



The Factors Impacting Customer Intention to Engage in E-Sport Games

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ABSTRACT

E-sports is a new industry derived from online games. On November 18, 2003, China officially approved e-sports as the 99th sports event in China, and e-sports has since entered the regular operation and development system. The sports industry is a new type with great market potential and development prospects. The development of the economy has made e-sports a demand, and the development of e-sports has also promoted the development of new market patterns and comprehensive industries. This study aims to find the factors influencing consumers' intention to engage in e-sports games. The quantitative method based on questionnaires is applied. Descriptive statistics such as frequency, percent frequency, mean, and standard deviation are introduced. Various inferential statistical methods are used to test the hypothesis, particularly the Independent Sample t-test, the One-way ANOVA, and the Multiple Regression Analysis. The results gained from the study show that differences in Demographic Factors in terms of Gender, Age, Educational Level, and Hometown generate differences in Intention to engage in E-sports. Regarding Online Behavior, all aspects of Online Behavior generate differences in Intention to Engage in E-sport Games. The Semi-Log Linear Regression Analysis shows that Action and Casual Games have played an essential role in the Intention to Engage in E-sport Games. However, the former is more effective than the latter. Therefore, all the research results obtained are conducive to developing the theory. The demographic factor is crucial to the rapid growth of e-sports as it is the main factor determining the audience of e-sports. Only customers with the largest market share can rapidly develop under numerous factors.

Keywords: E-sports, Online Behavior, Game Characteristics, Intention to engage in e-sports games

1. INTRODUCTION

The e-sports industry includes game software developers, online game hardware providers, game market operators in various regions, network operators, event sponsors, downstream transmission and broadcast media, and end users. It can be divided into competitive industry and entertainment industry. The key link of this industry is the operation and promotion of events, which makes e-sports games reach the general public and become the competitive display industry. Electronic competition technology is the product of information and the development of science and technology. With the development of information technology, digital products are gradually infiltrating every aspect of our lives. Integrating high technology and physical education is unique to electronic sports and the competition between science and technology countries. The emergence of electronic competition technology is the inevitable product of science and technology development (Chen et al., 2021).

Since the 1990s, with the development of home computer video games, many kinds have come into people's sight. The late '90s were a time of rapid growth in video games, which became a huge commercial industry worldwide (Gamelook, 2015). With the rapid development of the world game industry, a new competitive sport, e-sports, emerged. A crucial game can attract tens of thousands of people by using this game to pass the time. Then, a Korean TV producer had an idea and started making StarCraft shows. Money was tight, and interstellar programming was cheap, but the humble computer game was a huge opportunity. This accidental historical opportunity led to the amazing e-sports in Korea.

On October 2, 1999, Programmer Korea Open (PKO for short) officially opened in Seoul, South Korea, hosted by Ornament, a subsidiary of the famous On Media TV station in Korea. With

the success of PKO, the Korean professional league gradually began to operate officially, and "e-sports" came into people's sight as a new term. Video games reached their apogee when the classic RTS game StarCraft was released. Under the impetus of the South Korean government, with the highly competitive view and admiration of gender, competition among StarCraft players play through the television broadcast to the nation and the world, with the augmentation of athletics and the construction of each link in the chain, as well as the sports industry, e-sports and form a new industry, electronic industry.

2. LITERATURE REVIEW

Cunwang (2018) proposed the concept of e-sports, which showed that the concept of e-sports originated from online games. The General Administration of Sport defines e-sports as an intellectual confrontational sport between people, with hardware and software as the core and information technology as the core, realized under the rules of sports. The two most basic characteristics of e-sport are e-sport and sports. "Electronic" refers to the way and means of sports. It means that sports are carried out with the help of various hardware and software facilities and the environment created by electronic information technology as the core. "Competitive" refers to the essence of sports: competition (Wang et al., 2019).

In a narrow sense, a game qualifies as a massively multiplayer online game (MMOG) when it hosts numerous players within the same virtual "game world". MMORPGs, MMORTSs, and MMOFPSs are just a subset of MMOGs. One prominent example is "Fantasy Westward Journey," boasting over 310 million registered users, 472 charging server groups, and a peak concurrent online user count of 2.71 million (recorded at 14:45 on August 5, 2012), making it the most concurrent online game in mainland China at the time. The game underwent a rebranding as "Fantasy Westward Journey 2" on June 24, 2013, and spawned a comic adaptation co-created by NetEase and Shanghai Mantangtang Culture Communication Co., Ltd. Meanwhile, "World of Warcraft" stands as Blizzard Entertainment's pioneering MMOG, originating as a massively multiplayer online role-playing game (MMORPG). Drawing from the lore of the company's real-time strategy game Warcraft, "World of Warcraft" offers a rich historical narrative infused with Warcraft's iconic events and heroes. Players immerse themselves in quests, embark on new adventures, traverse uncharted realms, battle formidable monsters, and much more (Qieyou, 2015).

It is important to study the reason why people playing game to improve the game quality (Liu& Shi, 2021). What motivates most e-sports players to engage in e-sports games, as explored by Wei et al. (2011) and Wang & Wang (2023)? Furthermore, how are these motivations both constrained and facilitated? E-sports games do fill a need, but what are those needs? (Wang et al., 2019). The researcher categorize these needs into two categories: the replacement of reality, new experiences and enjoyment, the realization of freedom, human values, and the construction of personal ideals. The researchers in this study chose not to focus solely on classification and instead aimed to provide a thorough exploration of the various reasons motivating players to participate in online games. As a result, there might be some repetition, but the goal was to ensure comprehensive coverage of the topic. Based on the previous study (Chen et al, 2021; He et al., 2005; Liang& Zou, 2019; Liu, 2007; Wang, 2013) some of the factors influencing the player to play games can be summed up as follows: (1) aesthetics and music. The game can provide the player with aesthetic, visual, and auditory enjoyment. (2) Anti-repression. The repression of ethics and codes of conduct that must be followed in reality can be released without care in e-sports games. (3) Experience another life (character experience). By changing roles, one can experience another life. (4) Interpersonal communication. The difference between networking in e-sports games and reality is that networking in e-sports games is simple, and one can show that part of oneself and achieve personal pursuits that are not possible in reality. (5) Novelty and excitement. Young people love novelty and excitement, but reality does not give them what these games can provide. (6) Take control. In e-sports games, the desire for leadership and control cannot be achieved. In addition, one controls the course of the story, the development of the characters, and even the life and death of other people.

3. METHODOLOGY

Despite receiving over 400 samples for this study, we opted to utilize 400 samples for enhanced data accuracy. The sampling approach employed non-probability sampling, specifically convenience sampling. Notably, the questionnaire's reliability surpassed 0.8, indicating robustness. The data predominantly represents the post-90s generation. Methodologically, we employed the single sample t-test, independent sample t-test, single-factor analysis of variance, and multiple regression analysis for data analysis.

4. RESULT AND DISCUSSIONS

4.1 Descriptive Statistics

4.1.1 Demographic Factor

As shown in Table 1, most respondents are male, recording about 66.75% unmarried (60.00%), with ages older than 23 accounting for about 40.00%. Most are students, with a proportion of about 30.25% enjoying a Bachelor's Degree, approximately 40.25%. Most of them, about 30.00%, live in the Second and Third Tier Cities with a monthly net income above 9,000 yuan, registering around 49.75%.

Table 1: The Frequency and Percent Frequency Classified by Demographic Factor

	Absolute Frequency	% Frequency
1. Gender		
a. Male	241	66.75
b. Female	159	33.25
2. Marital Status		
a. Not Married	240	60.00
b. Married	160	40.00
3. Age		
a. Under 21	81	20.25
b. 21-23	159	39.75
c. Over 23	160	40.00
4. Education		
a. Less than Bachelor	40	10.00
b. Bachelor	161	40.25
c. Master	118	29.50
d. Higher than Master	81	20.25
5. Occupation		
a. Student	121	30.25
b. Company Officer	80	20.00
c. Government worker	120	30.00
d. Another Occupation	79	19.75
6. Monthly Income		
a. Under 4000/M	40	10.00
b. 4000-6000/M	81	20.25
c. 6001-9000/M	80	20.00
d. Over 9000/M	199	49.75
7. Downtown		
a. First tire Cities	80	20.00
b. Second tier cities	120	30.00
c. Third tier cities	120	30.00
d. Fourth tier cities	80	20.00
Total	400	100.00

4.1.2 Online Behavior

As far as Table 2 is concerned, most of the respondents, about 40.00%, were first exposed to e-sports in college, around 50.00% have E-sports competition, and 40.00% of them played E-sports for more than a year, and about 70.00% play E-sports games more than five times a week and 40.00% play E-sports games for more than five hours at a time. Approximately 70.00% will

choose to engage in e-sports games with friends, 50.00% will play E-sports games at school, and 40.00% aim for money. Around 30.00% like to engage in e-sports games on their computers. About 20.00% like different types of games, and approximately 30.00% spend less than 1,000 yuan, 2,000 but less than 3,000 yuan, and more than 3,000 yuan on e-sports games each month. About 40.00% will abandon a game because they are bored with it.

Table 2: The Absolute Frequency and Percent Frequency Classified by Online Behavior Factor

Online Behavior	Absolute frequency	% Frequency
8. When did you first get into e-sports?		
a. Primary School	40	10.00
b. Middle School	80	20.00
c. High school	120	30.00
d. Collegiate	160	40.00
9. Does your school have an e-sports competition?		
a. Yes	200	50.00
b. No	200	50.00
10. Do you follow e-sports competitions?		
a. No attention	80	20.00
b. Occasionally	120	30.00
c. Often	200	50.00
11. How long have you been experienced in playing e-sports games?		
a. Less than 3 months	40	10.00
b. 3 but less than 6 months	80	20.00
c. 6 but less than a year	120	30.00
d. a year and more	160	40.00
12. How often do you play e-sports games per week		
a. Less than 3 times	40	10.00
b. 3-5 times	80	20.00
c. more than 5 times	280	70.00
13. How long do you play e-sports games each time		
a. Less than 1 hour	40	10.00
b. 1 but less than 3 hours	80	20.00
c. 3 but less than 5 hours	120	30.00
d. 5 hours and more	160	40.00
14. Your main partner in playing e-sports games is		
a. Family member	40	10.00
b. Friend	280	70.00
c. Student	40	10.00
d. Others	40	10.00
15. Where do you mainly play e-sports games		
a. At home	160	40.00
b. School	200	50.00
c. Others	40	10.00
16. What is your main purpose for playing the game?		
a. Entertainment	80	20.00
b. Making Friends	80	20.00
c. Become a Master of the Game	80	20.00
d. Earning Income	160	40.00
17. What is your favorite gaming medium?		
a. A. Computer Games	120	30.00
b. B. Video Games	80	20.00
c. C. Arcade Games	80	20.00
d. D. Handheld Games (including mobile phone games, PDA games)	80	20.00
e. E. Others	40	10.00

18. Which of the following genre combinations of games are you most looking forward to?		
a. Business Operation + Role Play	80	20.00
b. War strategy + business operation	80	20.00
c. War strategy + character development	80	20.00
d. Role play + simulation of life	80	20.00
e. Other	80	20.00
19. How much will you spend every month on E-sports?		
a. Less than 1,000 RMB/month	120	30.00
b. 1,000 but less than 2,000 RMB/month	40	10.00
c. 2,000 but less than 3,000 RMB/month	120	30.00
d. 3,000 RMB/month and more	120	30.00
20. Why would you leave an online game		
a. Boredom with the game	160	40.00
b. The game updates too slowly	80	20.00
c. The departure of a friend	80	20.00
d. Poor customer service	40	10.00
e. Others	40	10.00
Total	400	100.00

4.1.3 Game Characteristics

From Table 3, the Action Game is more popular than the Casual Game, with a mean of 2.9214 compared to 2.7250. Overall, the mean score is approximately 2.8778, which is average.

Table 3: The Mean and the Standard Deviation of the Game Characteristics Factor

21. Game Characteristics	Mean	S.D	Mean Rank
21.1 Action Game	2.9214	0.52841	1
21.2 Casual Game	2.7250	1.33841	2
Overall	2.8778	0.47578	

4.2 Inferential Statistics

4.2.1 Differences in Demographic Factors Generate Differences in Intention to Engage in E-sport Games

1. Differences in gender generate differences in intention to engage in e-sport games

$$H_0: \mu_1 = \mu_2$$

$$H_a: \mu_1 \neq \mu_2$$

Table 4: The Independent Samples t-test of the Gender Factor

Items	Gender	N	Mean	S.D.	t-value	p-value
Intention to Play E-sports	Male	241	4.5533	.28553	31.685	.000
	Female	159	3.8742	.13871		

It can be seen from Table 4 that the p-value of Intention to engage in E-sport Games by gender is about 0.000, which is much lower than the critical value of 0.05. Therefore, the null hypothesis H_0 is rejected, which means that Differences in Gender generate differences in Intention to engage in E-sport games.

2. Differences in marital status generate differences in intention to engage in e-sport games

$$H_0: \mu_1 = \mu_2$$

$$H_a: \mu_1 \neq \mu_2$$

Table 5: The Independent Samples t-test of the Marital Status Factor

Items	Status	N	Mean	S.D.	t-value	p-value
Intention to play E-sports	Not Married	240	4.3049	.43632	1.338	.182
	Married	160	4.2510	.36342		

It can be seen from Table 5 that the p-value of Intention to engage in E-sport Games by Marital Status is about 0.182, which is much higher than the critical value of 0.05. Therefore, the null hypothesis H_0 is accepted, meaning that differences in Marital Status generate no Differences in Intention to engage in E-sport Games.

3. Differences in age, education, occupation, monthly income, and hometown generates differences in intention to engage in e-sport games

$$H_0: \mu_i = \mu_j$$

$$H_a: \mu_i \neq \mu_j \text{ at last one Pair where } i \neq j.$$

Table 6: The One-way ANOVA of Intention to Engage in E-sports Games Classified by Age, Education, Occupation, Monthly Income, and Townhome

Factor	Items	SS	Df	MS	F=value	p-value
Age	Between Groups	13.579	2	6.789	50.666	.000
	Within Groups	53.199	397	.134		
	Total	66.778	399			
Education	Between Groups	2.249	3	.750	4.602	.004
	Within Groups	64.528	396	.163		
	Total	66.778	399			
Occupation	Between Groups	1.025	3	.342	2.058	.105
	Within Groups	65.752	396	.166		
	Total	66.778	399			
Monthly Income	Between Groups	.907	3	.302	1.819	.143
	Within Groups	65.870	396	.166		
	Total	66.778	399			
Hometown	Between Groups	9.251	3	3.084	21.226	.000
	Within Groups	57.527	396	.145		
	Total	66.778	399			

It can be seen from Table 6 that the p-value of Intention to engage in E-sport Games classified by Age, Education, and Hometown is less than the critical value of 0.05. Therefore, the null hypothesis H_0 is rejected, which means that Differences in Age, Education, and Hometown generate differences in Intention to engage in E-sport Games. However, Differences in Occupation and Monthly Income generate no Differences in Intention to engage in E-sport Games since their p-values are higher than 0.05.

4.2.2 Differences in Online Behavior Generate Differences in Intention to Engage in E-sport Games

$$H_0: \mu_i = \mu_j$$

$$H_a: \mu_i \neq \mu_j \text{ at last one Pair where } i \neq j.$$

Table 7: The One-way ANOVA of Intention to Engage in E-sport Games based on the Online Behavior Factor

Factor	Items	SS	df	MS	F=value	p-value
First Experience	Between Groups	37.981	3	12.660	174.104	.000
	Within Groups	28.796	396	.073		
	Total	66.778	399			
Sport Competition	Between Groups	8.111	2	4.056	27.444	.000
	Within Groups	58.667	397	.148		
	Total	66.778	399			
Experience Time	Between Groups	53.537	3	17.846	533.723	.000
	Within Groups	13.241	396	.033		
	Total	66.778	399			

Factor	Items	SS	df	MS	F=value	p-value
How Often Play	Between Groups	21.778	2	10.889	96.064	.000
	Within Groups	45.000	397	.113		
	Total	66.778	399			
How Long Play	Between Groups	40.667	3	13.556	205.583	.000
	Within Groups	26.111	396	.066		
	Total	66.778	399			
Main Partner	Between Groups	24.873	3	8.291	78.350	.000
	Within Groups	41.905	396	.106		
	Total	66.778	399			
Where You Play	Between Groups	17.000	2	8.500	67.791	.000
	Within Groups	49.778	397	.125		
	Total	66.778	399			
Main Purpose	Between Groups	22.611	3	7.537	67.577	.000
	Within Groups	44.167	396	.112		
	Total	66.778	399			
Favorite Game	Between Groups	51.593	4	12.898	335.509	.000
	Within Groups	15.185	395	.038		
	Total	66.778	399			
Game Combination	Between Groups	49.556	4	12.389	284.145	.000
	Within Groups	17.222	395	.044		
	Total	66.778	399			
Money Spent	Between Groups	39.370	3	13.123	189.616	.000
	Within Groups	27.407	396	.069		
	Total	66.778	399			
Leave Game	Between Groups	29.000	4	7.250	75.805	.000
	Within Groups	37.778	395	.096		
	Total	66.778	399			

It is evident from Table 7 that the p-values of all aspects of Online Behavior are equal to 0.000, which is much less than the critical value of 0.05. Therefore, the null hypothesis H_0 is rejected, which means that differences in all aspects of online behavior generate differences in intention to engage in e-sport games.

4.2.3 Game Characteristics Influence on Intention to Engage in E-Sports Games

In order to determine the impact of Game Characteristics on Intention to engage in e-sports games, three types of multiple linear regression analysis are applied. Study the details, which are as follows.

1. The Multiple Linear Regression Analysis

$$Y = aX_1 + bX_2$$

Where Y = Intention to engage in E-sport games; X_1 = Action Game; X_2 = Casual Game

The results obtained from the study are written in terms of equation (1).

$$Y = 2.853 + .337X_1 + .163X_2 \dots \dots \dots (1)$$

(.000) (.000) (.000)

Adjusted $R^2 = 0.413$

2. The Multiple Double-Log Linear Regression Analysis

$$\ln(Y) = a + b\ln(X_1) + b\ln(X_2)$$

Where Y = Intention to engage in E-sport games; X_1 = Action Game; X_2 = Casual Game

The results from the study can be seen in equation (2).

$$\ln(Y) = 1.122 + 0.228\ln(X_1) + 0.103\ln(X_2) \dots\dots\dots (2)$$

(.000) (.000) (.000)

Adjusted R² = 0.682

The Multiple Semi-Log Linear Regression Analysis

$$Y = a + b\ln(X_1) + b\ln(X_2)$$

Where Y = Intention to engage in E-sport games; X₁ = Action Game; X₂= Casual Game

The results from the study can be seen in equation (3).

$$Y = 2.865 + 0.986\ln(X_1) + 0.441\ln(X_2) \dots\dots\dots (3)$$

(.000) (.000) (.000)

Adjusted R² = 0.686

According to the above 3 equations, it is evident that the Multiple Semi- Log-linear regression Analysis is the best for this study because its Adjusted R² (0.686) is the highest compared to the others. In this Multiple Semi-Log Linear Regression Analysis, it can be concluded that the coefficient of X₁ is much higher than that of X₂, meaning that the Action Game is more important than the Casual Game. It can be found that after the rapid development in recent years, e-sports has not only made a leap in capturing user groups but also become more diversified in product development. The capture of users in e-sports has been upgraded from the single creation of a good game itself. The e-sports grabs users mainly through the following aspects: (1) Games themselves: e-sports often rely on games to attract and retain users. Games are entertaining, challenging, and social and can appeal to many users. At the same time, the competitive elements and rewards in games can motivate users to invest more time and energy. (2) Social media and community: e-sports communities and platforms are important channels to attract and retain users. These platforms allow users to share gaming experiences, watch their favorite teams and players, interact with other users, and form communities. (3) E-sports events: E-sports competitions are essential to attracting users. Major e-sports events, such as international e-sports competitions (such as the Ti International Invitational), can attract millions of viewers. In addition, many amateur and professional e-sports events in various regions can inspire more people to participate in e-sports. (4) Live streaming platforms and media: e-sports live streaming platforms (such as Twitch YouTube Gaming) and related media can amplify the impact of e-sports. There is a large amount of live e-sports content on these platforms, including professional players' competitions, instructional videos, and coverage of e-sports events. (5) Sponsorship and advertising: Sponsors often favor e-sports teams and events. These sponsors can leverage e-sports' reach and audience base to promote their products and services. In addition, e-sports events will also attract more viewers through advertising. (6) Mobile devices and apps: With the development of mobile devices and apps, more and more users are participating in e-sports through their phones or tablets. The convenience of mobile devices and apps has made it possible for more people to participate in e-sports anytime, anywhere.

In short, the grasp of e-sports for users is all-round, involving multiple fields. Successful e-sports projects must comprehensively consider the above aspects to enhance their attractiveness and competitiveness. E-sports for product innovation has been from a single production of different kinds of e-sports products for more dimensions of product production and are mainly realized through the following aspects: (1) Gameplay Innovation. Innovation in the gameplay of e-sports games is crucial to engaging players. This innovation can come from entirely new game mechanics, unique game modes, or an expansion of traditional gameplay. For example, the 5v5 tower defense mode in League of Legends cleverly combines the classic MOBA gameplay with tower defense elements to bring players a new game experience. (2) Hero/character Design. In e-sports games, hero and character design are key to engaging players. Each character should have unique skills and fighting styles to add variety and playability to the game. At the same time, the appearance and personality of the character should be unique to appeal to different groups of players. For example, the Monkey King character in Honor of Kings, with its flexible skill set and high-speed fighting style, has been loved by many players. (3) Game Map and Scene. Designing

game maps and scenes is also essential to e-sports game innovation. The unique map design can provide various tactical options to increase the game strategy. The rich scene switching can bring the player visual freshness and improve the game's appeal. For example, multiple maps in Overwatch, each with unique tactical points and landscape design, provide different combat experiences for players. (4) Game Balance. Game balance is one of the core elements of e-sports games. Good balance requires careful design of character abilities, proper map attributes, and reasonable control of game pacing. DOTA2, for example, keeps the game balanced by constantly tweaking the hero's abilities and map attributes and mechanics that improve the game's pacing. (5) Gaming Social Experience. In e-sports games, the social experience is just as necessary. The design of friend systems, chat features, and social events can all influence player engagement and loyalty. For example, Crossfire's friend invites, team system, and regular online and offline events provide a good social experience and add to the game's appeal. (6) Games and Events. Events and events in e-sports games are an effective way to attract and retain players. A reasonable competition system, a challenging reward system, and a variety of events can increase the popularity of games. For example, "League of Legends" global finals, mid-season, regional leagues, and "King of Glory" KPL professional league provide players an intense and exciting game-watching experience. (7) Game Data Visualization. Data visualization is essential in e-sports games to enhance the game experience and aid player decision-making. Intuitive data statistics, reasonable visualization, and in-depth data analysis can help players better understand the game and improve their competitiveness. For example, the number statistics on the board in "Many Self-moving Chess" and the battle statistics in "Genting Chess" provide important decision-making references for players. (8) Game Sound and Visual Design. In e-sports games, sound is as important as visual design. Good sound selection, unique screen Settings, and gorgeous special effects rendering can bring players an immersive game experience. For example, the realistic sound feedback, high-definition screen rendering, and rich special effects display in "Peace Elite" bring players an immersive game feeling.

5. CONCLUSION

In summary, product innovation in e-sports games must be considered and implemented from multiple aspects, from gameplay innovation hero/character design to comprehensive innovation in sound and visual design, to create attractive and competitive products. This study aligns with Dai (2023) which underscores the significance of innovation in ensuring the long-term sustainability of the game. At the same time, optimizing and improving game balance, social experience, events, and data visualization are critical elements to improving the quality of games and user experience. This suggestion is supporting the study by (Guo, 2015; He et al., 2005; Liang & Chou, 2019) for optimum game development. The following suggestions can be made for the development of e-sports. (1) According to the analysis of demographic factors, it can be concluded that if we want to get more users from different user groups in the future, we need to do 1. Accurate positioning: First, we need to determine the target customer group through market research and data analysis to understand the needs and preferences of different groups of people and then develop accurate marketing strategies for different groups. (2) Expand publicity: Promote through various channels, including social media, TV, and Internet ads. In the publicity process, we should pay attention to shaping the brand image and emphasizing the uniqueness and attractiveness of the game. (3) Optimize user experience: Provide personalized game experience for different groups. For example, for young people, we can develop game content suitable for them to provide a relaxed and lively game atmosphere. For white-collar workers, more challenging and competitive game content can be provided. (4) Build a game community that encourages interaction and communication between players. Through the community, one can promptly learn about the needs and feedback of players and constantly optimize the game experience. At the same time, the community can be used to organize a variety of online and offline activities to increase the stickiness of players. (5) Personalized recommendation: Provide personalized game recommendations to different groups through data analysis and artificial intelligence technology. For example, recommend game content and items appropriate for players based on their gaming behavior and preferences. (6) Cross-platform cooperation: Expand the

popularity and audience scope of the game through cooperation with other media, entertainment, and other platforms. For example, it can be linked with the entertainment industry, such as movies and music, and attract different groups of people through cooperative publicity and promotion. In short, for different groups of customers, online game operators need to develop accurate marketing strategies, constantly optimize the game experience, expand publicity channels, and provide personalized recommendations and marketing with the help of artificial intelligence technology.

According to the analysis of the characteristics of the game, although the game is divided into action and leisure two categories because there are constantly new e-sports products being produced, it is imperative to provide attractive game content, constantly update and optimize the game content, add new gameplay and functions, in order to maintain the interest and activity of players. For example, new maps, levels, characters, and missions can be introduced. Concerning the online behavior analysis of e-sports users, it can be concluded that if we want to gain the recognition and support of different user groups in the future, we need to strengthen the social elements of the game, increase competition and reward mechanisms, provide personalized customization, optimize the game experience and interface design, provide good user service and security and other aspects of user experience optimization to enhance the retention of e-sports products for customers.

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