The development of spectator motivation scale for South korean professional baseball fans

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Abstract

With the significant growth of the Korean baseball league for the past generation, sport managers and administrators in baseball are desperately looking for new revenue streams to bring more number of fans to the ballparks by offering value-added tangible and intangible products and services such as mascots, music, cheer-leadings, statistics, program books, and on-site promotion opportunities. In order to accomplish these set goals and objectives sport managers and administrators should fully understand who their fans are, what they want at the ballparks, and what makes them revisit the ballparks. The main purpose of this current study was to develop and validate fan motivation scale which is uniquely oriented to Korean baseball fans. A total of 1,927 surveys were collected and 1,869 were utilized in this study after excluding 58 surveys with incomplete or missing values. Reliability coefficients were calculated by factor and correlation coefficients were obtained by test-re-test reliability to remove inappropriate items. Confirmatory factor analysis was conducted to verify the structural model fit for the proposed seven-factor model after exploratory factor analysis through principal component with orthogonal rotation method. The newly developed seven-factor survey instrument consists of the fandom, regional connection, entertainment, dramatic curiosity, sense of belonging to the cheering team, ties with family members, and expertise.

Key words: fan motivation, exploratory factor analysis, confirmatory factor analysis

Introduction

People have come to be of much interest in the quality of lives. Attending professional sports games is second to none due to the fact that it provides opportunities to get away from routine, stress relief,

Submitted: 4 January 2017 Revised: 8 February 2017 Accepted: 22 February 2017 Correspondence: sjt2001@deu.ac.kr vicarious sense of accomplishment, motive force of life, and opportunities for social intercourses (Baek & Kim, 2009). Korean sport industry has been very successful for the past decades. Among South Korean professional sports, professional baseball league became the pioneer in this category to be firstly launched in 1982 followed by professional football in the next year of 1983 and professional basketball in 1997. Thereafter, with the declaration for professionalization of volleyball in 2005, a total of four major professional sport leagues are currently operated in Korea. Korean professional sports

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leagues adopted and benchmarked the western marketing know-hows such as the local community based farm system which made teams be rooted in designated cities in the country (Karp & Yoels, 1990; Shin, 2002).

Among those four major leagues, baseball has advanced to become a national pastime mainly due to the successful performances of national baseball teams at several international competitions (i.e., the gold medal both at the 2014 Asian Games and the 2008 Beijing Olympic Games, the 2nd place in the 2009 World Baseball Classic, and the 1st place in the 2016 Premier 12). As a result, professional baseball league attracted six million spectators in 2011 for the first time in its history and over eight million in 2016 that made it become the mostly watched sports in South Korea. Moreover, two brand-new franchises (NC Dinos in 2013 and KT Wiz in 2015) joined the league and both teams were fully supported by their mother companies of NC SOFT, a global videogame publisher and KT, an information and communication corporation, respectively.

However, the successful operation of a baseball franchise is not as easy as it might seem. Chae and Lee (2000) asserted failure to attract fans to the game would hit finishing blow on revenue streams (i.e., advertisements, licensing and merchandises, concessions, and media rights). Sports teams are eager to diversify the potential revenue sources including mascots, music, cheer-leadings, statistics, program books, and on-site activations at the ballparks in order to enhance total fan-value experiences (Tsuji, Bennett, & Dees, 2008).

In order to do that, the team managers should understand the demographics and socio-economic backgrounds of fans and more importantly the motivation to visit and revisit the ballparks. Marcum and Greenstein (1985) stated spectators' experiences were affected by the following factors of demographic backgrounds (sex, age, occupation, and incomes, etc.), stadium components (stadium locations and facilities, means of transportation, game schedules, and weather, etc.), and game specifics (team records, star players, etc.) in Major League Baseball. Several researchers

stood at the same line by presenting the similar key factors of game components (i.e., players, managers and athletic performance, stadium factors including the comfort of seats, electric scoreboard quality, game schedules, and facility accessibility) and spectator specifics (i.e., cheering culture and fan service) (Green, 1995; Greenstein & Marcum, 1981; Hansen & Gauthier, 1989; Ross, James, & Vargas, 2006; Tsuji, Bennett, & Dees, 2008; Wakefield, Blodgett, & Sloan, 1996). Fink, Trail, and Anderson (2002) presented psychosocial factors such as ticket prices and promotion and environmental factors including opportunities for social intercourses. Wann (1995) also insisted that psychosocial factors of stress relief, escape from routine, self-respect, entertainment, social intercourses, and family gathering would affect fans' consumer behaviors.

Chae and Lee (2006) asserted that stadium factors (i.e., seats, parking, electric scoreboards, and sound and percussion systems) significantly influence spectators' re-visit intentions along with teams' on-field performance. Kim, Kim, and Lee (2006) concluded that public relations, promotions, facilities, athletic performance, game schedules, and costs were critical to affect fan loyalty. Kim, Jeong, and Lee (2007) stated that purchase behavior at the venue was still influenced by perceived value by baseball fans.

There were several attempts to create concrete survey instrument to measure fan motivation in the various sports. Even though western scholars successfully developed valid survey instrument tools to measure fan motivation, these scales might not be appropriate to be used in Korea without modification due to the unique settings of Korean baseball league such as dissimilar league operational systems, ownership structure, and cultural and environmental factors. motivation scales for Korean fans have been developed before. However, they are somewhat limited due to the fact that they heavily focused on the revisit intention and quality of venues. Therefore, the main purpose of this present study was to successfully develop spectator motivation scale considering the uniqueness of Korean professional baseball market.

Methodology

Participants

Jamsil stadium, home venues of Doosan Bears and LG Twins, was selected as our target location for the purpose of data collection. A total of 10 games from April and October 2015 were picked based on scheduling preferences of administrators and staffs.

Twenty-five survey crews were recruited and educated through the orientation session and conducted their duties and responsibilities thereafter. A total of 1,927 surveys were collected and 1,869 were utilized in this study after excluding 58 surveys with incomplete or missing values. The demographic characteristics such as gender, education, income level of the survey subjects were asked to assess who to survey and how to breakdown overall survey response data (See Table 1).

Table 1. Demographic characteristics of the survey subjects

Variable	Division	Frequency(person)	Percentage(%)
Sex	Male	807	43.2
Sex	Female	1062	56.8
Age	10s	344	18.4
	20s	933	49.9
	30s	352	18.8
	40s	186	10.0
	50s	31	1.7
	60s or older	23	1.2
	Elementary school graduation or lower	93	5.0
	Middle school graduation	146	7.8
Level of	High school graduation	177	9.5
education	In university	509	27.2
	University graduation	831	44.5
	Graduate school graduation or higher	113	6.0
	Student	789	42.2
	Company worker	574	30.7
	Public officer	71	3.8
	Commercial business	13	0.7
Occupation	Service business	128	6.8
	Private practice	89	4.8
	Housewife	84	4.5
	Agriculture or fishing	4	0.2
	Other/jobless	116	6.2
	Less than 1 million won	92	4.9
	1-3 million won	529	28.3
Income	3-5 million won	561	30.0
family Income)	5-7 million won	457	24.4
	7-9 million won	136	7.3
	More than 9 million won	94	5.0

Table2. Inductive analysis of professional baseball spectator motivation

Division	Content			
Fandom (Green, 1995; Hansen & Gauthier,	The reason why I watch games is that I am interested in individual players rather than team competition.			
(Green, 1993, Hansen & Gautilier, 1989)	I have stronger loyalty to individual players than to the entire team			
1989)	The primary reason I go to stadiums is to see the player I like the most			
Expertise	I go to baseball stadiums to see players' nice skills			
(James, 1997)	I enjoy the high level skills shown by players			
Regional connection	I am proud when the team connected to my region wins			
(Schollaert & Smith, 1987; Wakefield	I go to stadiums to cheer for the team connected to my region			
& Sloan, 1995; Kim, 1999)	The reason why I cheer for my team is the regional connection			
	I go to baseball stadiums because sports are interesting entertainment			
Entertainment	I go to baseball stadiums because I can forget my worries and anxieties			
(Lee & Eun, 2005; Lee, Cho, & Jin,	Baseball gives me opportunities to exchange with others			
2004; Chae & Lee, 2000; Heo &	I go to baseball stadiums because I think baseball is a sort of entertainment			
Lee, 2004)	I like breathing together with other fans when I watch games			
	Baseball provides me with opportunities to be with my friends			
Dramatic curiosity	I feel those games of which the results cannot be seen until the end more interesting			
(Heo & Lee, 2004)	I like watching games with uncertain game results			
(1100 & 120, 2004)	I feel fiercely competing games more interesting than one-sided games			
	I feel as if I win when the team I cheer for wins			
	Baseball watching is a pleasant way for me to spend time			
Sense of belonging to the team	Baseball gives me opportunities to escape from routine for a while			
(Kim, Jeong, & Lee, 2007; Paek &	I feel a sense of achievement when the team I cheer for wins			
Kim, 2009)	I prefer watching sports at the scene			
Kini, 2007)	Baseball is an escape from daily routine to me			
	Players'passion makes me feel interest			
	I feel proud when the team I cheer for plays a good game			
	I like baseball stadiums because I can be with my family members there			
Ties with family members	I watch baseball games because the games provide me with opportunities to make			
(Lee & Eun, 2005)	ties with my family members			
	Baseball games provide me with time that can be spent with my family members			

Survey instrument

To develop scales for spectator motivations that fit the actual state of South Korean professional baseball market, 45 existing survey instruments were reviewed (i.e., Chae & Lee, 2000; Green, 1995; Hansen & Gauthier, 1989; Heo & Lee, 2004; James, 1997; Kim, 1999; Lee, Cho, & Jin, 2004; Lee & Eun, 2005; Paek & Kim, 2009; Schollaert & Smith, 1987; Wakefield & Sloan, 1995). The validity and reliability of the proposed survey questionnaire were evaluated using a panel of experts, a field test, an internal consistency measure, corrected item-to-total correlations, and factor

analysis. The content validity of the initial survey was evaluated by a panel of seven experts (two sport marketing researchers, two current employees for professional baseball teams and three professors).

Since some of the currently existing survey instruments were written in English, back-translation method was used. For instance, one bilingual researcher translated English version of survey questions into Korean and the other bilingual researcher translated them back to English. Then, two translators reviewed both versions. A total of 35 questionnaire items were finalized after careful reviews of sentence structures, vocabularies, and double negative statements to delete

questions with overlapping or uncertain meanings. The results obtained through the preliminary survey were statistically analyzed. Finally, the number of questionnaires was reduced to 28 after deleting items that were not statistically suitable for this study. The concrete composition of the questionnaire is as shown in <Table 2>.

Data analysis

The descriptive statistics (mean, standard deviation, skewness, and kurtosis) of individual items were analyzed and item analyses (correlations of all revised items and reliability when items are deleted) were conducted to secure validity of the instrument. Items with a skewness or kurtosis value exceeding ±2 were removed. Thereafter, reliability coefficients were calculated by factor and correlation coefficients were obtained by test-retest reliability to remove inappropriate items. Confirmatory factor analysis was conducted to verify the structural model fit for the relationships among the factors and items of the measurement tool. Overall fit indices utilized in the evaluation of the structural validity of the measuring model were Goodness-of-Fit Index(GFI), Comparative Fit Index(CFI), Nominal Fit Index(NFI), and Root Mean Square Residual(RMR). Individual item reliability values (SMC: Squared Multiple Correlations) were verified to revise and remove items.

Results

Exploratory Factor Analysis

The 28 items were extracted through the process of descriptive statistics and item analysis. The results are as shown in <Table 3> below. Based on the results of the item analysis, no item with a skewness or kurtosis value exceeding ± 2.0 or with a revised item-total correlation coefficient below .40 was found. The

reliability of the entire items ranged from .967 to .968. Therefore, a total of 28 items were utilized for Exploratory Factor Analysis (EFA). Principle component analysis was conducted with the orthogonal rotation method and the seven factors were extracted after adopting the standard of an eigenvalue equal or greater than 1.0 (Kaiser, 1960).

However, seven items (Q5, Q6, Q12, Q18, Q19, Q21, Q25) were excluded because of either being double loaded with another factor or not being loaded at all. According to the results of KMO and Bartlett tests, the KMO values was 0.89 which indicated high adequacy of standard formation and thus the validity was confirmed. The finalized 21 questions were used for factor analysis and seven factors were obtained. Seven factors were labeled as Sense of belong to the cheering team (5 items; Q8, Q22, Q23, Q26, and Q28), Entertainment (2 items; Q3 and Q11), Ties with family members (3 items; Q7, Q15, and Q27), Dramatic curiosity (3 items; Q4, Q12, and Q24), Regional connection (3 items; Q2, Q10 and Q17), Fandom (3 items; Q1, Q9, and Q16), and Expertise (2 items; Q14 and Q20), respectively (see Table 4).

Confirmatory factor analysis

When conducting confirmatory factor analysis, one of the common concerns is the issue of what indices should be used to measure the overall model fit. Hu and Bentler (1999) recommended cut-off values of .90 and above should be used to support adequate fit based on the normed fit index (NFI), Tucker-Lewis index (TLI), and comparative fit index (CFI). According to the baseline model, the following indices of assessing fit in path exceeded cut-off values of .90 (CFI = .941; TLI = .925; NFI = .933) and thus the CFA baseline model fit the data (see Table 5).

The component factors for the items as shown above were named by these researchers as shown in Table 6 below reflecting their characteristics and contents.

Table3. Professional baseball team service quality item analysis

Item	Contents of the items	M±SD	Skewness	Kurtosis	Revised item-total correlation	Item deletion reliability
1	Interest in players	3.71±.911	136	607	.484	.968
2	Loyalty to players	3.78±.863	.023	978	.536	.968
3	Players' athletic performance	3.73±.958	468	303	.575	.968
4	Fan mind	3.40±.905	.302	672	.404	.968
5	Entire team's athletic performance	3.75±1.045	474	550	.685	.967
6	Pride in regional connection	3.89±1.154	716	435	.762	.967
7	Cheer for regionally connected team	3.92±1.118	774	186	.726	.967
8	Reason for cheering	3.95±1.078	764	228	.763	.967
9	Sport entertainment	4.10±.883	583	386	.598	.968
10	Escape from worries and anxieties	4.09±.884	611	279	.480	.968
11	Personal exchange	4.14±.797	405	900	.519	.968
12	Baseball entertainment	3.57±.990	338	300	.718	.967
13	Sense of fandom	3.67±1.057	411	547	.727	.967
14	Sense of kinship	3.46±.987	360	097	.635	.968
15	Sporting Interest	3.80±1.078	701	211	.743	.967
16	Uncertainty	3.68±1.072	485	445	.748	.967
17	Liveliness	3.72±1.075	570	370	.777	.967
18	Sense of unity	3.59±1.100	405	575	.744	.967
19	Recreational pleasure	3.90±.898	434	364	.577	.968
20	Escape from routine	3.98±.836	423	505	.696	.967
21	Sense of achievement	3.71±1.143	478	750	.658	.968
22	Watching at the scene	3.64±1.078	296	829	.608	.968
23	Business stress relief	3.95±.838	298	731	.666	.968
24	Passion	3.90±.880	299	772	.577	.968
25	pride	3.61±1.147	362	792	.542	.968
26	Formation of a bond of sympathy among family members through baseball games	3.76±.912	147	657	.609	.968
27	Formation of ties among family members	3.88±.902	326	540	.612	.968
28	Time to be with family members	3.93±.924	349	706	.605	.968

Table 4. Results of confirmatory factor analyses

Factor	Classification	Loading value	Standard error	t	p
Sense of belonging to the cheering team	m23	1.000			
	m26	1.148	.045	25.386	***
	m8	1.276	.049	25.794	***
	m22	1.291	.045	28.479	***
	m28	1.354	.047	28.523	***
Entertainment	m3	1.000			
	m11	1.032	.046	22.192	***
	m27	1.000			
Ties with family members	m15	.963	.021	45.864	***
members	m7	1.043	.022	47.175	***
	m4	1.000			
Dramatic curiosity	m12	.973	.045	21.603	***
	m24	.939	.038	25.026	***
Regional connection	m2	1.000			
	m17	.945	.039	24.518	***
	m10	1.276	.047	27.352	***
Fandom	m1	1.000			
	m9	1.154	.048	23.924	***
	m16	1.103	.046	23.769	***
Expertise	m20	1.000			
	m14	.922	.042	21.999	***

Table5. Goodness of model fit based on the confirmatory factor analyses

Fit index	Evaluation criteria	Model value	Determination
CMIN / DF	2 or lower	7.370	Unfit
RMR	0.1 or lower	0.047	Fit
GFI	0.9 or higher	0.945	Fit
AGFI	0.9 or higher	0.922	Fit
NFI	0.9 or higher	0.933	Fit
RFI	0.9 or higher	0.915	Fit
IFI	0.9 or higher	0.942	Fit
TLI	0.9 or higher	0.925	Fit
CFI	0.9 or higher	0.941	Fit
RMSEA	$0.05 \sim 0.1$ or lower	0.058	Fit

Table 6. South Korean professional baseball spectator motivation

Factor	Classification	Content				
Sense of belonging	m28	I feel proud when the team I cheer for plays a good game				
	m22	I feel a sense of achievement when the team I cheer for wins				
to the cheering	m8	I feel as if I win when the team I cheer for wins				
team	m26	Players'passion makes me feel interest				
	m23	I prefer watching sports at the scene				
Entertainment	m11	I go to baseball stadiums because I think baseball is a sort of entertainment				
Entertainment	m3	I go to baseball stadiums because sports are interesting entertainment				
	m7	I like baseball stadiums because I can be with my family members there				
Ties with family members	m15	I watch baseball games because the games provide me with opportunities to make t with my family members				
	m27	Baseball games provide me with time that can be spent with my family members				
Dramatic curiosity	m4	I feel those games of which the results cannot be seen until the end more interesting				
Diamatic curiosity	m24	I feel fiercely competing games more interesting than one-sided games				
	m10	I go to stadiums to cheer for the team connected to my region				
Regional connection	m17	The reason why I cheer for my team is the regional connection				
	m2	I am proud when the team connected to my region wins				
	m9	I have stronger loyalty to individual players than to the entire team				
Fandom	m1	The reason why I watch games is that I am interested in individual players rather team competition.				
	m16	The primary reason for me to go to stadiums is to see the player I like most				
Expertise	m14	I go to baseball stadiums to see players'nice skills				
	m20	I enjoy the high level skills shown by players				

Discussion

Korean professional baseball league has been very successful for the past decades and there are some evidences. Firstly, the total number of fans who visited ballparks passed over eight million fans in 2016 for the first time ever since it was founded in 1982 (http://www.wbsc.org). Secondly, excellent performances of the Korean national baseball teams at the international competitions including the 2014 Asian Games, the gold medal in the 2008 Beijing Olympic Games, the second place in the 2009 World Baseball Classic (WBC), and the championship in the 2016 Premier 12 helped bring more fans to baseball games. Thirdly, with the joining of two brand new franchises

(NC Dinos in 2013 and KT Wiz in 2015), the league is currently operated with 10 teams. With the significant growth of the Korean baseball league for the past generation, sport managers and administrators are desperately looking for new revenue sources by bringing more number of fans to the ballparks and selling tangible and intangible products and services such as mascots, music, cheer-leadings, statistics, program books, and on-site promotion opportunities (Tsuji, Bennett, & Dees, 2008). In order to accomplish these set goals and objectives managers and administrators better fully understand who their fans are, what they look for at the venue, and what makes them revisit the ballparks.

Therefore, this current study was to create the Korean market-oriented survey scale identifying the motivational factors of baseball fans. As previously described, this

study has some meaningful points. First and utmost, the present study successfully developed and validated the fan motivation survey instrument which is uniquely oriented to the Korean baseball market. The finalized 21-item instrument consists of the following seven factors of fandom, regional connection, entertainment, dramatic curiosity, sense of belonging to the cheering team, ties with family members, and expertise. Compared to Wann (1995)'s psychosocial factors, the following three factors of social intercourses, entertainment, and family gathering were somewhat similar to ties with family members and entertainment in the newly developed survey instrument. Interestingly, however, the newly developed seven-factor survey scale clearly failed to cover stress relief, escape from routine life, or self-respect shown in Wann (1995)'s. Secondly, this study is uniquely valuable since the sample size of 1,869 was enough to empirically and effectively validate the structural fit of the proposed seven-factor model. Finally, it is hoped that sport managers and administrators who currently work in the professional baseball league could utilize the validated 21-item survey scale to measure the motivational factors of Korean baseball fans.

This study contains a couple of limitations. First of all, all the data were collected from only one designated stadium in which was located in Seoul, Korea. Therefore, it needs to be cautious when generalizing the results. Secondly, it might have ignored the casual fans who watch the baseball game on TV and other handheld devices where all the surveys were conducted at the venue. Future researchers are asked to expand this study to the whole Korean baseball league by including fans who attend eight other stadia.

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