbook of Esports Medicine: Clinical Aspects of Competitive Video Gaming* (pp. 1-16). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-73610-1_1

Pizzo, A. D., Baker, B. J., Na, S., Lee, M. A., Kim, D., & Funk, D. C. (2018). esports vs. sport: A comparison of spectator motives. *Sport Marketing Quarterly, 27*(2), 108-123. https://doi.org/10.34944/DSPACE/7093

Pizzo, A. D., Su, Y., Scholz, T., Baker, B. J., Hamari, J., & Ndanga, L. (2022). Esports scholarship review: Synthesis, contributions, and future research. *Journal of Sport Management*, *36*(3), 228-239. https://doi.org/10.1123/jsm.2021-0228

Qian, T. Y., Wang, J. J., Zhang, J. J., & Lu, L. Z. (2019). It is in the game: Dimensions of esports online spectator motivation and development of a scale. *European Sport Management Quarterly*, *20*(4), 458-479. https://doi.org/10.1080/16184742.2019.1630464

Rogers, R., Farquhar, L., & Mummert, J. (2022). Motivational differences among viewers of traditional sports, esports, and NBA 2K league. *Communication & Sport*, *10*(2), 175-194. https://doi.org/10.1177/2167479520942738

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68-78. https://doi.org/10.1037/0003-066X.55.1.68

Sheehan, K. B. (2017). Crowdsourcing research: data collection with Amazon's Mechanical Turk. *Communication Monographs*, *85*(1), 140-156. https://doi.org/10.1080/03637751.2017.1342043

Smith, M. J., Birch, P. D., & Bright, D. (2019). Identifying stressors and coping strategies of elite esports competitors. *International Journal of Gaming and Computer-Mediated Simulations*, *11*(2), 22-39. https://doi.org/10.4018/IJGCMS.2019040102

Trail, G. T., & James, J. D. (2001). The motivation scale for sport consumption: Assessment of the scale's psychometric properties. *Journal of Sport Behavior, 24*(1), 108-127. https://psycnet.apa.org/record/2001-14557-008

Watanabe, N. M., Xue, H., Newman, J. I., & Yan, G. (2021). The attention economy and esports: An econometric analysis of Twitch viewership. *Journal of Sport Management*, *36*(2), 145-158. https://doi.org/10.1123/jsm.2020-0383

Wu, B. (2019). Hierarchical macro strategy model for MOBA game AI. *Proceedings of the AAAI conference on artificial intelligence*, *33*(1), 1206-1213. https://doi.org/10.1609/aaai.v33i01.33011206

Zaichkowsky, J. L. (1994). The personal involvement inventory: Reduction, revision, and application to advertising. *Journal of Advertising*, *23*(4), 59-70. https://doi.org/10.1080/00913367.1943.10673459

Zhu, X., Pyun, D. Y., & Manoli, A. E. (2021). Developing a conceptual model of service quality for eSports. *Quest*, *73*(4), 375-390. https://doi.org/10.1080/00336297.2021.1976654