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DETERMINANT FACTORS OF SPECTATOR ATTENDANCE AT THE NATIONAL TABLE TENNIS CONTEST IN TAIWAN

Abstract

In today's society, sport spectating represents a predominant form of leisure behavior. Spectator attendance was related with on-field success of players. Chinese Taipei National table tennis team's performance has been very well in international competition recently. It should attract spectators to participate the game but it was only a few audience attending table tennis tournaments in stadium. Therefore, the table tennis association has been faced with the challenge of attraction of spectator attendance. The purpose of this study was to investigate determinant factors of spectator attendance.

Participants were 120 spectators who were attending in 2006 national table tennis tournament. Table Tennis Spectator Attendance Scale (TTSAS) was used in this study. Descriptive statistic and one-way analysis of variance were chosen in the data analysis. There were 30 questions in the questionnaire which was divided into 5 factors: Performance (5 items), Facilities and environment (3 items), Finance (2 items), Promotion (6 items), and Personal factors (14 items).

The results indicated that players' performance was the top rated factor followed by personal factors, facilities and environment, and promotion. Finance was the lowest rated factor. Suggestions of this study were as follow: (1) player's performance, personal factors, facility and environment, promotion were important determinant factors of spectator attendance; (2) determinant factors were significant related with demographic factors, such as gender, age, occupation, educational levels, and salary; (3) the findings of this study should be taken into consideration in developing strategies for National Table Tennis Association in Taiwan; and (4) there is a need for further study on table tennis spectators.

Key words: *determinant factors, spectator, attendance*

Introduction

Sport participation has become a major attraction activity in leisure (Nixon & Frey, 2000). Cohen and Avrahami (2005) mentioned that sport participation can take two forms: (1) direct participation, and (2) watching sport as spectator, such as watching games at the stadium or on television. However, sport spectating represents a predominant form of leisure behaviour in today's society (Robinson & Trail, 2005; Cohen & Avrahami, 2005; Kao, 2002). Spectators often attribute to the player's performance. Like Kelly (1996) said "The players, then, may come to find their motivation in the size and enthusiasm of the watchers..." (p. 215). Hence, spectators were a very important element to fulfill a successful competition in sports.

However, to understand the factors that motive people to watch sport is a challenge for researchers and practitioners (Armstrong, 2002). McDonald, Milne, and Hong (2002) indicated that much of empirical research in sport marketing does not address many critical questions of interesting sport organization, such as what factors can be used to explain and predict spectator participation. Most of research today emphasized on psychological needs and motivations to drive spectators watch a particular sport. The four factors of spectatorship were addressed as personal needs, mental, social, and basic sport. Some studies have focused on the behavior or the factors of sport spectators relative to their identification with a particular team (Wann & Branscombe, 1993; Wann, Brewer, & Royalty, 1999; Wann & Grieve, 2005).

This study focused on variable factors that influence decisions to attend sport events. In a literature review, a few articles were found related to the determinants of spectator attendance. Hansen and Gauthier (1989) addressed that four factors affecting attendance at professional sport event were finance, promotion, demographic factors (such as age, gender, educational levels), and player's performance. Huang and Liu (2006) proposed that facility and environment, player's performance, and personal experience were important determinant factors for spectators attending games. Some studies have examined determinant variables such as finance, promotions, and personal factors on attendance at sporting events, and have studied the relationship between demographic variables and watching sports (Zhang, Hui, & Michaud, 1995; Zhang, Smith, Pease, & Jambor, 1997; Baade & Tiehen, 1990). From the previous studies, player's performance, personal factors, facility and environment, promotion, and finance were the factor to influence spectators' decisions to attend sport events. Therefore, this study examined those factors in order to understand determinant factors of spectator attendance.

In addition, Sloan (1985) noted that "motivations differ from situation to situation and from sport to sport" (McDonald, Milne, & Hong, 2002, p. 101). Thus, this study was concentrated on one particular sport—table tennis rather than to sport in general. The reason to choose table tennis was because the author was the former table tennis player and concerning the table tennis development. Moreover, Chinese Taipei National table tennis team's performance has been very well in international competition recently. It should attract spectators to participate the game but it was only a few audiences attending table tennis tournaments in stadium. The table tennis association has been faced with the challenge of attraction of spectator attendance. Nixon & Frey (2000) proposed that understanding spectator is fundamental to promote spectating rates. Unfortunately, there was very little information on the determinants factors of spectator attendance at table tennis contests. Hence, the purpose of this study was to identify the determinant factors of spectator attendance at the National Table Tennis Tournament. Furthermore, the demographic characteristics of spectators were in an effort to know reasons for attendance (James & Ridinger, 2002). Therefore, demographic variables were also to examine in relation to determinant factors of spectator attendance. Results were hoping to provide information to National Table Tennis Association and providers of table tennis events for developing strategies and increasing spectator attendance.

Method

Sample

The subjects of this study were 120 spectators, who attended the National Table Tennis Tournament from November 16 to 19, 2006. Male participants comprised 44.2 (N = 53) and females 53.3 (N =64). The participants' age was below 20 years old (38.3%), 21-30 years old (29.2%), and above 40 years old (30%). The participants' marital status was married 46.7% and single 48.3 %. The educational level of subjects had obtained 40% of college degree, 20% had obtained a high school degree, and 37.5% had obtained a junior-high degree. The income of participant was reported as 58% of the sample income below \$350, 22% of the sample income from \$351 to \$1,000, and 30% of sample income above 1,001. The participants' occupations were: student (36.7%), public official (15.8%), businessman (14.2%), worker (5.8%), agriculturist (13.3%), and artist (11.7%).

Instrument

Table Tennis Spectator Attendance Scale (TTSAS) was developed in this study. The instrument was developed with procedure: (a) a study of related literature, (b) a list of questions, (c) three experts reviewed the instrument, (d) the pilot study.

The initial instrument contained 30 questions from related studies (Shin, 2001; Wang, 2005; Hansen and Gauthier, 1989; Zhang, Hui, & Michaud, 1995; Zhang, Smith, Pease, & Jambor, 1997; Baade & Tiehen, 1990). Three experts who represented academy in sport management and research methods from Taiwan were asked to rate each question

according to a five-point Likert scale. A criterion score of 3.0 was needed in the final instrument. They were also asked to group questions into composite subscales. There were no delete questions from the instrument.

The final questionnaire consisted 30 questions which were divided into 5 factors: player's performance (5 items), facilities and environment (3 items), finance (2 items), promotion (6 items), and personal factors (14 items). A 5-point Likert scale was used as the rating scale. The internal consistency of the scale was calculated using Cronbach coefficients: player's performance $\alpha=.91$, facility and environment $\alpha=.71$, finance $\alpha=.83$, promotion $\alpha=.92$, personal factor $\alpha=.92$.

Procedure

1. Pilot Study

The pilot study was conducted on October 22, 2006. Sixty of the spectators, who were watching the National Table Tennis Chairman Cup competition, were participated in the pilot study. These participants were excluded from the formal research project. The Cronbach coefficients α was used to test the internal consistency: Performance $\alpha=.87$, Facility and environment $\alpha=.68$, Finance $\alpha=.81$, Promotion $\alpha=.91$, Personal factor $\alpha=.89$.

2. Formal Study

The questionnaire method was utilized in this study to identify determinant factors of spectator attendance. Students assisted with the distribution and collection of the questionnaire at the contest. Students were trained to explain and collection data before the competition. Students were placed at alternating entrances to seating areas in the stadium. The purpose of this study and the instruction for the completion of the survey were included with the questionnaire. One hundred and twenty participants completed the Table Tennis Spectator Attendance Scale (TTSAS) and the demographic information sheet. The survey took approximately 10 minutes to complete. The participants completed the questionnaire immediately and return it to students. All of the participants were informed of their right to confidentiality and anonymity.

Data Analyses

Descriptive statistics were used to report determinant factors of spectators' attendance at the game. The demographic factors, such as the participants' (1) gender, (2) age, (3) occupation, (4) education level, (5) marital status, (6) income were subjected to a one-way ANOVA to test the mean difference on each factor. For post hoc comparison, Tukey tests were applied to determine the multiple comparisons among groups.

Results

Results of the research questions were indicated as following:

Determinant factors of spectator attendance

Descriptive statistics were used to examine determinant factors of spectator attendance (see Table 1). The factors were indicated from the highest to the lowest mean ranked. The findings indicated that player's performance ($M = 3.94$, $SD = .85$) was the top rated factors followed by personal factors ($M = 3.80$, $SD = .63$), facility and environment ($M = 3.68$, $SD = .85$), and promotion ($M = 3.51$, $SD = .96$). Finance was the lowest rated factor ($M = 2.70$, $SD = 1.05$).

Table 1

Descriptive Statistics of Determinant Factors

Determinant factors	<i>N</i>	<i>M</i>	<i>SD</i>
Player's Performance	120	3.94	.85
Personal factors	120	3.80	.63
Facility & environment	120	3.68	.85
Promotion	120	3.51	.96
Finance	120	2.70	1.05

The Relationship between Demographic Variables and Determinant Factors

Demographic variables and their influence on determinant factors were examined by asking research question 2. A one-way ANOVA was used to examine the relationship between determinant factors and demographic variables. Demographic factors were: (1) gender, (2) age, (3) occupation, (4) education level, (5) marital status, (6) income. Each ANOVA was tested at a significance level of .05.

There was no significant relationship between gender and the variables of player's performance, facility and environment, personal factors and finance. However, there was significant relationship between gender and promotion (see Table 2).

Table 2

Summary of ANOVA for Relationship Between Gender and Determinant Factors

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
Facility and Environment					
Male	53	3.80	.61	2.45	.12
Female	64	3.55	1.01		
Player's Performance					
Male	53	4.06	.83	1.67	.19
Female	64	3.85	.87		
Promotion					
Male	53	3.79	.86	7.34*	.00
Female	64	3.32	.99		
Personal Factors					
Male	53	3.79	.58	.024	.87
Female	64	3.81	.68		
Finance					
Male	53	2.88	1.12	2.71	.10
Female	64	2.55	1.00		

* $p < .05$

An ANOVA test was conducted to compare age and determinant factors of spectator attendance. There was significant relationship between age groups in player's performance, personal factors, facility and environment, promotion, and finance. Tukey test indicated that there was significant difference between the age group of below 20 years old and 21-25, 26-30, and 31-35 in player's performance. The results indicated that age 21-25, 26-30, and 31-35 spectators decided to participate the game were more influence on player's performance than age below 20 years old. Age below 20 years old was difference with age 31-35 in facility and environment and personal factors. In other words, age of 31-35 was more consider facility and environment and personal factors than age of below 20 when they were participated the game. Moreover, finance factor was difference between age group of below 20 and 21-25. The result also indicated that age of below 20 was more consider finance than age of 21-25 (see Table 3).

Table 3

Summary of ANOVA and Tukey Post Hoc Test for Relationship Between Age and Determinant Factors

	N	M	SD	F	p	Post Hoc
Facility and Environment					.	below
Below 20	46	3.04	1.01	5.16*	.00	20 < above 41
21-30	12	3.97	.61			
31-40	23	3.84	.58			
Above 41	36	3.92	.69			
Player's Performance						below
Below 20	46	3.55	1.04	6.22*	.00	20 < 21-30,
21-30	12	4.35	.43			31-40, and
31-40	23	4.25	.62			above 41
Above 41	36	4.11	.63			
Promotion						
Below 20	46	3.34	3.34	2.75*	.04	
21-30	12	3.79	3.79			
31-40	23	3.29	3.29			
Above 41	36	3.84	3.84			
Personal Factors						below
Below 20	46	3.56	3.56	3.85*	.01	20 < above 41
21-30	12	3.94	3.94			
31-40	23	3.90	3.90			
Above 41	36	3.98	3.98			
Finance						below
Below 20	46	3.02	3.02	3.89*	.01	20 > 21-30
21-30	12	1.95	1.95			
31-40	23	2.69	2.69			
Above 41	36	2.54	2.54			

*p<.05

The ANOVA test indicated that occupation were significant related with facility and environment, player's performance, promotion, personal factors, and finance. Tukey test showed significant different between public official and student, public official and artist, agriculturist and artist in promotion. Occupation group of labour was significant difference with public official and agriculturist regarding personal factors. The results also displayed that artist was significant difference with students, public official in finance. Hence, it indicated that public official was more emphasis on promotion than student-artist and agriculturist placed more on promotion than artist. Agriculturist and public official displayed more on personal factors than labour. Moreover, student and public official were addressed more on finance than artist (see Table 4).

Table 4

Summary of ANOVA and Tukey Post Hoc Test for Relationship Between Occupation and Determinant Factors

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	<i>Post Hoc</i>
Facility and Environment						
Student	44	3.40	.91	3.06*	.01	
Public official	19	4.03	.59			
Businessman	17	3.70	.76			
Labour	7	3.09	1.43			
Agriculturist	16	3.97	.61			
Artist	14	3.90	.64			
Player's Performance	44	3.70	.92	2.81*	.02	
Student	19	4.25	.50			
Public official	17	3.94	.63			
Businessman	7	3.37	1.65			
Labor	16	4.36	.65			
Agriculturist	14	4.08	.68			
Artist						
Promotion						
Student	44	3.43	.92	4.70*	.00	public official > student, artist. Agriculturist > artist
Public official	19	4.21	.88			
Businessman	17	3.37	.76			
Labor	7	3.21	1.59			
Agriculturist	16	3.87	.78			
Artist	14	2.85	.56			
Personal Factors						
Student	44	3.66	.55	3.41*	.00	Agriculturist, public official > labor
Public official	19	4.02	.57			
Businessman	17	3.89	.46			
Labor	7	3.10	1.45			
Agriculturist	16	4.03	.46			
Artist	14	3.89	.44			
Finance						
Student	44	3.09	.99	4.52*	.00	Student, public official > artist
Public official	19	2.92	1.09			
Businessman	17	2.58	.77			
Labor	7	2.14	.89			
Agriculturist	16	2.53	1.28			
Artist	14	1.78	.64			

* $p < .05$

By ANOVA test, there was significant relationship between education levels and family and environment, player's performance, promotion, personal factors, and finance (see Table 5). A post hoc comparison-Tukey test was used to determine difference among five levels of education. The results did not show significant difference between those groups with elementary, junior-high, high school, college, and above master degree.

Table 5

Summary of ANOVA for Relationship Between Education Levels and Determinant Factors

	N	M	SD	F	p
Facility and Environment					
Elementary	4	2.33	1.63	5.40*	.00
Junior-high	41	3.40	.93		
High school	24	3.88	.66		
College	47	3.88	.63		
Above master degree	1	4.33			
Player's Performance					
Elementary	4	2.75	2.06	5.62*	.00
Junior-high	41	3.64	.93		
High school	24	4.31	.62		
College	47	4.12	.57		
Above master degree	1	3.40			
Promotion					
Elementary	4	1.95	.86	4.28*	.00
Junior-high	41	3.44	1.15		
High school	24	3.87	.95		
College	47	3.58	1.00		
Above master degree	1	2.50	.80		
Personal Factors					
Elementary	4	2.46	.96	8.46*	.00
Junior-high	41	3.67	1.70		
High school	24	4.13	.57		
College	47	3.85	.53		
Above master degree	1	3.21	.41		
Finance					
Elementary	4	1.50	.57	4.93*	.00
Junior-high	41	3.18	.95		
High school	24	2.58	1.14		
College	47	2.46	.97		
Above master degree	1	1.50			

*p<.05

Marital status was not significant related with five factors which were facility and environment, player's performance, promotion, personal factors and finance (see Table 6). In other word, marital status was not correlated with determinant factors.

Table 6

Summary of ANOVA for Relationship Between Martial Status and Determinant Factors

	N	M	SD	F	p
Facility and Environment					
Married	56	3.75	.82	.94	.33
Single	61	3.59	.88		
Player's Performance					
Married	56	4.03	.86	1.13	.28
Single	61	3.86	.85		
Promotion					
Married	56	3.61	1.06	.71	.39
Single	61	3.45	.86		
Personal Factors					
Married	56	3.87	.73	1.71	.19
Single	61	3.72	.53		
Finance					
Married	56	2.55	1.07	2.08	.15
Single	61	2.83	1.03		

*p<.05

Income was not significant related with facility and environment, promotion, while it was significant related with player's performance, personal factors, finance. Tukey's post hoc analysis showed that there was significant different between income group of below \$150 and \$1001-\$1350 in player's performance and income group of \$351-\$650 and \$651-\$1000 in finance. In other word, income of \$1001-\$1350 was greater in player's performance than income of below \$150 and income of \$651-\$1000 placed more emphasis on finance than income of \$351-\$650 (see Table 7).

Table 7

Summary of ANOVA and Tukey Post Hoc Test for Relationship Between Income and Determinant Factors

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	<i>Post Hoc</i>
Facility and Environment						
Below \$150	48	3.43	.89	1.79	.12	
\$151-\$350	10	4.13	.57			
\$351-\$650	11	3.72	.55			
\$651-\$1000	11	4.03	.87			
\$1001-\$1350	13	3.66	.60			
Above \$1351	17	3.80	1.11			
Player's Performance						
Below \$150	48	3.70	.92	2.80*	.02	Below \$150 < \$1001-\$1350
\$151-\$350	10	4.14	.59			
\$351-\$650	11	4.18	.49			
\$651-\$1000	11	4.32	.51			
\$1001-\$1350	13	4.47	.43			
Above \$1351	17	3.72	1.15			
Promotion						
Below \$150	48	3.40	.93	.57	.71	
\$151-\$350	10	3.60	.77			
\$351-\$650	11	3.65	1.01			
\$651-\$1000	11	3.89	.95			
\$1001-\$1350	13	3.70	.95			
Above \$1351	17	3.50	1.22			
Personal Factors						
Below \$150	48	3.67	.55	2.35*	.04	
\$151-\$350	10	3.97	.41			
\$351-\$650	11	3.89	.42			
\$651-\$1000	11	4.16	.62			
\$1001-\$1350	13	4.05	.55			
Above \$1351	17	3.54	1.00			
Finance						
Below \$150	48	2.99	1.02	3.41*	.00	\$351-\$650 < \$651-\$1000
\$151-\$350	10	2.20	.63			
\$351-\$650	11	2.09	.88			
\$651-\$1000	11	3.40	1.06			
\$1001-\$1350	13	2.34	.77			
Above \$1351	17	2.61	1.34			

* $p < .05$

Hence, it was concluded that determinant factors were significant relationship with age, occupation, education levels. Gender only associated with promotion. Income was related with player's performance, personal factors, and finance. Marital status was not correlated with determinant factors (see Table 8).

Table 8

Summary of the Significant Relationship Between Determinant Factors and Demographic Variables

Demographic Variables	Determinant Factors				
	Facility and Environment	Player's Performance	Promotion	Personal Factors	Finance
Gender			x		
Age	x	x	x	x	x
Occupation	x	x	x	x	x
Education Levels	x	x	x	x	x
Marital Status					
Salary		x		x	x

Discussion

Determinant factors of spectator attendance

The result of present article indicated that the player's performance was the top determinant factor of spectator attendance. It corresponded with prior research that stated that player's performance was an extremely important factor for spectators (Wang, 2005; Shih, 2001). Researches stated that player's performance can reinforce pleasures and enjoyment which can attract individuals to attending sport events (Huang & Liu, 2006; Robinson & Trail, 2005). Madrigal (2003) also noted that high quality of the athletes' actions would bring spectators to experience entertainment value. He further revealed that performance satisfaction could predict the decision to attend the event because spectators would look forward to see a skill performance. Consequently, player's performance was an important determinant factor associated with spectator attendance.

Personal factors were the second high score of determinant factor displayed in this study. This supports Carter and Rovells' (2004) statement which were watching sport activities were a way to feel relax and can escape from routine work. Sport is a special kind of experience which produces the drama of structure and uncertainty which fuller meaning to the contest of watchers. Kelly (1996) noted that the intrinsic pleasure or happiness, a quality of experience, and the meaning of activity were very important reasons for people to spend their time attending the game. Madrigal (2003) also pointed out that some spectators watched contests because they tended to favor on particular team or player have a strong desire to see the preferred team or player win games. Therefore, onlookers participated the game would consider their own experience, especially pleasure and enjoyment experience, or favor on a team/player.

The finding was not surprising that promotion was significant related to attending the contest. This supports Parkhouse (1996) stated that promotion is an important skill to attract people's attention, increase interest in the contest, arouse a desire, and ultimately motivate the spectators to participate the contest. Hence, promotion is very important way to attract spectator to attending games.

One additional determinant factor was finance which was the lowest score of determinant factor. The reason for this result could be because "appreciation of the aesthetic quality of the event loaded highly from the motive set" (Robinson & Trail, 2005, p. 76) so spectators seem concern more on aesthetic quality of the contest and the experience of drama in the game than the finance such as the ticket price.

The Relationship between Demographic Variables and Determinant Factors

The result indicated that gender was significant related with promotion of determinant factors. This finding is an important resource because it suggests the table tennis association and providers of table tennis events themes upon which to develop promotion strategies to attract both female and male spectators. This supports Robinson and Trails' (2005) statement which were "either males and females have innately different motives or that society implicitly or explicitly teaches male and females to have different motives" (p. 59). Wann, Brewer, and Royalty (1999) also showed that motivation was significant differences by gender. Research revealed that most people believe male spectators were

predominant in sports (Gantz & Wenner, 1995). However, female spectators were as likely as male spectators (Dietz-Uhler, Harrick, End, & Jacquemotte, 1999). Therefore, in order to attract males and females equally to attending games, the National Table Tennis Association and providers of table tennis contests need to consider different promotion strategies to motivate different gender to participate games.

Age, education levels, and occupation were significant relationship with determinant factors of spectator attendance. It corresponded with Carter and Rovells' (2004) suggestions: age, education levels, and occupation were important resources to understand background of target market and to design appropriating promotion program in order to attract people attending games. Thus, age, education levels, and occupation were important elements for understanding spectator attendance.

The surprising of the study was the factor of income. Income was not significant related with promotion. It did not corresponded with Parkhouse (1996) mention: investigating income of target people can aid providers of sport events to map out the level of individual spectator in order to attract spectator watching sport contests. The reason for this result could be because the competition did not need to buy ticket to watch games so promotion strategies did not need to consider spectators' income as a major element for attracting spectators' participated games. Another reason could be because "sport is quite important to many adults and even more to youths and children" (Kelly, 1996, p. 210). It seems indicated that sport is becoming a central element of people's life so no matter how much they made they still participated games.

The interesting finding in this study was the factor of marital status. This finding indicated that marital status was not related with determinant factors of spectator attendance. The reason for this result could be because spectators were more concern on pleasure, enjoyment and experience of psychological feeling in the game than spectators who were married or not. Kelly (1996) addressed spectator enjoyed the intrinsic and social experience in games. He pointed out that "...the spectators—sitting, complaining, and eating as well as leaping, yelling, and letting themselves go" (p. 207). Madrigal (2003) also noted that "a sport event, like many types of performance, is consumed primarily for enjoyment" (p. 43). Hence, married status would not influence onlookers' participating games.

Conclusions and Suggestions for Future Research

Conclusions

The purpose of this study was to examine the determinant factors of spectator attendance. The findings indicated that player's performance was the top rated factors followed by personal factors, facility and environment, and promotion. Finance was the lowest rated factor.

The demographics were useful for predicting spectating rates (Nixon & Frey, 2000). The second research question was to find out the relationship between demographic variables and determinant factors of spectator attendance. It included gender, age, occupation, education levels, marital status, and income. The results displayed that age, occupation, and education levels were associated with determinant factors. Gender only related with promotion. Player's performance, personal factors, and finance were correlated with income. Marital status was not significant relationship with determinant factors.

Suggestions for Future Research

Understanding spectator is fundamental to promote spectating rates (Nixon & Frey, 2000). Thus, the results of this study can be a useful resource to the table tennis association and the provider of table tennis contests to understand the spectator in order to attract people attending table tennis games. However, this study only used the national table tennis tournament spectators as sample so future research should continue to duplicate the study within different contests, different levels of competition and different culture. Furthermore, spectators who were not attended games also need to be surveyed in order to gain a better understanding of the underlying determinant factors of

those who might not attend games. In addition, Participation and spectating are often intertwined. Future research is needed to better understand the connection between participation and spectating in order to predict or attract people to involve in sports.

Reference

- Armstrong, K. L. (2002). Race and sport consumption motivation: A preliminary investigation of a black consumers' sport motivation scale. *Journal of Sport Behavior*, 25(4), 309-330.
- Baade, R. A. & Tiehen, L. J. (1990). An analysis of Major League Baseball attendance, 1967-1987. *Journal of Sport and Social Issues*, 14, 14-32.
- Carter, D. M. & Rovell, D. (2003). *On the ball: what you can learn about business from America's sport leaders*. US: Person Education, Inc.
- Cohen, A. & Avrahami, A. (2005). Soccer fans' motivation as a predictor of participation in soccer-related activities: an empirical examination in Israel. *Social Behavior and Personality*, 33(5), 419-434.
- Dietz-Uhler, B., Harrick, E. A. End, C., & Jacquemontte, L. (2000). Sex differences in sport fan behavior and reasons for being a sport fan. *Journal of Sport Behavior*, 23, 219-231.
- Gantz, W. & Wenner, L. A. (1995). Fanship and the television sports viewing experience. *Sociology of Sport Journal*, 12, 56-74.
- Hansen, H. & Gauthier, R. (1989). Factors affecting attendance at professional sport events. *Journal of Sport Management*, 3(1), 15-32.
- Huang, C. M. & Liu, C. M. (2006). The study of professional baseball fan spectating experience. *The University Physical Education and Sports*, 84, 106-112.
- James, J. Ridinger (2002). Female and Male Sport Fans: A Comparison of Sport Consumption Motives. *Journal of Sport Behavior*, v. 25, n. 3, p. 261-278.
- Kao, C. H. (2002). *Recreational sport business management*. Taipei: Zhi-xuan.
- Kelly, J. R. (1996). *Leisure*. Needham Heights, MA: Allyn & Bacon.
- Madrigal, R. (2003). Investigating an evolving leisure experience: antecedents and consequences of spectator affect during a live sporting event. *Journal of leisure research*, 35(1), 23-48.
- McDonald, M. A., Milne, G. R., & Hong, J. (2002). Motivational factors for evaluating sport spectator and participant markets. *Sport Marketing Quarterly*, v11, n2, p. 100-113.
- Nixon, H. L., & Frey, J. H. (2000). *A sociology of sport* (Wang, et al.). Taipei: Ho-Ye (original version publish on 1998).
- Parkhouse, B. L. (1996). *The management of sport: its foundation and application* (2nd). Philadelphia: Mosby.
- Robinson, M. J. & Trail, G. T. (2005). Relationships among spectator gender, motives, points of attachment, and sport preference. *Journal of Sport Management*, 19, 58-80.
- Shih, C. P. (2001). The study of prediction model of Chinese basketball association spectators participation. *Journal of Physical Education in Higher Education*, 30, 131-142.
- Wang, C. M. (2005). A study of fans' motivation and their satisfaction of the Sinon Bulls' professional baseball team. *Journal of Physical Education in Higher Education*, 7(1), 67-78.
- Wann, D. L., & Branscombe, N. R. (1993). Sports fans: Measuring degree of identification with their team. *International Journal of Sport Psychology*, 24, 1-17.
- Wann, D. L., Brewer, K. R., & Royalty, J. L. (1999). Sport fan motivation: Relationships with team identification and emotional reactions to sporting events. *International Sports Journal*, 3 (Summer), 8-18.
- Wann, D. L., & Grieve, F. G. (2005). Biased Evaluation of In-Group and Out-Group Spectator Behavior at Sporting Events: The Importance of Team Identification and Threats to Social Identity. *The Journal of Social Psychology*, 145(5), 531-545.

- Zhang, J. J., Pease, D. G., Hui, S. C., & Michaud, T. J. (1995). Variables affecting the spectator decision to attend NBA games. *Sport Marketing Quarterly*, 4(4), 29-39.
- Zhang, J. J., Smith, D. W., Pease, D. G. & Jambor, E. A. (1997). Negative influence of market competitors on the attendance of professional sport games: The case of a minor league hockey team. *Sport Marketing Quarterly*, 6(3), 34-40.