

# Discussion on The Consumers Motivation to Watch E-sports Game and The Follow-up Behaviors Intention

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## ABSTRACT

This study aims to explore the inner history of the behavior of E-sports game video viewers, mainly to explore the relationship between motivation, experience and perceived value to behavioral intention. The research subjects were users who have viewed the video of E-sports game in the past six months, used the purposive sampling method to distribute surveys online, 410 questionnaires out of 365 were completed and analyzed, achieving 89% effective collection rate. The obtained data were hypothesized and verified by descriptive statistics, confirmatory factor analysis and structural equation model. The results of this study are as follows: most viewers of E-sports game video are male, age 19-24, the frequency of viewing is at least once a day, no income and gaming games without spending any money; the viewers have the deepest feeling of "entertainment motivation" in viewing motivation, deepest feeling of "think experience" in viewing experience, deepest feeling of "utilitarian value" in perceptual value and deepest feeling of behavioral intention in "I will focus in next upgrade information". The motivation of E-sports game video viewers can directly and indirectly affect the perceived value through the viewing experience, and thus promote the viewer's subsequent intention to produce positive behavior. Based on the results, the suggestions for further studies were offered to the competition game industry and related research as a reference.

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## CCS Concepts

• Information systems → Information systems applications → Mobile information processing systems.

## Keywords

E-sports game; entertainment motivation; experience marketing.

## 1. INTRODUCTION

In 2003, China Sports Federation listed E-sports as the country's 99th official sports event, becoming the first country list E-sports as a formal sport in the world. Today, E-sports game have become one of the official sports in the world. According to the statistics of [1], the global E-sports production value will reach 910 million US dollars, an annual increase 38% [1]. E-sports game has become a leisure activity for people to relax their minds and vent their stress. With the progress and popularization of the Internet, the leisure activities through the Internet becoming more and more abundant. Therefore, the business opportunities brought by the Internet increasing day by day, the operators of various industries hope to rushing into this fertile market. "Dota 2" is one of the main online game projects for E-sports game in recent years, and is the most people view E-sports game video in Twitch. The scope driven by the E-sports industry is no just a personal experience, players will also try to go through the platform to understand the content of the game. Why do viewers willing invest time to watch E-sports game video has become an issue that practical and academic circles are eager to explore.

Today, the video of E-sports game is mainly based on sensory marketing, through the experience an individual event to allow consumers to impress. Experience is like a symbol of the mind, whether the time is real, dreamlike or virtual [2]. The satisfaction of the experience is very different with physical goods, because the experience can be extended indefinitely, especially in E-sports game video. For the viewer, the satisfaction is obtained by viewing the experience of other players, through the viewing experience affecting inner cognition and changing participation behavior. Therefore, understand the viewing experience and meet

the needs of viewer's, can help the E-sports game to create more experience features.

Perceptual value is the consumer's evaluation the utility of the product [3]. The higher the consumer perceives the value of the product, the higher the willingness to continue purchase in the future [4]. The cognition can trigger emotional reactions, if the customer thinks that the value obtained through the transaction is higher, the degree of inner emotional satisfaction will be higher [5]. Therefore, E-sports viewers must evaluate their true need for value perception.

For E-sports game, if can grasp and predict the future behavior of the viewer, means can establish a stable relationship with the viewer. Behavioral intention is the tendency of individuals to take certain actions for certain behaviors [6]. The positive behavioral intention of consumers includes the willingness to share the goodness with others, willing to recommend to others, willing to be loyal to the unit, willing to continue to buy and willing to spend more [7]. Viewers feel very worthwhile after viewing the game, they are willing to continue watching and recommend it to others, which can promote the popularity of the game. Therefore, this study intends to investigate the relevance of the participation motivation, viewing experience, perceived value and behavioral intention of the Dota 2 E-sports game viewers. It is expected that the research results will help to understanding the influencing factors of E-sports game viewer

## **2. LITERATURE REVIEW**

### **2.1 E-sports**

E-sports (Electronic Sports), also known as Competitive Gaming, Professional Gaming, Cyber Sports or V-Sports. E-sports is a smart sport, it helps people through high-tech software and hardware equipment to exercise their thinking, coordination, reaction, heart, eyes, arms, legs, willpower, and also training the team spirit. All-China Sports Federation (ACSF) defined E-sports as follows: "E-sports is a sports competition through the computer hardware, software, keyboard and mouse. It has a unified rule and conducts competitions in a public, impartial and fair environment. It is a sports activity aimed to improving the quality of players."

According to Twitch statistics, the Twitch viewers spent 355 billion minutes in viweing E-sports game video content on the streaming platform in 2017, up from 72 billion recorded in 2012. Dota 2 is the most viewed E-sports game on the Twitch platform, the average total time was 51.6 minutes and it is the top ranked leader in E-sports game [8]. Then, according to the statistics of NewZoo 2016, among the top ten viewing video games in the world, the top ranked leader is Dota 2 too [9]. Dota 2 is a unique game, it not only need the outstanding personal strategic skills, and need the excellent understanding of the organizational team. Viewers can learn the knowledge-based operations of different strategies and generate more gaming experiences through viewing Dota 2 video. Therefore, this study using the E-sports game "Dota 2" as the subject of this research.

### **2.2 Viewing Motivation**

"Viewing Motivation" is the inner drive that causes the audience to watch the game, the inner drive will prompt the audience to engage in the behavior of watching sports events [10]. The definition of viewing motivation in this study is the E-sports viewers are motivated by some incentives or to meet specific needs and then produces the power in watching E-sports game through the Internet platform. The viewing motivation is due to the need of personal internal factors or the stimulation of the

external environment to relieve the stress and relax the body and mine, through the content of viewing [11]. Therefore, the E-sports game fans can watch the E-sports on-site or broadcast through online platform resources or newspapers and magazines, which will form an experience of viewing. This study tries to understand the viewing motivation of the audiences who views the E-sports game video, and then further discusses the results of E-sports game.

### **2.3 Viewing Experience**

"Experience" is extended by "Experience Marketing", means the response after participate or engage in experience activities, is a kind of cognition and feeling [2]. The definition of the viewing experience in this study is the feelings produced by a series of stimuli when the viewer participates in or exposed to the competition. Viewers can have different excitement and experience while watching videos, through the effects of combat special effects, the equipment of virtual heroes, the presentation skills of live broadcasters, and the cheering response of the audience. Different experiences will result in different experiences, if can make the E-sports viewers satisfy and enjoy the experience, it will help to increase the consume value of E-sports game, and thus increase the viewer's loyalty.

### **2.4 Perceptual Value**

"Perceived Value" is defined as the utility results after measuring the "acquisition" and "sacrifice", an inherent personal subjective feeling [12]. This study defines perceptual value as the rewards and the previous expectations of E-sports viewers in the game by watching the E-sports game video. The rewards are compared with the expectations and the actual feelings in overall evaluation. This study hopes to understand the perceptual cognition of viewers after watching the E-sports game video, thus to discuss the perceived value of E-sports game viewers.

### **2.5 Behavioral Intention**

"Behaviour Intention" is a subjective judgment of future behavior patterns [13]. In the process of participation, the E-sports viewers will compare their own expectations and actual experiences to predict the attitudes and behaviors of the future. Behavioral intention refers to the specific behavioral tendency that a consumer or a company may take after consumption, when consumers have positive intentions about the product or business, will have a variety of positive preferences for the company. Therefore, this study tries to understand the final positive behavior on viewing the E-sports game video.

### **2.6 Research between the Viewing Motivation, Viewing Experience, Perception Value and Behavioural Intention**

The study of [14] showed that there was a significant correlation between motivation and experience. The higher the motivation, the deeper the experience, and the benefits will increase. [15] point out that participation motivation is significantly related to the value of experience, it is a motivational factor for the environment that is beneficial to the body and mind, it will affect the emotional value of the audience experience value. Through the related research, the viewing motivation can influence the audience to have an internal drive in viewing the E-sports game video, the viewing motivation has a direct impact on the viewing experience.

Hypothesis 1 (H1): The viewing motivation of E-sports game video viewers has a significant positive direct impact on the viewing experience.

In the study of [16], the quality of the experience of tourists' historic sites is significant and will positively affect their perceived value. Therefore, the related research show that the experience can create higher perceived value, if the E-sports game can take advantage of the experience to enhance the viewer perceived value, the E-sports game will expand greater popularity.

Hypothesis 2 (H2): The viewing experience of E-sports viewer has a significant positive and direct impact on perceived value.

The result of [17] show that the motivation has a significant positive impact on perceived value. Therefore, the higher the motivation of the viewer, the greater the perceived value of the viewer. If the E-sports can grasp the motive factors of viewing and meet the needs of the viewer, the viewer will evaluate the perceived value in the game.

Hypothesis 3 (H3): The viewing motivation of E-sports viewers has a significant positive and direct impact on perceived value.[3] think that the higher the perceived quality of the service or product provided to the customer, the higher the customer's value will be. High perceived value will positively influence the customer's willingness to purchase, the perceived value and the willingness to purchase behavior have a positive impact relationship. [17] show that Perceptual value has a significant positive correlation with behavioral intentions. The result of [18] also show that the higher the perceived value, the higher the behavioral intention. The good experience results will enable the viewers good feeling in the game, and then urge the viewer to be willing to engage or recommending others to viewing the E-sports game video.

Hypothesis 4 (H4): The perceived value of E-sports viewer has a significant positive direct impact on behavioral intentions.

Hypothesis 5 (H5): The viewing experience of E-sports viewer has a significant positive and direct impact on behavioral intentions.

### 3. RESEARCH METHOD AND PROCEDURE

The participants in this study were the viewer who once viewed the Dota 2 E-sports game video through the Internet. In this study, a purposive sampling method was used. The pre-questionnaires were sent through the Internet from 10 March 2017 to 20 March 2017, a total of 110 questionnaires were retrieved. After subtracting the invalid questionnaires, the valid questionnaires were 108 pre-tests analyzes. After the revision of the pre-questionnaire, the formal questionnaires were distributed through the network from 1 April 2016 to 25 April 2016. A total of 410 questionnaires were retrieved, and 365 questionnaires valid responses. The valid response rate was 89%.

After referring to the relevant literature, this study using questionnaire survey adapted into "behavior questionnaires of viewing the E-sports game video" and each issue was measured by using the Likert Seven-Point Scale. In this study, the Appreciation Motivation Scale is based on the measurement of [19] and divided into four facets, the "knowledge motivation", "self-esteem motivation", "social motivation" and "entertainment motivation". The Viewing Experience Scale mainly refers to the measurement of [2], and divided into five facets, the "sensory experience", "emotional experience", "think experience", "action experience" and "associated experience". The Perceptual Value Scale is based on the measurement of [20], and divided into three facets, the "utilitarian value", "happiness value" and "social

value". The Behavioral Intention Scale is based on the measurement of [21] reproduces the scale of the study.

In this study, mainly using the Amos statistical model to analyze the data, used descriptive statistics, confirmatory factor analysis, and structural equation modeling to understand the issues and according to the purpose of the study, get on discussed

## 4. RESULTS AND DISCUSSIONS

### 4.1 Sample and Data Collection

The study subject features are as follows: male 310 (84.9%), female 55 (15.1%); the main age group were concentrated in 19-24 years old 217 (59.5%); 240 students (65.9%); the frequency of viewing is at least once a day 181 (49.6%), no income person 172 (47.1%); gaming games without spending any money 182 (49.9%).

### 4.2 Confirmatory Factor Analysis Assessment Indicators

This study mainly to explore the viewing motivation, viewing experience, perceived value and the behavioral intention to verify the results of the mode hypothesis adaptation. Through the descriptive statistics to test the recovery of the data, use the Confirmatory Factor Analysis (CFA) to verify that the measurement tool is appropriate for the study population, detect the reliability and validity of the facet, and including the convergence validity, the difference validity, the project reliability, and the combined reliability.

According to [22], the skewness criterion for each variable needs to be between  $\pm 2$  and the kurtosis criterion should be between  $\pm 7$ . The results of the analysis show that the samples recovered in this study are in compliance with the normality test standards. The multivariate normal test is the composite reliability (C.R.) value of Multivariate is  $\geq 5$  [23]. The multivariate has a composite reliability value of 53.24, indicating that the data in this study is non-multivariate. The validity of this study will through the pattern matching test and confirmatory factor analysis to test the convergence and validity of the distinction. Reliability is tested by project reliability and combination reliability by the factor load and measurement error of the verification factor analysis.

The overall moderate of viewing motivation all reach test standard, so no correction mode. The results of CFA show that viewing motivation scale was in convergence validity. The knowledge motivation factor load is between .71 ~ .89, the self-esteem motivation factor load is between .85 ~ .76, the social motivation factor load is between .74 ~ .84, and the entertainment motivation factor load is between .58 ~ .92. In addition, the reliability measurement of the viewing motivation scale, the project reliability is between .18 ~ .85; the composite reliability is .78 ~ .86; the average variation extracted (AVE) of each facet is between .54 ~ .67. According to [24], the composition reliability (CR) must be above 0.7 and according to [25], the standard value of AVE must be greater than 0.5. After the analysis, the values obtained are above the standard. This can be judged that the research motivation of this study has good reliability and validity.

Most of the overall viewing quality of the viewing experience reach test standard, so mode corrections are required. The results of CFA show that viewing experience scale was in convergence validity. The sensory experience factor load is between .63 ~ .81, the emotional experience factor load is between .59 ~ .93, the thinking experience factor load is between .67 ~ .79, the action experience factor load is between .66 ~ .69 and the associated experience factor load is between .56 ~ .82. In addition, the reliability measurement of the viewing experience scale, the

project reliability is between .31 ~ .73; the composite reliability is .72 ~ .28; the average variation extracted (AVE) of each facet is between .46 ~ .65. After the analysis of the scale, the obtained values are all above the standard, so that the viewing experience of the study can be judged to have good reliability and validity.

The overall moderate of perceptual value all reach test standard, so no correction mode. The results of CFA show that perceptual value scale was in convergence validity. The utilitarian value factor load is between .68 ~ .75, the enjoyment value factor load is between .57 ~ .76 and the social value factor load is between .75 ~ .84. In addition, the reliability measurement of the viewing motivation scale, the project reliability is between .32 ~ .70; the composite reliability is .72 ~ .85; the average variation extracted (AVE) of each facet is between .46 ~ .65. After the analysis, the values obtained are above the standard. This can be judged that the perceived value of this study has good reliability and validity.

The overall fit of the behavioral intentions in the absolute fit index RMSEA, the value-added index TLI and the simple fit index PNFI, CN and NC are not up to standard, showing that the original risk perception overall model needs to be revised to further examine the factor load of each item in the behavioral intentions. After deleted the question, the factor load of the behavioral intention scale factor is above .50, which is between .64 ~ .79. In addition, the reliability measurement of the behavioral intentions scale, the project reliability is between .41 ~ .63; the composite reliability is .82; the average variation extracted of each facet is .53. After the analysis of the scale, the values obtained are above the standard, so that the behavioral intentions of the study can be judged to have good reliability and validity.

### 4.3 Analysis of Current Status

In viewing motivation of E-sports game viewers, the average value of each value is more than 4, indicating that the viewer's cognitive quality in viewing motivation is up to the above. Among then, "entertainment motivation" had the highest perception (M = 5.76, SD = 0.92), followed by "knowledge motivation" (M = 5.67, SD = 1.04), "self-esteem motivation" (M = 4.91, SD = 1.11) and "social motivation" (M = 4.38, SD = 1.35).

In viewing experience of E-sports game viewers, the average value of each value is more than 5, indicating that the viewer's perception of the viewing experience is somewhat agreeable. Among then, "thinking experience" had the highest perception (M = 5.83, SD = 0.85), followed by "sensory experience" (M = 5.60, SD = 0.92), "action experience" (M = 5.41, SD = 0.91), "associated experience" (M = 5.24, SD = 0.97) and "emotional experience" (M = 5.18, SD = 1.07).

In perceptual value of E-sports game viewers, the average value of each value is more than 4, indicating that the viewer's perception of perceived value is somewhat agreeable. Among then, "utilitarian value" had the highest perception (M = 5.58, SD = 0.85), followed by "enjoyment value" (M = 5.35, SD = 0.89) and "social value" (M = 5.09, SD = 1.07).

In behavioral intentions of E-sports game viewers, the average value of each value is more than 5, indicating that the viewer's perception of the behavioral intentions is somewhat agreeable. Among then, "I will pay attention to the next revision" had the highest perception (M = 5.44, SD = 1.23), followed by "I will want to pay attention to related events" (M = 5.25, SD = 1.14), "I want to play the same game immediately" (M = 5.10, SD = 1.34) and "I will recommend it to other" (M = 5.03, SD = 1.26)

### 4.4 The Analysis Result of Appropriate of Overall Behavior Model

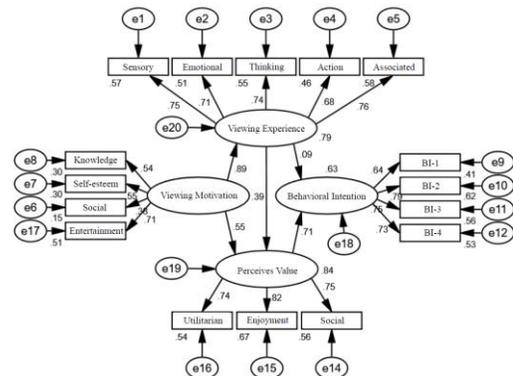
This study analyzes the structural equations by AMOS statistical software to test the fit and variation of research hypotheses, the result as table 1 show.

**Table 1. Overall Behavioral Model**

	Index	Evaluation Criteria	Orig Index	Revised Index	Degree of conformity	
					orig	fix
	X <sup>2</sup>	The smaller the better	471.05	127.45	-	-
Absolute fit index	SRMR	< .05 (good)	.06	-	O	-
		< .08 (smart)				
	RMSEA	< .05 (good)	.10	.03	X	O
		< .08 (smart)				
GFI	> .90	.85	.96	O	O	
Value-added fitness index	NFI	> .90	.84	.96	O	O
	RFI	> .90	.80	.95	X	O
	IFI	> .90	.87	.99	O	O
	TLI/NNFI	> .90	.84	.99	X	O
	CFI	> .90	.87	.99	O	O
Simple adaptation index	CN	> 200	105	284	X	O
	NC	1~5	4.76	1.29	X	O

O: Compliance; X: Non-compliant; Note: The fitness value of the overall behavior pattern is corrected by the non-multivariate normal model.

The table 1 show that the detection values of overall behavioral model are up to standard. The overall behavioral model adaptation degree of this study is good, indicating that the results of this study are acceptable models, further discuss the relationship and influence between various facets.



**Figure 1. Path Diagram of E-sports Game Viewer Behavior Model**

According to figure 1, viewing motivation has a significant positive impact on the viewing experience, the direct effect is .89 (t=6.25, p<.05), assumed that H1 is established. The viewing experience has a significant positive impact on the perceived value, the direct effect is .39 (t=2.14, p<.05), assumed that H2 is established. The viewing motivation has a significant positive impact on the perceived value, the direct effect is .55 (t value is 2.68, p<.05), assumed that H3 is established. In addition, the direct effect of the viewing experience on the perceived value is .39. The effect of the viewing motivation to obtain the perceived value through the viewing experience is .35, the total effect of the viewing motivation on the perceived value is .89. Therefore, this study confirms that viewing motivation directly and indirectly affect perceived value. The perceptual value has a significant positive impact on the behavioral intent, the direct effect is .71 (t = 4.15, p < .05), assumed that H4 is established. The viewing experience has no significant positive impact on the

behavioral intentions, the direct effect is .09 and the effect of the viewing experience through the perceived value to the behavioral intention is .28 ( $t = .58$ ), which does not reach a significant level, assumed that H5 is not established. The results verified show that the motivation of the E-sports game viewers can directly and indirectly affect the perceived value through the viewing experience (impact effect is .90). The perceptual value can directly affect the behavioral intention (impact effect is .71) Indicating that the viewer's viewing motivation can positively influence its follow-up behavior through experience and value, and its effect is .64 (.90\*.71), assumed that H6 is established.

## 5. CONCLUSION

Based on the research results, the conclusions are as follows:

1. Most viewers of E-sports game are male, age 19-24, the frequency of viewing is at least once a day, no income and gaming games without spending any money. The main customer group is the young people who have time and have not yet invested in the workplace.
2. The most popular E-sports game for viewers are Dota 2, but there still have a lot viewers viewing other E-sports games. It shows that viewers will not only focus on the same E-sports game because the E-sports game works are constantly updated and innovated to attract viewers to watch.
3. Viewing motivation has the deepest feeling in "entertainment motivation", because the viewer believes that the fun can be obtained through viewing the E-sports game film, it can bring joy and alleviate troubles for the present life.
4. The viewing experience has the deepest feeling in "think experience". Because the viewer believes that, by viewing the video content can get the experience of gaming, through viewing E-sports game video can understand how the team work and improve game skills, and improve the learning cognition of E-sports game through brainstorming.
5. Perceptual value has the deepest feeling with utilitarian value, because the viewer believes that by viewing the E-sports game video will have a certain knowledge of the game content. Therefore, through the content of the film, viewers can quickly acquire the application skills and game knowledge of different characters in a certain period of time.
6. Behavioral intention deepest feeling in "I will focus in next upgrade information". Because the viewers will think that the E-sports game has updated content, the revised content will more interesting and attract viewers continue to track the video.
7. In the overall behavior model of the E-sport game, the viewer finds that the viewing motivation has a direct impact on the viewing experience. The viewing motivation and the viewing experience has a direct impact on the perceived value, while the viewing experience and the perceived value indirectly affect the behavioral intention, and only the viewing experience has no direct impact on the behavioral intention. The overall model result is that the viewing motivation must further influence the behavioral intention through the viewing experience and perceived value.

## 6. RECOMMENDATIONS

Based on the research results, suggestions for future research are as follows:

1. There are many kinds of E-sports game in the game field. This study only uses the Dota 2 esports game as the research topic, therefore it is recommended that future researchers can use other E-sports game as the influencing factors of intention.
2. If can interview the viewers or E-sports game participants before the sample survey, then analyze the differences between each other will increase the research contributions.

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