Shahid Bahonar University of Kerman

Journal of New Studies in Sport Management

Online ISSN: 2717 - 4069

Homepage: https://jnssm.uk.ac.ir

Iranian Scientific Association of Sport Management

E-Sports Nexus: Gender Dynamics in Iranian Players' Personality Traits and Motivations

Mohammad Erfan Farzaneh Khameneh [1] | **Rasool Norouzi Seyed Hossini** [2] | **Hojjatollah Farahani** [3]

1. M.A. Student in Sport Management, Department of Sports Science, Faculty of Humanities, Tarbiat Modares University, Tehran, Iran. Email: erfan.farzaneh@modares.ac.ir
2. Corresponding author, Associate Professor, Department of Sports Science, Faculty of Humanities, Tarbiat Modares University, Tehran, Iran. Email: rasool.norouzi@modares.ac.ir
3. Assistant Professor, Department of Psychology, Faculty of Humanities, Tarbiat Modares University, Tehran, Iran. Email: h.farahani@modares.ac.ir

ARTICLE INFO

Article type:
Original article

Article history:
Received: 13 December, 2023
Received in revised form: 27 January, 2024
Accepted: 8 February, 2024
Published online: 8 August, 2024

Keywords:
E-sports
Motivation
Participation
Personality traits

ABSTRACT

The study aimed to examine the gender-adjusted impact of personality factors on the motivations of e-sports participants. Descriptive research was conducted using structural equation modeling. The sample consisted of 763 individuals (599 men and 164 women) selected through simple random sampling, with statistical power set at 80% and a significance level of 0.01. The research variables, including participation structure and personality traits, were measured using the NEO Five-Factor Inventory (NEO-FFI) short-form questionnaire (Gassling et al., 2003) and the Motivational Participation Questionnaire` of Cianfrone et al. (2011). The findings supported all research hypotheses regarding the personality traits and motivations of e-sports players, even after adjusting for gender. The results indicated that brunerism, consensus, duty, psychology, and acceptance of experience were significant motivators for e-sports players, and the gender-adjusted analysis confirmed the research hypotheses in both male and female groups. Therefore, considering the personalities of e-sports players in sports marketing can enhance their engagement, as their motivations to participate are influenced by their traits.

Introduction

In recent years, electronic sports (e-sports) have experienced an unprecedented surge in popularity, captivating a growing fanbase and generating substantial revenue (Bäcklund, Elbe, Gavelin, Sörman, & Ljungberg, 2022). This emerging form of entertainment has attracted over 380 million viewers worldwide, solidifying its position as a prominent cultural phenomenon (Abbasi et al., 2021; Abbasi, Asif, Shamim, Ting, & Rather, 2023). The global spending on e-sports has skyrocketed from $137.9 billion in 2018 to an impressive $1.180 billion by 2021, reflecting the

How to Cite: Farzaneh Khameneh, M. E., Norouzi Seyed Hossini, R., & Farahani, H. (2024). E-Sports Nexus: Gender Dynamics in Iranian Players' Personality Traits and Motivations. Journal of New Studies in Sport Management, 5(3), 1158-1171. doi: 10.22103/jnssm.2024.22670.1247

© The Author(s). Publisher: Shahid Bahonar University of Kerman
DOI: 10.22103/jnssm.2024.22670.1247

remarkable financial potential of the industry (Bousquet & Ertz, 2021; Hedlund, 2023). E-sports encompasses a wide range of games played in real-time on various platforms, including personal computers (PCs) and game consoles, such as StarCraft II and FIFA online games (Zhao & Lin, 2021). The European Interactive Software Federation reported that individuals spend an average of approximately 8 hours and 42 minutes per week engaging in e-sports, underscoring its significant impact on people's daily lives (Hedlund, 2023). Given the widespread use and substantial time investment in e-sports activities, it becomes crucial to understand the factors that influence sports behaviors, including individual differences in personality traits and sports motivations (de Hesselle, Rozgonjuk, Sindermann, Pontes, & Montag, 2021).

Personality characteristics play a pivotal role in e-sports, providing valuable insights into why and how players engage in these games (Akbari et al., 2021; Delhove & Greitemeyer, 2020). For instance, extroversion and openness to experience have been found to directly impact the motives for sports participation (Panahi, Esmaeili, Goodarzi, & Roozbahani, 2022). Research conducted by de Hesselle et al. (2021) has revealed a significant relationship between the personality traits of e-sports players and the amount of time they spend playing electronic games each week. Furthermore, conscientiousness has been identified as having a protective role in online games, as demonstrated by Akbari et al. (2021). Studies by Reyes et al. (2019) and Steca, Baretta, Greco, D'Addario, and Monzani (2018) have shown that high conscientiousness, low neuroticism, and higher scores in conscientiousness and agreeableness are associated with improved sports performance and participation in national or international competitions among athletes.

E-sports offers a unique environment where individuals can interact and participate in group games, fostering the sharing of information and predicting players' sports success (Bäcklund et al., 2022; Hong, Wilkinson, & Rocha, 2023; Khan, Ahmed, & Abid, 2016; Matuszewski, Dobrowolski, & Zawadzki, 2020; Ul Islam, Rahman, & Hollebeek, 2017). Positive relationships have been observed between different motivations and various aspects of e-sports fan engagement, as suggested by Barney (2021). Unlike traditional sports, where physical advantages often favor men, physical attributes have no bearing on high performance in e-sports, enabling both men and women to compete on an equal footing (Shen, Ratan, Cai, & Leavitt, 2016; Zaib Abbasi, Alqahtani, Tsiotsou, Rehman, & Hooi Ting, 2023). However, the e-sports industry remains predominantly male-dominated, with women representing a smaller proportion of players, fans, managers, and leaders (Hayday & Collison, 2020; Rogstad, 2022). Studies indicate that women comprise only 35% of e-sports players and a mere 5% of professional players (Hilbert, 2019; Rogstad, 2022; Tang, Cooper, & Kucek, 2021). This underrepresentation of women at the highest level of e-sports highlights the need to investigate and understand the factors contributing to this gender disparity(Kim & Kim, 2022).

In Iran, electronic sports have not received significant attention, and statistics indicate a low presence of women in electronic games (ICVGF, 2023). Consequently, there has been limited research on the personality traits and motivations of Iranian female players, necessitating an exploration of this phenomenon from new perspectives. Despite the challenges, Iran has witnessed a significant surge in e-sports participation. According to the ICVGF (2023), the number of e-sports players in Iran has risen from 28 million in 2018 to 32 million in 2021. In other words, out of Iran's population of 83 million in 2021, 32 million individuals actively engage in e-sports. Among these players, 49% play daily, and 65% are involved in online gaming. These statistics underscore the substantial prevalence of electronic games in Iranian society. However, comprehensive research on this emerging sport is lacking, and there is limited information available on the reasons for participation, motivations, and personality traits of Iranian players. The surge in e-sports participation in Iran is a remarkable phenomenon. With a population of 83 million, the fact that 32 million individuals actively engage in e-sports demonstrates the significant prevalence of electronic games in Iranian society (ICVGF, 2023). These numbers highlight the substantial impact and potential of e-sports as a form of entertainment and engagement for Iranians. However, despite the growing popularity of e-sports in the country, research on this emerging sport in Iran is still limited, particularly concerning the motivations and personality traits of Iranian players. Therefore, there is a pressing need to explore and understand the factors driving e-sports participation in Iran from new perspectives.

Personality traits have been identified as influential factors in e-sports engagement, shedding light on the motivations and behaviors of players (Akbari et al., 2021; Delhove & Greitemeyer, 2020). For instance, extroversion and openness to experience have been found to have a direct impact on individuals' motives for participating in sports (Panahi et al., 2022). This implies that players with higher levels of extroversion may be more inclined to engage in e-sports activities that involve social interaction, while those with a greater degree of openness to experience may be drawn to the novelty and variety offered by different games. Furthermore, research by de Hesselle et al. (2021) has shown a significant relationship between the personality traits of e-sports players and the amount of time they dedicate to playing electronic games each week. This suggests that certain personality traits may influence the intensity of e-sports engagement among Iranian players as well.

Conscientiousness, in particular, has been found to play a protective role in online games, as demonstrated by Akbari et al. (2021). This trait is characterized by self-discipline, organization, and a sense of responsibility, which may contribute to players' ability to manage their time effectively and avoid excessive gaming habits. Additionally, studies conducted by Reyes et al. (2019) and Steca et al. (2018) have shown that high levels of conscientiousness, along with low neuroticism and higher scores in conscientiousness and agreeableness, are associated with improved sports performance and participation in national or international competitions among athletes. These findings suggest that personality traits can have a significant impact on not only the motives and engagement of e-sports players in Iran but also their overall performance in competitive gaming.

E-sports offer a unique environment that fosters interaction and participation in group games, enabling the sharing of information and predicting players' success (Bäcklund et al., 2022; Funk, Pizzo, & Baker, 2018; Hong et al., 2023; Khan et al., 2016; Matuszewski et al., 2020). This collaborative nature of e-sports has been shown to enhance fan engagement and motivation, as suggested by Barney (2021). Unlike traditional sports, where physical advantages often favor men, e-sports provides a level playing field for both men and women, as physical attributes have no bearing on high performance (Shen et al., 2016). However, despite this equality in terms of physical abilities, the e-sports industry remains predominantly male-dominated, with women being underrepresented as players, fans, managers, and leaders (Rogstad, 2022; Tang et al., 2021). Studies indicate that only 35% of e-sports players in general, and a mere 5% of professional players, are women (Hayday & Collison, 2020; Hilbert, 2019; Kim & Kim, 2022). This gender disparity in e-sports participation at the highest level emphasizes the need to investigate and understand the factors contributing to this underrepresentation of women.

In the case of Iran, women's presence in electronic games is particularly low, as indicated by statistics from the ICVGF (2023). This further highlights the significance of exploring the motivations and personality traits of Iranian female players to gain a comprehensive understanding of their engagement in e-sports. By examining the factors that influence e-sports participation and the potential moderating effects of gender on the relationship between personality traits and participation motives, this research aims to fill the existing gap in knowledge regarding e-sports in Iran. In conclusion, e-sports have experienced remarkable growth in recent years, captivating a global fanbase and generating substantial revenue. Personality traits have been identified as influential factors in e-sports engagement, impacting players' motives and behaviors. Extroversion, openness to experience, and conscientiousness have been shown to play significant roles in e-sports participation, while high conscientiousness and agreeableness are associated with improved sports performance. E-sports offer a unique environment that fosters interaction and participation in group games, providing equal opportunities for both men and women. However, despite the equal opportunities provided by e-sports for both men and women, there remains a significant gender disparity in the industry. Women are underrepresented as players, fans, managers, and leaders in e-sports. This gender disparity raises important questions about the factors contributing to the underrepresentation of women in e-sports and the potential barriers they face in fully participating and excelling in the field. Given the existing research on the influence of personality characteristics on the participation motives of e-sports players and the potential moderating effects of gender on the relationships between variables, this study represents one of the first attempts to focus specifically on electronic sports players in Iran. The primary aim of this research is to investigate

whether personality traits influence the participation motives of Iranian e-sports players and whether demographic variables, such as gender, moderate the intensity of this relationship.

Methodology

In this study, the applied research approach focuses on a descriptive survey method, specifically employing the structural equation modeling (SEM) approach. SEM is a statistical technique that allows for the examination of complex relationships between variables and provides a comprehensive understanding of the underlying theoretical model. By utilizing SEM, this study aims to explore the relationships between personality traits and participation motivation among Iranian electronic sports players in 2023. Therefore, the statistical population for this research comprises all Iranian electronic sports players in 2023. This population was chosen due to its relevance to the study's objectives and the availability of data. To determine the appropriate sample size, a sample size estimation software was utilized. The software considered key factors such as the study's goals, hypotheses, alpha level, statistical power, and minimum R^2 values for each criterion variable. Based on these considerations, the sample size was estimated to be 763 individuals, consisting of 599 men and 164 women. This sample size provides adequate statistical power to analyze the relationships between variables effectively.

To identify the personality traits of e-sports players, the standard personality characteristics questionnaire known as the short form NEO-FFI by Gosling, Rentfrow, and Swann Jr (2003) was employed. This well-established questionnaire assesses five key dimensions of personality: Extroversion, Agreeableness, Conscientiousness, Nervousness, and Openness to experience. The NEO-FFI consists of ten items, and participants are required to rate their agreement or disagreement with each item on a Likert scale. Additionally, to explore the participation motivation variable among electronic sports players, the 20-question participation motivation questionnaire developed by Cianfrone, Zhang, and Jae Ko (2011) was utilized. This questionnaire captures six dimensions of participation motivation: Entertainment, Fantasy, Social Interaction, and Interest. By employing this comprehensive questionnaire, the study aims to gain insights into the underlying motivations that drive individuals to participate in electronic sports activities.

To ensure the face and content validity of the questionnaires, a rigorous three-step translation and adaptation process was followed. The items were carefully translated and adapted to align with the research objectives. After this process, the questionnaires were reviewed by supervisors, advisors, and five experts in the field of electronic sports, who provided valuable feedback and approved their validity. During the data analysis phase, various techniques were employed to ensure the robustness and reliability of the findings. Divergent validity was evaluated based on Fornell and Larcker criteria, which assess the distinctiveness of the measured constructs. Convergent validity was assessed using the mean-variance method to examine the convergence of multiple indicators measuring the same construct. Furthermore, internal consistency and reliability of the questionnaire items were estimated using Cronbach's alpha and the Composite reliability method, respectively, to ensure that the items consistently measured the intended constructs. Convergent validity and reliability of the measurement tool are shown in Table 1.

Table 1. Convergent validity and reliability of the measurement tool (source: research findings)

Variables	Average Variance Extracted (AVE)	Composite Reliability (CR)	Cronbach's alpha Coefficients
Extroversion	0.724	0.967	0.931
Agreeableness	0.762	0.865	0.712
Conscientiousness	0.783	0.878	0.723
Nervousness	0.758	0.862	0.724
Openness to experience	0.728	0.842	0.731
Competition	0.694	0.872	0.780

Recreation	0.715	0.883	0.800
Entertainment	0.758	0.852	0.740
Fantasy	0.728	0.883	0.823
Social interaction	0.619	0.867	0.795
Interested	0.709	0.880	0.795

Table 2 shows that the constructs are entirely separated; that is, the values of the primary diameter (the second root of the average extracted variance) for each hidden variable are higher than the correlation of that variable with other reflective hidden variables in the model. Therefore, the research tool has appropriate validity.

Table 2. Correlation matrix and assessment of divergent validity

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1.Extroersion	*0.762										
2.Agreeableness	0.701	*0.794									
3.Conscientousness	0.272	0.651	*0.801								
4.Nervousness	0.627	0.192	0.326	*0.822							
5. Openness to experience	0.138	0.171	0.624	0.751	*0.753						
6.Competition	0.422	0.484	0.484	0.285	0.156	*0.774					
7. Fantasy	0.160	0.172	0.086	0.562	0.270	0.415	*0.712				
8.Entertainment	0.424	0.614	0.349	0.504	0.376	0.106	0.130	*0.831			
9. Fantasy	0.539	0.192	0.651	0.672	0.326	0.716	0.685	0.754	*0.794		
10.Socialinteraction	0.412	0.548	0.192	0.711	0.624	0.349	0.546	0.270	0.270	*0.800	
11. Interested	0.451	0.641	0.548	0.349	0.484	0.468	0.504	0.374	0.538	0.778	*0.741

To test the hypotheses derived from the theoretical framework, structural equation modeling with Roker variance was conducted. Structural equation modeling allows for the examination of complex relationships between latent variables and observed variables, providing a comprehensive understanding of the underlying dynamics. SPSS version 23 and Smart PLS version 3 software were utilized for the statistical analyses, enabling the assessment of the proposed model's fit and the estimation of path coefficients and effect sizes. By employing this rigorous methodology, the study aims to contribute to the existing knowledge on the relationships between personality traits and participation motivation among Iranian electronic sports players. The detailed data collection procedure, use of validated questionnaires, and robust statistical analyses ensure the reliability and validity of the findings, enhancing the overall quality and credibility of the research.

Results

The results of the descriptive statistics of the participants indicated that 21.5% of electronic sports players were female, and 78.5% were male. Also, 89% of the players were single, and 11% were married. Regarding the age of electronic sports players, the most extensive age range was under 20 years, with 50.3%. Other information related to the demographic profile of the participants is presented in detail in Table 3.

Table 3. Demographic information

Demographic information	categories	Percent
Gender	Female	21.5
	Male	78.5
Marital status	Single	89
	Married	11
Age	Under 20	50.3
	21 - 30	35.1
	31 - 40	14.1
	More than 41	0.5
Electronic exercise frequency	daily	61.6
	Once or twice a week	18.5
	3 or 4 times a week	19.9
The (hour) rate of playing e-sports	Less than an hour	5.6
	1 to 2 hours	22.9
	3 to 4 hours	42.2
	5 to 6 hours	17.6
	More than 6 hours	11.7
Watching Electronic Sports Platform	Twitch	61.1
	YouTube	38.9
The time spent watching electronic sports	1 to 2 hours	67.8
	3 to 4 hours	24.6
	5 to 6 hours	3.9
	More than 7 hours	3.7

The evaluation of structural equation modeling with a variance-based approach is based on the opinion of Hair et al. (2013; 2021). It consists of a systematic approach in the form of five steps. After verifying the reliability of the measurement model (external model), these steps are aimed at evaluating the results of the structural model, which includes checking the model's predictive capabilities and relationships between structures. These steps are: 1. evaluation of the structural model to investigate the linear relationships between variables; 2. evaluation of the significance of the relationships of the variables in the structural model; 3. evaluation of the R^2level and the effect size of f^2; and 5. evaluation of the predictive power of Q^2relationships.

External Model Analysis Results

Based on the results of Table 4, in the factor loadings section of each item, according to the opinion of Hair et al. (2013), all things were confirmed according to the cut point more significant than 0.7. On the other hand, all items were evaluated as meaningful. In the part related to the reliability of the questionnaires, two statistical tests of Cronbach's alpha coefficient were used to evaluate the internal consistency of the questionnaires and the combined reliability method was used to evaluate the reliability of the items of the questionnaires. The results of both statistical tests were evaluated as appropriate by obtaining values greater than 0.7 (Hair et al., 2013). The extracted mean-variance index was used to evaluate the validity of the convergence of the components of this research. The cut-off point of the considered index is reported to be more than 0.5 (Hair et al., 2013), which was also estimated to be appropriate.

Table 4. The results of external model analysis, factor loadings, and significance of each item

Variable	Dimensions		Questions	Factor load	t-value
Personality characteristics	X1	Extroversion	I feel like an outgoing and enthusiastic person	0.864	30.995
	X2		I feel that I am a reserved and quiet person	0.841	44.821
	X3	Agreeablenes s	I feel like a caring and warm person	0.861	24.110
	X4		I feel like a critical and militant person	0.897	37.338

Variable		Dimensions	Questions	Factor load	t-value
	X5	Conscientiousness	I feel that I am a reliable and self-controlled person	0.840	35.745
	X6		I feel like a messy and careless person	0.866	27.081
	X7	Nervousness	I feel like a calm and emotionally stable person	0.861	21.397
	X8		I feel anxious and irritable	0.894	32.034
	X9	Openness to experience	I feel that I am a person interested in new and complicated experiences	0.895	14.698
	X10		I feel that I am a traditional and non-creative person	0.874	30.372
Participation motivation	X11	Competition	I like to play video games to prove to others that I am the best	0.844	20.291
	X12		When I lose someone, I immediately want to play again so I can beat them	0.820	21.271
	X13		It's important to me to be the fastest and most skilled person playing video games	0.835	20.924
	X14	Recreation	Video games take me away from my regular schedule	0.841	25.648
	X15		Video games make a change from what we do regularly	0.842	20.463
	X16		Video games distract from life's minor problems (boredom).	0.853	39.373
	X17	Entertainment	I play video games because it's fun	0.821	41.117
	X18		I play video games because it's a way to pass the time	0.797	29.520
	X19		I play video games for their entertainment value	0.815	40.799
	X20	Fantasy	Video games allow me to pretend to be a sports star or team member	0.799	27.989
	X21		I like to do something that I can't normally do through sports	0.826	31.865
	X22		I want to do things in video games that cannot be done in real life	0.807	23.019
	X23		I enjoy transformation and excitement in video games	0.802	16.106
	X24	Social Interaction	I use video games as a reason to get together with others	0.768	39.161
	X25		I spend my time playing video games with others	0.805	16.076
	X26		A big reason I play video games is to hang out with others	0.759	20.936
	X27		I play video games because it allows me to be with other people	0.841	32.609
	X28	Interest	My favorite sport is the sport that the sports video game is modeled after	0.851	24.275
	X29		I follow video games to be related to my favorite sport	0.842	26.234

Variable	Dimensions	Questions	Factor load	t-value
	X30	Sports video games and soccer video games are some of my favorite games	0.833	15.779

Internal model analysis results

R^2shows the predictive power between hidden variables in the form of an internal model. According to Hair et al. (2013), the verified range for R^2in structural equation modeling for each criterion variable is zero to one. The more significant this effect is, the higher the predictive power of the predictor variable is with the criterion variable. Also, three cut points (0.25, 0.5, and 0.75) have been presented as weak, moderate, and predictive solid limits (Hair et al., 2013). In this regard and following the research results, 0.89 of the changes in participation motives have been explained by the dimensions of the personality characteristics of electronic sports players. The following criterion is the index of predictive power of relationships Q^2 (Stone Geisser), which evaluates the predictive power of relationships in the structural model. Hair et al. (2013) stated that to consider the structural model, researchers should, in addition to the R^2report, check the Q^2index for which they reported three cut points (0.2, 0.15, 0.35). Based on this and according to the results of Table 5, the value of $Q^2$for the dimensions of social participation in the role of criterion (competition, fun, entertainment, fantasy, social interaction, and interest) was equal to 0.37. Referring to the considered values of Q^2in line with the predictive power of structural model relationships, it can be stated that the results obtained for the research variables show a strong relationship.

Table 5. Results of Internal Model Analysis of Participation motivation

factors	values
Determination coefficient (R^2)	0.894
Predictive Power of Model (Q^2)	0.374

In order to evaluate the quality of the model, criteria have been considered in the modeling of structural equations with a variance-based approach. One of these criteria is the main goodness-of-fit index, which is the standardized residual root of the conventional mean square, and the cut-off point in this index in variance-based modeling is in two standard and significance modes, respectively <0.08 and <0.95 is at a significant level (P = 0.05). According to Table 6, in both cases, the considered index had a favorable fit. Two other indicators to evaluate the model in the Roker variance axis in a significant state with the bootstrapping method to determine the difference between the two experimental and fitted matrices—two indicators of minimum undistributed difference and the difference obtained from geometric levels with a cut point less than 95%—are considered at a significant level (0.05) (Henseler, Hubona, & Ray, 2016). These two indicators also had a favorable level in the fit of the model.

Table 6. Main Model Quality Evaluation Indicators

Index	Standard Mode	Significant	Evaluation Criterion
SRMR	0.045	-	< 0.095 < 0.08
d-ULS	-	0.001	< 0.095
d-G	-	0.001	< 0.095

The subsequent desired index is the f2 effect size index (Cohen's effect size). The considered information (0.2, 0.15, and 350) are weak, medium, and robust measures of one structure over another, respectively (Hair et al., 2013). In this regard and according to the results of Table 7, it was concluded that extroversion is motivated with a coefficient of 0.1, a weak effect, and the path of agreeableness induced by participation is a measure with a coefficient of 0.218. Relatively appropriate and robust product, conscientiousness on the motivation to participate with a coefficient of 0.434, a suitable and powerful effect size, neuroticism on the motivation to participate with a coefficient of 0.1, a weak effect, and finally, the path of acceptance of the experience provoked by the participation coefficient to 0.246 was obtained, a relatively suitable and robust effect size was accepted.

Table 7. Results of Research hypotheses

Hypotheses	Categories	β	2.5 %	97.5 %	p	$f2$
Extroversion-->motivation to participate	Men	0.36	0.09	0.58	0.000	0.120
	Women	0.28	0.05	0.35	0.005	
Agreeableness-->motivation to participate	Men	0.50	0.06	0.28	0.002	0.218
	Women	0.41	0.1	0.22	0.000	
Conscientiousness--> motivation to participate	Men	0.21	0.07	0.48	0.002	0.434
	Women	0.15	0.02	0.30	0.004	
Nervousness--> motivation to participate	Men	-0.29	0.23	0.78	0.000	0.117
	Women	-0.17	0.19	0.42	0.001	
Openness to experience--> motivation to participate	Men	0.39	0.05	0.48	0.001	0.246
	Women	0.30	0.09	0.35	0.001	

Figure 1 shows the path coefficient values between the variables.

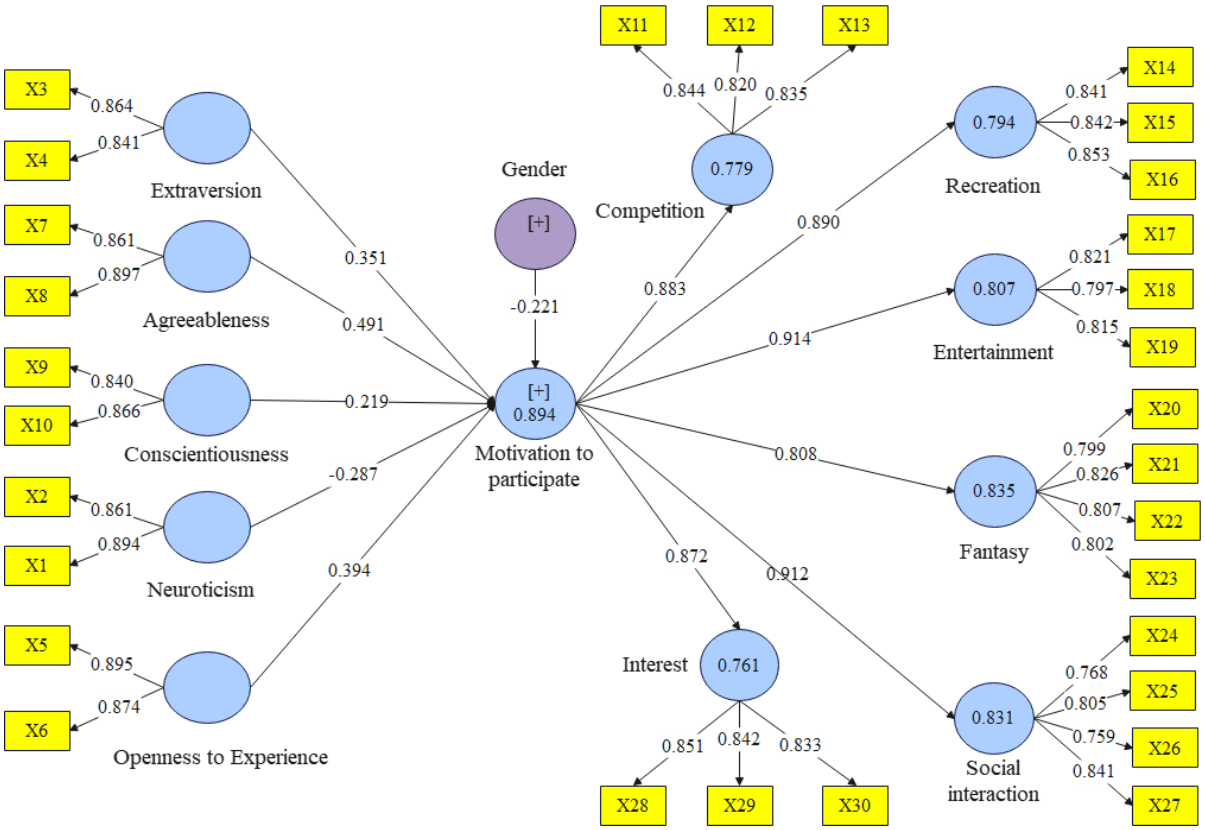

Figure 1. Test of the research model in standard mode

Figure 2 shows the t values in the relationships between the variables, all of which have a favorable value.

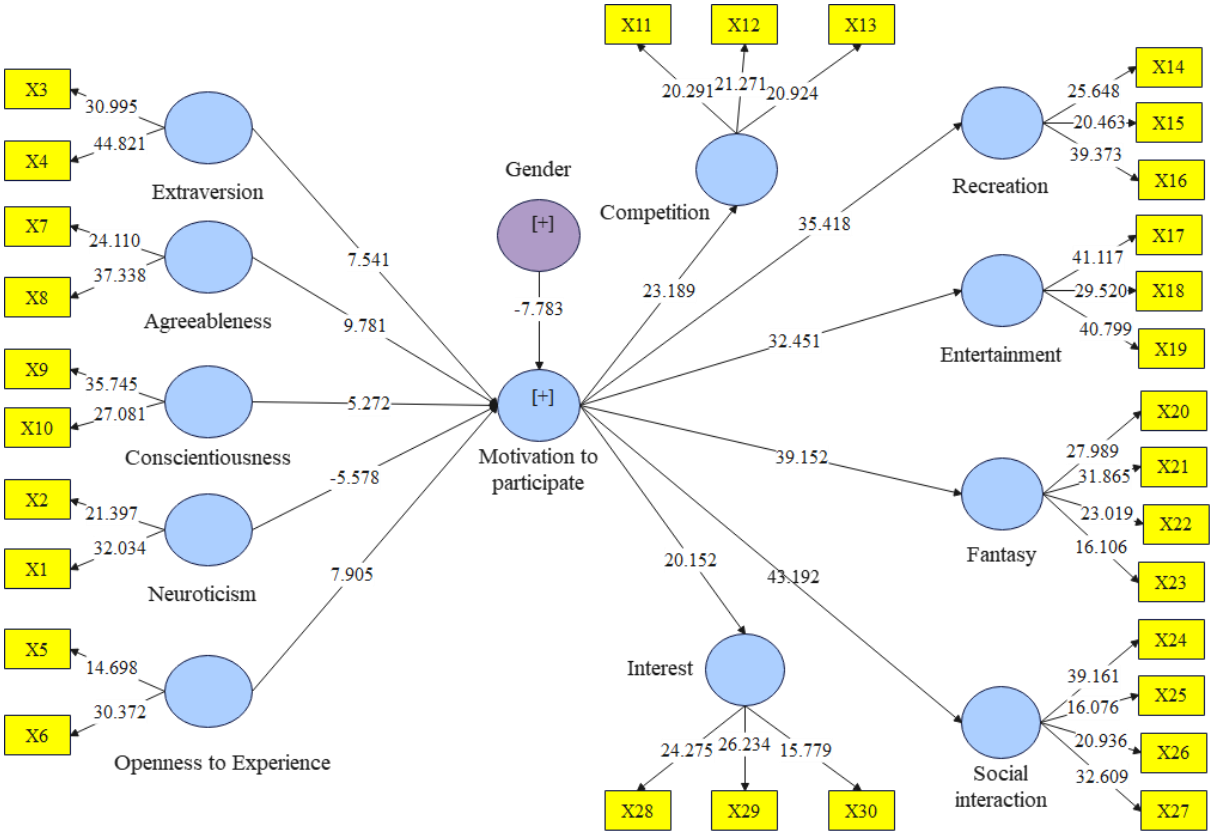

Figure 2. Test of the research model in Non-standard mode(t values)

Discussion and Conclusion

The present study examined the role of gender in the relationship between personality traits and participation motives of electronic sports players. The research findings revealed a significant and positive impact of extroversion on the motivation to participate in electronic sports. This finding aligns with previous studies conducted by Saffari and Moradi (2021), Panahi et al. (2022), Lewis and Sutton (2011), and Ghaderi and Ghaderi (2012). Extroverted individuals derive energy from the external world and enjoy interacting with others. They possess an inherent need for connection and collaboration, which leads them to engage in social activities and thrive in such environments. Therefore, extroversion is associated with motivation due to its positive and sociable nature. Extroverted individuals participate in sports because they recognize that it fulfills their need for social interaction. Sports serve as a crucial avenue for establishing social connections, especially among teenagers and young people. While it is important to acknowledge that introverts contribute to sports activities by virtue of their independence, creativity, and self-confidence, managers should consider the personality traits of electronic sports players to ensure a suitable sports environment that accommodates individuals with diverse traits.

The research model test results demonstrated a significant and positive influence of agreeableness on participation motivation. This finding is consistent with the research conducted by Jafarlou (2019),Saffari and Moradi (2021), and Steca et al. (2018). Agreeableness is a crucial personality trait that fosters the desire to engage in sports activities. Ghaderi and Ghaderi (2012) also identified agreeableness as a significant predictor of sports involvement. Agreeable individuals exhibit cooperative and friendly behavior, making them more inclined to participate in sports activities. Additionally, electronic sports managers should recognize that providing encouragement and recognition during sports activities can further enhance the motivation to engage in sports among individuals with high levels of agreeableness. Creating an atmosphere of empathy, dedication, and camaraderie among athletes is particularly beneficial in the presence of such individuals, making the sports environment conducive for maximum athlete participation.

Furthermore, the research model test results indicated a significant and positive impact of conscientiousness on the participation motivation of electronic sports players. These findings align with the research conducted by Jafarlou (2019), Saffari and Moradi (2021), Akbari et al. (2021), and Teshome, Mengistu, and Beker (2015). Task-oriented individuals possess a strong inclination to self-control and goal-oriented behavior. Their high level of responsibility enables them to readily assume various duties. By directing their participation in sports activities and assigning them significant sports-related responsibilities, it becomes easier to maintain their high motivation for participation. It is even possible to entrust them with the responsibility of motivating other athletes to participate in sports, as their sense of duty and responsibility motivates them to give their best efforts. The research findings also revealed a negative and significant impact of nervousness on the participation motivation of electronic sports players. This finding is consistent with the research conducted by Saffari and Moradi (2021), Jafarlou (2019), and de Hesselle et al. (2021). As nervousness increases in eSports players, their motivation to participate in sports diminishes. Neurotic individuals often lack emotional stability and are easily influenced by external factors. They frequently find themselves in stressful situations and experience feelings of anger, sadness, and failure. This not only creates an unpleasant sports environment for them but also renders the environment unappealing for others. Considering this, it is natural and expected for individuals with these personality traits to lack motivation for sports participation, as supported by the present research.

Additionally, the research findings indicated a positive and significant effect of openness to experience on the participation motivation of electronic sports players. This finding is consistent with the research conducted by Jafarlou (2019), Saffari and Moradi (2021), and Panahi et al. (2022). Based on the existing literature on openness and its definition, individuals with this personality trait exhibit characteristics such as curiosity, wisdom, clear thinking, flexibility, and a willingness to embrace new situations. Given these attributes, individuals with high openness to experience are highly motivated to participate in sports due to their curiosity about diverse conditions, situations, and activities, as well as their desire to encounter new challenges and issues. Psychologists assert

that flexible individuals are more resilient when confronted with changes and new experiences. They adapt better to unexpected changes and tolerate them more easily. Consequently, they are more inclined to explore unfamiliar and different environments, including the sports environment. Hence, the relationship between the dimension of openness to experience and the motivation to participate in electronic sports is both natural and expected. Electronic sports administrators should take note of this fact and not only facilitate the participation of players with high openness to experience but also pay attention to those who exhibit lower levels of openness. To motivate individuals with lower openness, leveraging the influence of players with higher levels of openness can prove more effective, as their guidance carries greater weight than direct encouragement in motivating participation in sports activities.

In the second part of the study, the researchers investigated the moderating effect of gender onthe relationship between personality traits and participation motives. The results indicated that gender does not significantly moderate this relationship. This finding suggests that the impact of personality traits on participation motives is similar for both males and females in the context of electronic sports. Therefore, it can be concluded that personality traits play a similar role in motivating participation in electronic sports regardless of gender. Overall, this study provides insights into the relationship between personality traits and participation motives in electronic sports. The findings suggest that extroversion, agreeableness, conscientiousness, and openness to experience positively influence participation motivation, while nervousness has a negative impact. These results can be valuable for electronic sports managers and administrators in understanding the motivations of players and creating an environment that fosters participation. Additionally, the study highlights the importance of considering individual differences in personality traits when designing sports programs and interventions.

Limitations and Further research

The present study has provided valuable insights into the relationship between personality traits and participation motives in electronic sports. The findings suggest that extroversion, agreeableness, conscientiousness, and openness to experience positively influence participation motivation, while nervousness has a negative impact. These results have implications for electronic sports managers and administrators in creating an environment that fosters participation and understanding the motivations of players. However, it is important to acknowledge the limitations of this research. First, the sample characteristics may limit the generalizability of the findings. The study may have been conducted with a specific population or a limited number of participants, which may affect the wider applicability of the results. Future research should aim for larger and more diverse samples to enhance the generalizability of the findings. Second, the cross-sectional design employed in this study limits the ability to establish causal relationships between personality traits and participation motives. Longitudinal or experimental designs would provide stronger evidence for understanding the direction and causality of the relationships. Future research could explore these relationships over time to gain a better understanding of how personality traits influence participation motives in electronic sports.

Third, the present research may have been conducted within a specific cultural or regional context, which can influence the relationship between personality traits and participation motives. Cultural and contextual factors may impact individuals' motivations and perceptions of sports participation. Therefore, caution should be exercised when generalizing the findings to other cultural or regional contexts. fourth, there may be other influential factors that were not considered in this research. Factors such as socioeconomic status, educational background, prior experience, and social support networks can also play a significant role in individuals' participation motives. Future studies could explore the influence of these factors to provide a more comprehensive understanding of the motivations behind electronic sports participation. In conclusion, while the present study contributes to our understanding of the relationship between personality traits and participation motives in electronic sports, it is important to consider its limitations. Addressing these limitations in future research will further enhance our knowledge in this field and provide a more nuanced understanding of the factors influencing participation in electronic sports.

Competing interests

The authors declared no conflict of interest.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgments

The authors thank all participants in this study.

References

Abbasi, A. Z., Asif, M., Hollebeek, L. D., Islam, J. U., Ting, D. H., & Rehman, U. (2021). The effects of consumer esports videogame engagement on consumption behaviors. *Journal of Product & Brand Management*, *30*(8), 1194-1211. doi:10.1108/JPBM-04-2020-2839

Abbasi, A. Z., Asif, M., Shamim, A., Ting, D. H., & Rather, R. A. (2023). Engagement and consumption behavior of eSports gamers. *Spanish Journal of Marketing - ESIC, ahead-of-print*(ahead-of-print). doi:10.1108/SJME-07-2022-0161

Akbari, M., Seydavi, M., Spada, M. M., Mohammadkhani, S., Jamshidi, S., Jamaloo, A., & Ayatmehr, F. (2021). The Big Five personality traits and online gaming: A systematic review and meta-analysis. *Journal of Behavioral Addictions, 10*(3), 611-625.

Bäcklund, C., Elbe, P., Gavelin, H. M., Sörman, D. E., & Ljungberg, J. K. (2022). Gaming motivations and gaming disorder symptoms: A systematic review and meta-analysis. *Journal of Behavioral Addictions, 11*(3), 667-688.

Barney, J. (2021). *Understanding the motivations of esports fans: The relationship between esports spectator motivations and esports fandom engagement.* University of Nevada, Las Vegas.

Bousquet, J., & Ertz, M. (2021). eSports: Historical Review, Current State, and Future Challenges *Handbook of Research on Pathways and Opportunities Into the Business of Esports* (pp. 1-24): IGI Global.

Cianfrone, B. A., Zhang, J. J., & Jae Ko, Y. (2011). Dimensions of motivation associated with playing sport video games: Modification and extension of the Sport Video Game Motivation Scale. *Sport, Business and Management: An International Journal, 1*(2), 172-189.

De Hesselle, L. C., Rozgonjuk, D., Sindermann, C., Pontes, H. M., & Montag, C. (2021). The associations between Big Five personality traits, gaming motives, and self-reported time spent gaming. *Personality and Individual Differences, 171*, 110483.

Delhove, M., & Greitemeyer, T. (2020). The relationship between video game character preferences and aggressive and prosocial personality traits. *Psychology of popular media, 9*(1), 96.

Funk, D. C., Pizzo, A. D., & Baker, B. J. (2018). eSport management: Embracing eSport education and research opportunities. *Sport Management Review, 21*(1), 7-13.

Ghaderi, D., & Ghaderi, M. (2012). Survey the relationship between big five factor, happiness and sport achievement in Iranian athletes. *Annals of Biological Research, 3*(1), 308-312.

Gosling, S. D., Rentfrow, P. J., & Swann Jr, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in personality, 37*(6), 504-528.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long range planning, 46*(1-2), 1-12.

Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*: Springer Nature.

Hayday, E. J., & Collison, H. (2020). Exploring the contested notion of social inclusion and gender inclusivity within esport spaces. *Social Inclusion, 8*(3), 197-208.

Hedlund, D. P. (2023). A typology of esport players. *Journal of Global Sport Management, 8*(2), 460-477.

Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: updated guidelines. *Industrial management & data systems, 116*(1), 2-20.

Hilbert. (2019). Gaming & gender: how inclusive are eSports? The Sports Integrity Initiative. Retrieved from https://www.sportsintegrityinitiative.com/gaming-gender-how-inclusive-are-esports

Hong, H. J., Wilkinson, G., & Rocha, C. M. (2023). The Relationship Between Basic Needs Satisfaction, Self-determined Motivation, and Burnout in Korean Esports Players. *Journal of Gambling Studies, 39*(1), 323-338.

ICVGF. (2023). *Computer game consumption information in Iran*. Retrieved from http://en.ircg.ir/

Jafarlou, S. (2019). The effect of big five personality traits on Motivation to participate in sport among students of Shiraz University. *Journal of Sport Management and Motor Behavior, 15*(29), 113-125. doi:10.22080/jsmb.2017.8725.2189

Khan, B., Ahmed, A., & Abid, G. (2016). Using the 'Big-Five'for assessing personality traits of the champions: An insinuation for the sports industry. *Pakistan Journal of Commerce and Social Sciences, 10*(1), 175-191.

Kim, S. J., & Kim, Y. S. (2022). Gender Inequality in eSport Participation: Exploring the Social Process of Women eSport Consumers. *Journal of Sport Behavior, 45*(4), 79-107.

Lewis, M., & Sutton, A. (2011). Understanding exercise behaviour: Examining the interaction of exercise motivation and personality in predicting exercise frequency. *Journal of Sport Behavior, 34*(1), 82.

Matuszewski, P., Dobrowolski, P., & Zawadzki, B. (2020). The association between personality traits and esports performance. *Frontiers in Psychology, 11*, 1490.

Panahi, M., Esmaeili, A., Goodarzi, K., & Roozbahani, M. (2022). Personality and Motivation for Participation in Sport: Mediating Role of Emotion Regulation. *Sport Psychology Studies (ie, mutaleat ravanshenasi varzeshi)*(Articles in Press).

Reyes, M. E. S., Davis, R. D., Lim, R. A. N. N., Lim, K. R. S., Paulino, R. F., Carandang, A. M. D., & Azarraga, M. G. S. (2019). Five-factor model traits as predictors of pathological gaming among selected Filipino gamers. *Psychological Studies, 64*, 213-220.

Rogstad, E. T. (2022). Gender in eSports research: a literature review. *European Journal for Sport and Society, 19*(3), 195-213. doi:10.1080/16138171.2021.1930941

Saffari, M., & Moradi, E. (2021). Examining the moderator role of gender in the relationships between motivations and enduring involvement of tourists in adventure sports activities. *Sport Management Studies, 13*(65), 37-62. doi:10.22089/smrj.2018.5021.1979

Shen, C., Ratan, R., Cai, Y. D., & Leavitt, A. (2016). Do men advance faster than women? Debunking the gender performance gap in two massively multiplayer online games. *Journal of Computer-Mediated Communication, 21*(4), 312-329.

Steca, P., Baretta, D., Greco, A., D'Addario, M., & Monzani, D. (2018). Associations between personality, sports participation and athletic success. A comparison of Big Five in sporting and non-sporting adults. *Personality and Individual Differences, 121*, 176-183.

Tang, T., Cooper, R., & Kucek, J. (2021). Gendered Esports: Predicting Why Men and Women Play and Watch Esports Games. *Journal of Broadcasting & Electronic Media, 65*(3), 336-356. doi:10.1080/08838151.2021.1958815

Teshome, B., Mengistu, S., & Beker, G. (2015). The relationship between personality trait and sport performance: The case of national league football clubs in Jimma Town, Ethiopia. *Journal of Tourism, Hospitality and Sports, 11*(1).

Ul Islam, J., Rahman, Z., & Hollebeek, L. D. (2017). Personality factors as predictors of online consumer engagement: an empirical investigation. *Marketing Intelligence & Planning, 35*(4), 510-528.

Zaib Abbasi, A., Alqahtani, N., Tsiotsou, R. H., Rehman, U., & Hooi Ting, D. (2023). Esports as playful consumption experiences: Examining the antecedents and consequences of game engagement. *Telematics and Informatics, 77*, 101937. doi:https://doi.org/10.1016/j.tele.2023.101937

Zhao, Y., & Lin, Z. (2021). Umbrella platform of Tencent eSports industry in China. *Journal of Cultural Economy, 14*(1), 9-25.