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Electronic Football Participation vs. Traditional Football Engagements in Korea

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Electronic sport games have gained momentum and been applied to many sport contexts for marketing purposes. However, there has been little knowledge about the influence of electronic sports games. The current study approached the problem from this perspective and examined influence of electronic football games (EFG) on four different engagement with physical football (i.e., attendance, participation, viewership, and expenditure). Using the questionnaire, the study examined how people enjoy EFG and participate in traditional football engagements and eventually how playing EFG influence traditional football engagements. A total of 235 questionnaires were collected at 'PC Rooms' and 'PlayStation Rooms'. In an effort to find out the influence of frequency and time of playing EFG on traditional football engagements, a regression technique was used. The results revealed that frequency of playing EFG positively influenced attendance of both K League and Korea national football team matches and also on TV viewership of K League and foreign football leagues. In addition, frequency was strong predictor of football-related merchandise consumption. Frequency of EFG, however, negatively influenced on actual football participation. On the other hands, the amount of time per each gaming did not explained any unique variance in attendance and actual football participation. However, time of EFG significantly predicted TV viewership of both K League and foreign football leagues. Lastly, expenditure of football-related merchandises was positively influenced by the amount of time of playing EFG.

Key words: electronic sport game, football participation, football consumption, football engagements

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Introduction

According to, among 7.20 billion world population, 2.97 billion have web access and 1.8 billion play games. Even in the United Kingdom, revenues from online and mobile digital game services, which are more than those of music and video services together, grew 17% to £1.9 billion in 2015. Sport video game (including auto racing), based on the units sold in 2007, comprised more than 22% of the entire video game industry. Especially, according to, Korea ranked as second in gaming revenue by online users, spending $79 per person. found out that market size of the 2014 Korean domestic game industry is $8.3 billion which accounted for 6.7% of the entire world market. Regardless of the fast growth of video games, commented that nonplaying adults usually consider that game playing can divert time from other activities such as sport. The implementation of 'Game Shutdown' in South Korea is another constraint that shows potential negative recognition of video gaming. Game shutdown that has started since May 2011 restricts youths from playing online game from 12:00 AM until 6:00 AM to reduce the negative effects of playing games such as exposure to violence and inflammation, and physical or social problem due to overuse and poor academic performance

Recently, Seoul E-Land FC, Seongnam FC and Adidas Korea has started to use electronic football games (EFG) for marketing purposes. Adidas Korea offered some incentives to their customers who purchased Adidas products in the period from 5th to 15th of May 2016 (Adidas Korea, 2016). Those incentives include privilege to pick legend players, world-class players within the game and some game money for FIFA Online 3. It was first time using electronic football games to promote sport and/or football goods in Korea. Since then, both Seoul E-Land FC and Seongnam FC have adopted EFGs as promotional tools. E-Land offered similar incentives of what Adidas Korea did to their customers who purchased the 4-match package tickets in June of 2016 (FIFA Online 3, 2016). It was the first time using EFGs to promote the attendance of professional football league in Korea. At last, Seongnam FC has signed first e-sport player, Jungmin Kim, in Korea (Seongnam FC, 2016). Kim represents the club at eSport tournaments, expecting positive spin-off for Seongnam FC. It is a similar case with Manchester City signing another eSport player in July of 2016 (BBC, 2016). Furthermore, EA Sports, one of the leading video game company well known for its 'FIFA Soccer' football game franchise, has become an official sponsor of Korea Professional Football League (K League) in 2017. This type of contract between professional football league and electronic game is becoming universal trend, including Premier League, Major League Soccer, Japan Professional Football League (. However, little has been revealed related to how EFG influence on traditional football consumption behaviours and participation.

In addition, in contrary to high public interest in video games in Korea and the recent trend

of utilising EFG for sport marketing purposes, contemporary football faces difficulties in attracting people's attention using traditional ways. announced that average spectators who paid their ticket per game was 5,456 and the percentage of paid admission was only 70.7%. Thus, in order to utilise the high interest in electronic football games in Korea as an effective marketing tools and reduce the huge gap between participation in electronic football games and traditional football consumptions, the current research examined how playing electronic football game influence four categories of traditional football engagement: attendance, participation, viewership, and expenditure of football-related merchandise. Thus, play frequency and time of EFG were measured as independent variables, and consequently, K League attendance, Korea national football team attendance, football participation frequency, K League viewership, foreign football leagues viewership, and expenditure of football-related merchandises were measured as dependant variables.

Literature Review

Conceptual Framework

In terms of defining the concept of electronic sport gaming, different terminologies are mixed up together and being used inappropriately. The most common term is eSports. Defined by, eSports is a compound word of 'electronic game' and 'sport'. Lee and Ko (2005) defined eSports as electronic matches between individuals or teams in cyberspace with personal computer or other devices including mouse, game software and of course Internet connection. However, as its definition describes, eSports only covers games that play against someone else or teams. Therefore, eSports is not fully appropriate to describe a single play that people enjoy games personally. Electronic games, defined by, however, include those that can be played on console/handheld systems, wireless devices such as mobile phone, personal computer, in both arcades and online. Thus, when describing the action of playing game with computer or any other devices, it should be described as playing electronic games not eSports because eSports exclude human-verse-machine competition. Considering the fact that this research includes both arcade and online football game played on any console, handheld systems or wireless devices, the term of 'electronic game' or 'playing electronic game' suits better in this research. Further explanation on the definition of console, arcade and online game will help better understand electronic game. First, console is a game system connected to a television. Sony PlayStation, Microsoft Xbox and Nintendo Wii are typical consoles. Both arcade and online game are part of electronic game. The difference between arcade and online game lies in whom people are playing against. Basically, arcade is human-versus-computer electronic game while online

game is based on human-versus-human electronic games, which people can participate at the same time through online communication networks

Four different concepts of traditional sport or football engagement is included in the current research. First of all, according to, engagement refers to either attending and/or participating in the sport, culture or arts sector. However, in this research, the definition of 'engagement' is considered in broader sense that not only includes attending and participation but also TV viewership and expenditure on football products.

Four different factors do exist within a boundary of traditional football engagement behaviours and refer to attendance, participation, TV viewership and expenditure on football products. First of all, according to, attendance refers to particular games in the case of matches or the average attendance per season in the case of the teams. However, because this research does not distinguish the attendance by the lengths of the periods, attendance in this article is referenced to attending particular matches only. Second, participation in sport is broadly defined and includes physical activities that require a minimum rate of exertion and take place in a sporting context. Third, TV viewership, defined by, is a typical type of enjoying sport participation in passive way, watching sport events on television. Finally, as the word itself implies, expenditure on football products refers to a consumer's behaviour who spend their money on football-related products. Football clothing, football boots and balls are typical football products.

Evidence

Although not many research has not conducted on evidence of positive impact of electronic games on traditional football or sport engagements, a couple of studies found out relations or proved its actual impact. Unlike other engagements, very few evidence and research have been found between electronic games and game attendance. conducted correlations analysis between eSports and attendance in sport matches but it showed no significant relationship.

The way electronic games influence people's sport participation should be discussed in two different parts depends on the types of electronic games, one is general electronic games and the other is sport electronic games. For general electronic games, first of all, conducted research on the relation of adolescent electronic game play to the time spent in other activities. Cummings and Vandewater (2007) found that for every hour boys played any kind of electronic games actually spent 8 minutes less in sport and active leisure activities. The negative influence of electronic games on participation of adolescent, however, was only significant during weekends. During the weekdays, however, electronic game play and time spent in sport activities were not related for both boys and girls on either day type. On the other hand, another study on relevance of electronic games of

children's culture done by, contradicts the negative influence of gaming on sport participation. He surveyed 1111 German school children and the result showed that there is no evidence to support the assertion that participation in digital gaming reduces a child's participation in sport. The other research which focused on sport electronic games only show totally different outcomes. A significant relationship does exist between the frequency of respondents who play sport and their propensity to play a sport related electronic game, showing nearly 80% of those who played sport once a week or more had recently played a sport related digital game compared with only 49.1% of those played sport less than once a week.

Although there has been no research on influence of electronic (sport) game on relevant expenditure, similar research in car industry gives a remarkable finding. According to, some companies like Chrysler, Coca-Cola, and even the U.S. Army have begun to add electronic games to their marketing, training and recruiting tool kits and especially the car companies have made a success in promoting vehicles. Chrysler actually attributes 14% of their orders for the Wrangler Rubicon to the brand's online game which was downloaded by 250,000 people within six months.

The influence of EFG on TV viewership has been also witnessed. found that the degree of flow or immersion of the games is strongly related with any sport consumer behaviour of college students and especially the media consumption showed relatively high correlation. They found out that as the college students immerge more into sport electronic game, which they referred to as cyber sport games on their study, college students tend to spend more media consumption.

Regardless of references mentioned above, further research on the relation or impact of electronic game and sport engagement is required for three different reasons. First of all, most researches were interested in ordinary electronic games but did not consider types of genre or focus on just sport electronic games. None of the previous have revealed the relation and impact of 'football' electronic game and football engagement. Second, the subject of Kim, Park, and Lim (2004) was very limited in age group and gender. Either they choose only adolescents or college students and female were excluded mostly. Third, none of the researches on sport electronic games mentioned above have not been done within five years. Considering how fast and rapidly sport electronic game is being developed, more recent research should be conducted. By doing so, the most recent trend of enjoying sport electronic game and how the enhanced reality of EFG influences football engagement can be tracked.

Research Hypotheses

This study is designed to investigate the influence of playing EFG, for example, EA Sports FIFA Online and Konami Pro Evolution Soccer which are two of the most popular EFGs, on four different traditional football engagements which are attendance, participation, viewership, and expenditure,

respectively. The research separated the influence of frequency and time of plying EFG on each engagement rather than multiplying those two. It was intended to measure the different influence of each frequency and time on the degree of respondents' engagements. The following hypotheses were postulated as Figure 1 shows:

H1-1: Frequency of playing EFG influences an attendance number of K League matches

H1-2: Time of playing EFG influence an attendances number of K League matches.

H2-1: Frequency of playing EFG influences an attendance of Korea national football team matches.

H2-2: Time of playing EFG influences an attendance number of Korea national football team matches.

H3-1: Frequency of playing EFG influences a frequency of actual football participation.

H3-2: Time of playing EFG influences a frequency of actual football participation.

H4-1: Frequency of playing EFG influences the number of K League viewership.

H4-2: Time of playing EFG influences the number of K League viewership.

H5-1: Frequency of playing EFG influences the number of foreign football league viewership.

H5-2: Time of playing EFG influences the number foreign football league viewership.

H6-1: Frequency of playing EFG influences an amount of merchandise expenditure.

H6-2: Time of playing EFG influences an amount of merchandise expenditure.

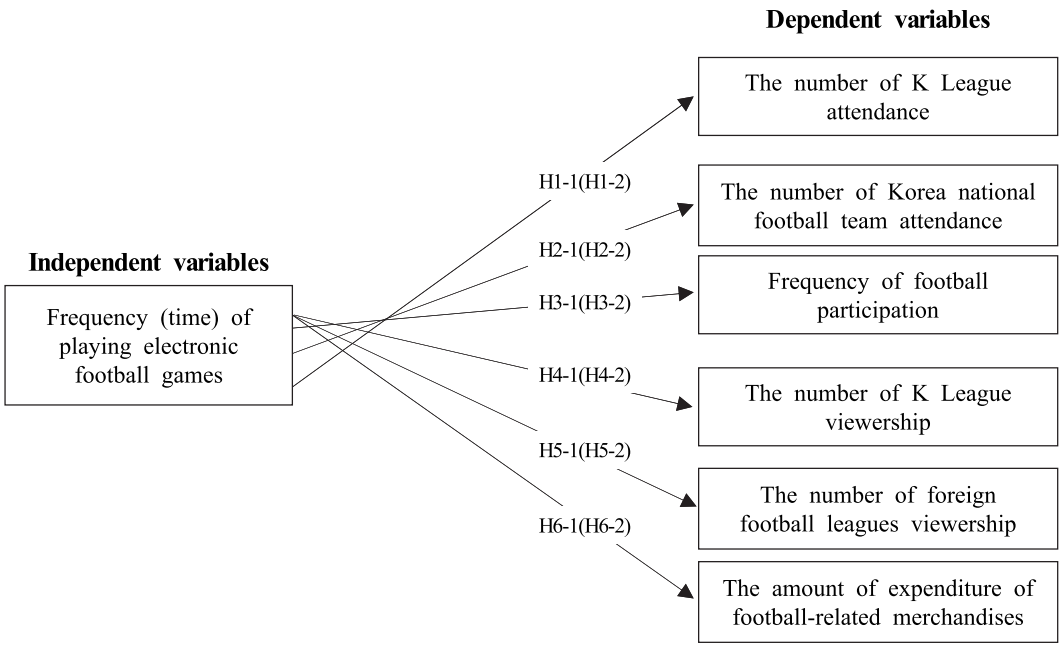

Figure 1. Research model

Note. The parentheses denote hypotheses which premise 'time' of playing EFG as independent variable.

Method

Sample

This study selected ordinary adults in Korea who played any football electronic games as a population because the respondents did not necessarily possess any distinguishing attributes such as game playing habits and a certain skill level. Those who were under 18 years of age were not considered for this the study due to the ethical issues. A convenience sampling method was used.

A total of 235 questionnaires were collected at 25 different 'PC Rooms' and 'PlayStation Rooms' in Seoul, Korea. Given the current research aimed to examine how playing EFG influence on traditional football engagements, it is reasonable to collect data from where people enjoy playing EFG rather than where people play actual football. Five districts in Seoul were randomly selected among all 25 different districts and then five PC Rooms and PlayStation Rooms were selected from each of the five preselected districts. Seven questionnaires were excluded from the pool due to the missing or incomplete answers. The rest of 228 responses were employed in data analysis. The mean of sample age was 24 (SD = 4.108). Among 228 respondents, 72 were females (31.6%) and 156 were males (68.4%). Demographic information is summarised in Table 1.

Table 1. *Demographic Information*

Variables		Frequency	Percent
Gender	Female	72	32.1
	Male	156	69.7
Total		228	100.00%
Income	Under 1,000,000 Won	4	1.8
	1,000,000 - 2,000,000 Won	24	10.5
	2,000,000 - 3,000,000 Won	48	21.1
	3,000,000 - 4,000,000 Won	96	42.1
	Over 4,000,000 Won	56	24.6
Total		228	100.00%
Football expenditure in last three months	None	96	42.1
	Under 30,000 Won	32	14.1
	30,000 - 60,000 Won	16	7.1
	60,000 - 90,000 Won	8	3.5
	90,000 - 120,000 Won	12	5.3
	Over 120,000 Won	64	28.1
Total		228	100.00%

Instrument Development

This study used survey questionnaire as the measurement instrument. The questionnaire contained items related to the participants' demographics (i.e., age, gender), past experiences in EFG, four different football engagements (attendance, participation, viewership, and expenditure). The respondents were asked to answer yes or no for gaming and football engagement history. Then, with open-ended single questions, the respondents answered how frequent they had enjoyed EFG per week and how long they usually had played EFG per each session. In a similar way, the participants were also asked to write down how many times they had visited stadium and watched for both K League and Korea national football team matches in last 12 months (attendance). For actual football participation, the number of participation per week was assessed (participation). The respondents were asked to answer how many times they had watched both K League and foreign football leagues per week (TV viewership). Lastly, the amount of money people spent on football-related merchandise was measured. Items were modified from a review of relevant literature.

Data Analysis

To test research hypotheses, SPSS Version 22.0 was utilised. Before conducting a series of regression analyses, descriptive statistics were calculated, including means and standard deviations. Frequency and time of playing EFG served as the independent variables. The number of K League and Korea national football team attendance, the number of football participation, the number of K League and foreign football leagues TV viewership, and the amount of expenditure on football-related merchandise were entered as the dependent variables. Regression analyses were conducted to examine how frequency and time of playing EFG (independent variables) predict four different football engagements (dependent variables).

Results

Descriptive Analysis of Sample

As Table 2 illustrates, samples played EFG 2.5 times (SD = 1.05) per week on average and their average playing time per each play was around 73 minutes (SD = 31.31). In terms of traditional football engagements, samples attended K League 2.46 times (SD = 4.16) and Korea national team 0.36 times (SD = 0.98) a year. Respondents answered that they play football 1.75 times a week (SD = 1.29) and watch K League 1.1 times (SD = 1.41) and foreign football leagues 2.41 times (SD = 1.56) per week.

Table 2. *Time/Frequency of EFG and Football Engagements*

Variables		Mean	SD
Gaming	Frequency per week	2.5	1.05
	Average time per play (minutes)	73.39	31.31
Attendance	K League (in a year)	2.46	4.16
	Korean national team (in a year)	.39	.98
Participation	Frequency per week	1.75	1.29
Viewership	Frequency of K League per week	1.1	1.41
	Frequency of foreign leagues per week	2.41	1.56

Related to gaming patterns, 83.8% of samples responded that they played EA Sports FIFA Online, and Konami Pro Evolution Soccer was placed as the second most popular EFG (43.9%). The majority of respondents (87.7%) were using computer to enjoy EFG while console and cellular phone took up 67.1% and 20.2%, respectively. The three most preferred football leagues were English Premier League (80.7%), The Primera División (59.6%), and K League (35.1%) in the order named. In terms of co-player, 86% of respondents answered that they play against their friends, 67.1% played against strangers via internet, and 42.1% played alone. Also, more than half of respondents had played EFG for more than four years (52.6%), those of whom had played three to four years took 19.3%, and 14% of respondents had played EFG for less than a year. Table 3 summarises descriptive statistics of respondents' gaming patterns.

Table 3. *Descriptive Statistics of Gaming Patterns*

Variables		Frequency	Percent
Type of EFG	EA Sports FIFA Online	191	83.8
	EA Sports FIFA Series	40	17.5
	Konami Pro Evolution Soccer	100	43.9
	Sega Football Manager	48	21.1
Type of device for EFG	Computer	200	87.7
	Console	153	67.1
	Portable device	8	3.5
	Tablet	11	4.8
	Cellular phone	46	20.2
League preference in playing EFG	K League	80	35.1
	Premier League	184	80.7
	La Liga	136	59.6

Variables		Frequency	Percent
	Bundesliga	67	29.4
	Seria A	25	11.0
	Ligue 1	20	8.8
Co-player	Alone	96	42.1
	With friends	196	86.0
	With family	28	12.3
	Against strangers (through online)	153	67.1
Period of gaming	Less than 1 year	32	14.0
	1-2 years	12	5.3
	2-3 years	20	8.8
	3-4 years	44	19.3
	More than 4 years	120	52.6
Total			100.00%

Main Analysis

In order to examine the influence of EFG on traditional football engagements, a regression technique was used. Based on research model, all twelve hypotheses are examined in multiple regression analysis. The major findings are summarised in Table 4.

As shown in Table 4, the first hypothesis (H1-1) was supported (p <.001). However, 'Gaming Time' did not explain any unique variance in K League attendance (p =.523) while 'Gaming Frequency' explained the variance in dependent variable (β =.301, p <.001), meaning when the respondents played EFG more often, the number of K League attendance also increased but the amount of time per each playing did not influenced on K League attendance. Similar to hypothesis 1, the number of attendance of Korea national football team was positively influenced by the frequency of EFG (β =.261, p <.001), while the amount of time spent on each play did not predict the national team attendance (β = -.063, p =.377). Hypothesis 3-1 showed that frequency of EFG negatively influenced on actual football participation (β = -.223, p =.002). However, hypothesis 3-2 was not supported that the time of EFG did not explained any unique variance in actual football participation (β =.005, p =.943). Out of the six hypotheses, both frequency and time were significant in predicting K League TV viewership (p <.001, respectively). Especially, frequency and time of enjoying EFG explained 22.4% of the variance in K League viewership (R^2 =.224). Both frequency and time of EFG were positively influencing on viewership of K League (β =.223 and β =.340, respectively). In a similar vein, frequency and time also positively influenced on viewership of foreign football leagues (β =.346, p <.001 and β =.209, p =.001, respectively). The coefficient of determination for hypothesis 5 was also notable that frequency and time of playing EFG explained

21.9% of the variance in viewership of foreign football leagues (R^2 =.219). It represents the tendency that as people played EFG more often and for longer period of time, people had watched both K League and foreign football leagues more. Lastly, frequency of EFG did not significantly explain expenditure of football-related merchandise (β =.009, p =.899). However, playing time of EFG significantly explained the consumption behaviour (β =.343, p <.001), supporting hypothesis 6-2. Thus, people had spent more money on football-related merchandise as they play EFG for longer period of time, not when they play more often.

Table 4. *Hypotheses Analysis*

Hypothesis	Relationship	β	*SE*	*t*	*p*	R^2	Support
1-1	Gaming frequency → K League attendance	.301*	.276	.301	.000	.082	Supported
1-2	Gaming time → K League attendance	-.045	.009	-.640	.523		Not supported
2-1	Gaming frequency → Korea national football team attendance	.261*	.066	3.687	.000	.059	Supported
2-2	Gaming time → Korea national football team attendance	-.063	.002	-.884	.377		Not supported
3-1	Gaming frequency → Actual football participation frequency	-.223*	.087	-3.138	.002	.049	Supported
3-2	Gaming time → Actual football participation frequency	.005	.003	.072	.943		Not supported
4-1	Gaming frequency → K League viewership	.223*	.086	3.472	.001	.224	Supported
4-2	Gaming time → K League viewership	.340*	.003	5.295	.000		Supported
5-1	Gaming frequency → Foreign football leagues viewership	.346*	.095	5.364	.000	.219	Supported
5-2	Gaming time → Foreign football leagues viewership	.209*	.003	3.238	.001		Supported
6-1	Gaming frequency → Football-related merchandise consumption	.009	.141	.127	.899	.120	Not supported
6-2	Gaming time→ Football-related merchandise consumption	.343*	.005	5.010	.000		Supported

*p <.05

Discussions

As more ways of communications and various types of advertising tools introduced, the effectiveness of traditional methods of marketing communications, including advertisements, are being questioned. As a consequence, a new and creative medium are being introduced to fulfil the marketers' strategic goals. In this vein, electronic games as a form of entertainment and a way of

enjoying past time are increasingly and rapidly adopted as a new medium to promote the strategic purposes. On the contrary to its popularity as a new medium, practitioners still have lack of information on how to use football electronic games as successful strategy of promoting certain goals. This is because not enough research related to electronic games and its marketing potential has not been revealed yet. There are several studies related to electronic games, however, they are mainly focused on participation of sport (e.g., Kim, 2010; Park, 2006; Sun, 2008), which implies less important findings to commercial sectors who organise football clubs and/or football leagues in Korea. The current research, on the other hand, reveals the findings that might devote to commercial sectors (attendance, viewership and expenditure) directly.

Considering contrasting situation of low interest and popularity of K League and Korean football industry but high interest and popularity of electronic football games in Korea, the findings of the current research might give tailored hints to increase the attendance and viewership of K League and Korea national football team and expenditure of football merchandises as well using EFGs. The findings of the current research which is classified under four different sectors of traditional football engagements (attendance, participation, viewership and expenditure) will help marketers develop promotions to reach specific target operation goals. By distinguishing the influence of frequency and amount of time that people enjoy EFGs on each of four engagements, marketers may more easily develop the tailored marketing methods using EFGs which will enhance the possibility of achieving strategic goals and larger market share. Given the results that frequency of playing EFG was a positive predictor of attendance of K League and Korea national football match and viewership of both K League and foreign football leagues, marketers need to develop marketing strategies to increase attendance and viewership, focusing on those of whom play EFG often. For example, marketers should focus on the customers who play EFG frequently rather than those of whom play longer time in order to increase the K League attendance of customers using EFG. On the other hand, frequency of gaming negatively affected actual football participation. Considering that football participation requires much physical exertion while playing EFG is very sedentary activity, requiring relatively minimum physical movements, these incompatible characteristics may cause negative relationship between frequency of playing EFG and actual football participation. For promotion of physical football participation, thus, practitioners need to contemplate how to control the frequency of gaming while increasing football participation. The findings also revealed nonsignificant impact of EFG playing time on actual football participation frequency. This result can be supported by other previous research by and which reported that physical activity was not affected by the amount of electronic game playing time.

Not only the marketers who are willing to exploit the benefit of EFGs but also the other parties

such as football electronic game developers and distributors might earn some benefits from EFGs as well. As the findings of the current research suggest, EFG has positive influence on attendance, viewership and expenditure which suggest that EFG possibly trigger other parties' revenue who are related to attendance, viewership and expenditure of football. Hence, these results can increase the bargaining power of game developers and/or distributors. For instance, EA Sports, upon the organisations of K League and Korea national football team, can claim that not only the database of EFG users' gaming patterns and habits but also the direct promotion using EFG will positively contribute to the increase of attendance, viewership and expenditure. As the current research suggests additional value of EFGs, players' union well known as FIFPro and clubs in the K League might also gain the similar leverage from additional functions of electronic football games when they are negotiating the license of exclusive rights to use their authentic names, logos and kits and images of players as game developers did.

Conclusion

This study was designed to examine the impacts of frequency and time of playing electronic football game on the degree of four different football engagements such as attendance, participation, viewership and expenditure of football-related merchandises. The results showed that 'frequency' of EFG significantly predicts all four engagements. 'Frequency' positively influenced attendance, viewership, and expenditure, however, it negatively influenced actual football participation. On the other hands, 'time' of gaming did not explained any unique variance in attendance and actual football participation, but viewership of both K League and foreign football leagues and expenditure of football-related merchandise were positively influenced by 'time'.

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