

The influence of sports lottery purchase on sports participation behavior

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ABSTRACT

The purpose of this research is to understand the influence of sports lottery consumption motivation and sport spectators on sports participation behavior. In the present study, a total of 500 questionnaires were issued. Out of those, 479 valid questionnaires were returned. Self-compiled consumption motivation scale, sports spectators scale and sports participation behavior scale were used as research tools, with sports lottery ticket purchasers as the research object of the current study. The effective return rate is up to 95.8%. Followed by data collection, statistical analysis was done using various statistical tests which include, descriptive statistics, independent sample t test, single factor variance analysis and snow-fee method post-comparison, Pearson product difference correlation, multiple stepwise regression analysis and logistic regression. Conclusion: The overall consumption motivation of sports lottery consumers present a medium-level cognition situation. The sports spectators scale present a medium-to-low level situation, and the overall sports participation behavior-goal identity present a medium-to-high level cognition situation. Gender has a significant role with respect to entertainment factors and sports spectators in the consumption motivation factor dimension. Age has a significant role with respect to the public welfare factor in the consumption motivation factor dimension; education degree is in the consumption motivation factor dimension of economic factor, public welfare factor and sports spectators and sports participation behaviors-goal

identification were found to be significantly different. Marriage had a significant difference in consumption motivation factor in terms of entertainment factor, public welfare factor and sports spectators and sports participation behaviors-goal identification; occupation is in consumption motivation factors economic factor, public welfare factors have reached a significant difference; monthly income has a significant difference in consumption motivation and sports spectators. Significant correlation was found between consumption motivation and sports appreciation. Consumption motivation had a positive effect on sports participation behavior-goal identification shows entertainment factor and public welfare factor; sports spectators show a positive influence on sports participation behavior-goal identification. Sports spectators had shown a significant relationship between sports participation behavior and actual participation.

KEYWORDS

Logistic regression analysis; Target identification; Pearson product-moment correlation coefficient.

1. INTRODUCTION

In recent years, sports lottery tickets have become popular and many individuals are purchasing these tickets. Sports lottery tickets are issued for specific sports events. Chang & Liu (2017) pointed out that sports lottery tickets are simple, diverse and have a charity nature. These tickets are very popular in Taiwan and are one of the important sources of funding for the development of the sports industry. In Taiwan, the trend of distribution of the sports lottery coupons started since 2008. Sports lottery tickets vary from general lottery tickets. The basic need of the buyer is that he or she should have appropriate awareness regarding the relevant sport and experience to enable them to better understand and integrate into the game. Therefore, people in the sports industry believe that the issuance of sports lottery tickets can promote my country's sports industry and also provide financial subsidies to the sports industry (Lin & Lin & Lee, 2019). In the year, 2018 Taiwan's Sports Administration announced the actual sales amount of sports lottery coupons. Their average sale was 3,747,621,040 dollars. It has been observed that issuance of sports lottery tickets is the future development trend of the sports industry and has occupied a very important position in the sports industry Sports lottery system has great beneficial effects in terms of increasing government taxation, supplementing sports funding, and developing public construction (Yang & Yang & Lin & Wu, 2020). An effective increase in sports color sales may increase the ratings of sports broadcasting industry. If sports spectators will increase, it will automatically increase sports participation behaviors and will make the specific sport more popular (Yang & Tseng & Lin & Chang, 2018).

If consumers are not familiar with sports, the possibility of winning bets would decrease, and their consumption motivation will decrease accordingly. Therefore, watching sports may have a lot of importance for sports lottery consumers (Yang & Yang & Lin & Wu, 2020). The enthusiasm for engaging in a certain sport may spread to other types of leisure activities related to that sport, including watching the sport. Because by engaging in the sport, the more you understand it, the more you can appreciate and enjoy the game while watching it, and generate the willingness and motivation to watch it (Gau, 2017).

Based on the above discussion, people will buy sports coupons for various reasons. There are also many experts and scholars discussing the study of consumption motivation with sports spectators, sports spectators with sports participation behaviors. However, there is little relationship between consumption motivation, sports spectators, and sports participation behavior. So what makes us curious is whether consumption motivation and sports spectators affect people's actual participation in sports or change their sense of identity with sports.

The general objective of this research was to understand the consumption motivation of sports lottery coupons, the influence of sports viewing and sports participation behaviors. The specific objectives of this study were: 1) To understand the current status of the research variables of sports lottery consumers. 2) To find the differences in sports lottery consumers' consumption motivation, sports spectators and sports participation behaviors with different background variables. 3) To discuss the consumption motivation of sports lottery consumers and the related situation of sports spectators. 4) To discuss the influence of sports lottery consumers' consumption motivation and sports spectators on sports participation behavior-goal identification. 5) To discuss the consumption motivation of sports lottery consumers and the influence of sports spectators on sports participation behavior-actual participation.

2. METHODS

2.1. Participants

The participants were sports lottery purchasers. A total of 500 questionnaires were distributed, of which 479 valid questionnaires were returned. Therefore, the final sample was composed of 479 sports lottery purchasers.

2.2. Instruments

2.2.1. Consumption Motivation Scale

The consumer motivation scale for sports lottery coupons is based on the lottery purchase motivation scale proposed by Gau & Huang & Ciou (2018). Consumption Motivation Scale has three dimensions which includes economic factor, entertainment factor, and public welfare factor and total 16 items. Each item is scored on 5 point likert scale, ranging from 1 to 5 (from strongly disagree to normal). High scores reflect high feeling of consumption motivation. As per the result of project analysis, out of 16 questions in this scale, item 4 is not related to more than 30 in the general table. Hence it was deleted. The rest of the questions are verified by the internal consistency calibration method and related analysis, which indicated that all the questions had discernment. The results of stratified factor analysis yielded a total of 15 items with four factors, and the total explained variance was between 70.9% and 91.7%. According to the results of reliability analysis, the Cronbach's Alpha coefficient of the total scale is .858, which shows that the consumption motivation scale has high reliability and validity.

2.2.2. Sport Spectator Scale

Sports lottery consumer sports spectator scale was revised based on the question of the consumption behavior scale for watching sports and purchasing sports lottery coupons proposed by Gao (2009). It included three items: surfing the Internet, watching on TV, and reading newspapers and magazines and use single-question scale for scoring. A single-question scale was used for scoring the time duration for which sports is being watched. Scoring was done on 6 point Likert scale. Higher score indicated more time duration to watch the sports. The 3 questions of this scale passed the verification of internal consistency standard method and related analysis, indicating that all the questions are discriminatory.

2.2.3. Sports Participation Behavior Scale

The sports lottery consumer sports participation behavior scale is divided into sports goal recognition and actual participation. Sports goal identification is based on the high school students' sports goal identification table compiled by Chen and Liang (2008). Total 13 questions were revised for sports participation identification. It included three dimensions: cognition, affection, and society. The scoring was done on five point Likert scale ranging from 1 to 5. The higher the score, the higher was the feeling of identification with the goal of participating in the sport. The 13 questions of this scale have passed the verification of internal consistency standard method and related analysis, indicating that all the questions are discriminatory. The results of the stratified factor analysis yielded

a total of 13 items with three factors. The total variation ranged from 79.8% to 83.9%. According to the results of reliability analysis, the Cronbach's Alpha coefficient of the total scale was .888, which shows that the consumption motivation scale has high reliability and validity.

2.3. Data analysis

Followed by data collection, statistical analysis of data was processed by SPSS program. Descriptive statistics were computed as percentage, frequency, average, and standard deviation. Independent sample t test was done to verify the differences in consumption motivation, sports spectators and sports participation behaviors of different genders. Single-factor variance analysis was done to test the differences in sports lottery consumers of different consumers' age, education level, marital status, occupation and monthly income, consumption motivation, sports viewing and sports participation behavior at various levels. Post Hoc analysis was done using Scheffé's method. Pearson product moment correlation was done to understand the consumer motivation, watch sports-related situations between the various dimensions. Multiple regression analysis was done to see the influence of consumer motivation of sports lottery on sports participation behavior-goal identification and sports spectators on sports participation behavior-goal identification. Logistic regression analysis was done to see the influence of consumer motivation of sports lottery on sports participation behavior-actual participation and sports spectators on sports participation behavior-actual participation.

3. RESULTS

3.1. Current status analysis of research variables

The consumption motivation scale has three dimensions. The overall consumption motivation presents a moderate degree of cognition ($M=3.27$, $SD=0.57$). The entertainment factor has the highest cognition ($M=3.53$), which indicates that more sports lottery consumers buy lottery tickets due to entertainment factors, and fewer people get bonuses for winning prizes. The results of sports spectators showed a middle-to-low degree situation ($M=2.93$, $SD=1.27$). Results have also shown that out of many games, sports lottery consumers watch ball games the most ($M=3.21$). Their average watch time was 1 to 3 hours /week.

There are three dimensions of the sports participation behavior-goal identification scale. The results have shown that the overall sports participation behavior-goal identification presents a medium-to-high degree of cognition ($M=4.00$, $SD=0.61$). Social factors have the highest awareness ($M=4.02$), which means that sports lottery consumers have more people because they are willing to

meet their fellows and enrich their personal social life. Simultaneously, very few of them want to actually understand the rules of sports and establish correct concept and technique of the game.

3.2. Differences between variables in different backgrounds and research variables

3.2.1. Gender factor

In the present study, no significant difference was found between two variables of economic factors, public welfare factors and sports participation behavior-goal identification in the consumption motivation factor dimension. Whereas, the entertainment factor and sports spectators in the consumption motivation factor dimension were significantly different. It means that gender is a significant factor with respect to the entertainment factor and sports spectators. Men have higher awareness of entertainment factor and sports spectators than women.

Table 1. Gender and research variables independent sample T test summary table

Research Variable	Factor	Gender	Number	Average	Standard Deviation	T value
Consumption Motivation	Entertainment	Male	370	3.60	.74	-3.26**
		Female	109	3.33	.84	
Sport Spectators		Male	370	3.16	1.25	-8.65**
		Female	109	2.17	.99	
	Cognition	Male	370	4.01	.63	-2.85**
		Female	109	3.81	.69	
Goal Identification	Affection	Male	370	4.06	.64	-3.30**
		Female	109	3.82	.80	
	Social	Male	370	4.09	.67	-3.40**
		Female	109	3.79	.85	

** $P < .001$

3.2.2. Age factor

No significant difference was found between economic factor and entertainment factor, between consumption motivation factor, sports spectators and sports participation behavior-goal identification. Whereas, significant differences were found in consumption motivation factor in public welfare factor. According to the Scheffé method, at the age of 35-44 and 45-54 years, sports lottery consumers have a greater awareness of the consumption motivation for public welfare than at the age of 18-24 years.

Table 2. Summary table of single factor variance analysis of age and research variables

Research Variable	Facet	Age	Number	Average	Standard Deviation	F value	Scheffé
Consumption Motivation	public welfare factor	18-24	222	3.13	.82	8.82**	3.4>1
		25-34	134	3.40	.87		
		35-44	64	3.76	.64		
		45-54	40	3.61	.74		
		55-64	15	3.57	.62		
		Over 65	4	2.44	1.19		

** $P < .001$

3.2.3. Education degree factor

There is no significant difference between the entertainment factor and consumption motivation factor. Whereas, significant difference was observed between the economic factor and public welfare factor, between consumption motivation factor and sports spectators and sports participation behavior-goal identification. According to the post hoc, Scheffe analysis sports lottery consumers with a university education degree are more aware of the economic factor of consumption motivation than high school degree, but in terms of public welfare factor, high school education degree is greater than university degree.

Master degree's sports lottery consumers have higher appreciation of sports than junior high school degree. Master degree's sports lottery consumers have greater awareness of sports participation behavior-goal identification than high school degree and university degree.

Table 3. Summary table of single factor variance analysis of education degree and research variables

Research Variable	Factor	Variety	Number	Average	Standard Deviation	F value	Scheffé
Consumption Motivation	Economic Factor	Elementary School	3	3.00	.33	3.93**	4>3
		Junior high School	17	3.35	1.06		
		High School	108	2.67	.81		
		University	307	3.00	.76		
		Master	38	2.80	.96		
	Public Welfare Factor	Doctor	6	3.00	.89	3.26**	3>4
		Elementary School	3	3.50	1.32		
		Junior high School	17	3.63	.76		
		High School	108	3.56	.69		
		University	307	3.24	.86		
		Master	38	3.42	.75		

		Doctor	6	2.96	1.81		
Sports Spectators		Elementary School	3	2.33	1.15		
		Junior high School	17	2.16	0.97		
		High School	108	2.82	1.24	3.13**	5>2
		University	307	2.95	1.25		
		Master	38	3.43	1.33		
		Doctor	6	3.56	1.91		
		Elementary School	3	3.67	1.23		
Goal Identification	Cognition Factor	Junior high School	17	3.93	.56	4.03*	5>3
		High School	108	3.81	.55		
		University	307	3.97	.67		
		Master	38	4.34	.20		
		Doctor	6	3.79	1.01		
		Elementary School	3	2.83	1.64		
		Junior high School	17	3.89	.62	6.45**	5>4.3
Affection Factor	High School	108	3.88	.55			
	University	307	4.00	.71			
	Master	38	4.44	.48			
	Doctor	6	4.44	.65			

* $P < .05$ ** $P < .001$

3.2.4. Marriage Factor

In the present study, no significant difference was found between economic factor in the dimensions of consumption motivation factor. There were significant differences between entertainment factor, public welfare factor and sports spectators and sports participation in the consumer motivation factor dimension. As per the post hoc Scheffé analysis, sports lottery consumers, those who are unmarried had greater awareness of entertainment factor than those who are married and have children. The cognitive factor and affection factor of unmarried sports lottery consumers with respect to the sports participation behavior-target identification factor are greater than those of married with children. However, there is no significant difference between social factor and sports spectators in the Scheffé method.

Table 4. Summary table of single factor variance analysis of marriage and research variables

Variables	Factor	Marriage Situation	Number	Average	Standard Deviation	F value	Scheffé
Consumer Motivation	Entertainment	Unmarried	335	3.60	.75	4.84**	1>3
		Married, no children	29	3.27	.98		
		Married, Have children	115	3.40	.75		
		Unmarried	335	3.28	.82		
		Married, no children	29	3.14	1.25		
		Married, Have children	115	3.54	.72		
	Public Welfare	Unmarried	335	4.05	.63	12.30**	1>2.3
		Married, no children	29	3.69	.77		
		Married, Have children	115	3.75	.62		
		Unmarried	335	4.09	.66		
		Married, no children	29	3.68	.96		
		Married, Have children	115	3.84	.62		

* $P < .05$ ** $P < .001$

3.2.5. Occupation Factor

There is no significant difference between entertainment factor and sports spectators and sports participation behaviors in the consumption motivation factor dimension-goal identification. However, significant difference was found between economic factor and public welfare factor.

Table 5. Summary table of single factor variance analysis of occupational and research variables

Variety	Factor	Occupation	Number	Average	Standard Deviation	F value	Scheffé
Economic		Student	193	2.95	.73	2.13*	N.S.
		Soldier、Government employee、Teacher	33	2.96	.93		
		Business	36	3.03	.77		
		Industry	42	2.75	.86		
		Farmer、Forest、Fisher、Herder	10	2.93	.93		
		Self Employed	42	2.60	.90		

Public welfare	Professionals	11	3.21	.81	3.41**	N.S.
	Service	84	3.04	.82		
	Retired	12	2.44	.97		
	Other	16	3.21	.72		
	Student	193	3.11	.81		
	Soldier 、 Government employee 、 Teacher	33	3.58	1.02		
	Business	36	3.67	.86		
	Industry	42	3.38	.70		
	Farmer 、 Forest 、 Fisher 、 Herder	10	3.73	.68		
	Self Employed	42	3.51	.89		
	Professionals	11	3.59	.60		
	Service	84	3.42	.76		
	Retired	12	3.35	.87		
	Other	16	3.47	.97		

* $P < .05$, ** $P < .001$

3.2.6. Salary Factor

In the present study, no significant difference was found between sports participation behavior-goal identification. Though, significant difference was found in consumption motivation and sports spectators. No significant difference between economic factor and entertainment factor with respect to the consumption motivation factors. Post hoc Scheffé's analysis revealed that consumers with higher income are higher than those with lower income.

Table 6. Summary table of single factor variance analysis of salary and research variables

Variety	Factor	Salary	Number	Average	Standard Deviation	F value	Scheffé
Consumption motivation	Public welfare	Less than 10,000	134	3.03	.84	8.84**	3.4>1
		10,000-20,000	77	3.40	.78		
		20,000-30,000	117	3.53	.72		
		30,000-50,000	110	3.53	.81		
		50,000-70,000	24	3.26	.85		
		70,000-100,000	5	4.35	.49		
		Over 100,000	12	2.54	1.05		
Sports spectators		Less than 10,000	134	3.03	1.34	5.06**	7>1.2.3.4
		10,000-20,000	77	2.58	1.06		
		20,000-30,000	117	2.78	1.30		
		30,000-50,000	110	3.01	1.13		
		50,000-70,000	24	3.17	1.13		
		70,000-100,000	5	2.73	1.12		
		Over 100,000	12	4.53	1.50		

* $P < .05$, ** $P < .001$

3.3. Consumption motivation and sports spectators related analysis

As per the findings of the study, sports lottery consumption motivation and sports spectators (correlation coefficient=.102, * $P < .05$) were found to be significantly correlated, which is a low degree of correlation. Statistical analysis has also revealed that the entertainment factors of consumption motivation are significantly related to sports viewing. The results of this research were in accordance to a study conducted by Chang & Chiu & Chen (2010). In this study, authors believed that, for consumers, buying sports lottery coupons is a kind of entertainment and leisure activity, and it brings fun in their life and helps in relieving stress.

Table 7. Summary table of Pearson correlation analysis of consumption motivation and sports spectators

	Consumption motivation	Sports spectators
consumption motivation		.102*
Sports spectators	.102*	

* $P < .05$

3.4. Stepwise regression analysis of consumption motivation, sports spectators and sports participation behavior-goal identification

Predictive variables such as economic factor, entertainment factor and public welfare factor, three facets and sports spectators. The results showed that only two sub-dimensions and sports spectators reached a significant level, and the first variable input was the entertainment factor, with R^2 value of .087; the second was public welfare factor, with R^2 value of .038; combining these two predictive variables, the R^2 was .125, which means, 12.5% of the target identity of sports lottery consumers was affected by entertainment factor and public welfare factor. The positive predictions of entertainment factor and public welfare factor. It means that purchase sports lottery can bring fun to life and respond to the government's public welfare. Fun can also enrich your personal social life. The R^2 of sports spectator was .027, that is, sports lottery consumers' sports participation behavior-goal recognition, 2.7% is positively affected by sports spectator.

Table 8. Consumption motivation, sports spectators and sports participation behavior-stepwise regression analysis summary table

Dependent variable	independent variable	R	R^2	R^2 increments	F value
Goal identification	Entertainment factor	.295	.087		45.378**
	Public welfare factor	.354	.125	.038	34.059**
	Sports spectators	.165	.027		13.306**

** $P < .01$

3.5. Logistic regression analysis of consumption motivation, sports appreciation and sports participation behavior-actual participation

Sports participation behavior-actual participation were the dependent variables. Consumption motivation and sports spectators were the independent variables. It was observed that consumption motivation has no significant relationship with sports participation behavior-actual participation; while sports spectators has a significant relationship with sports participation behavior-actual participation. Researchers believe that consumers can drift an individual's interest by watching sports and participation in leisure sports.

Table 9. Logistic regression analysis of consumption motivation, sports appreciation and sports participation behavior-actual participation

	B estimated value	S.E,	Wals	df	Significance	Exp (B)
Consumption motivation	.248	.283	.768	1	.381	1.281
Constant	1.595	.919	3.014	1	.083	4.929
Sports spectators	.321	.149	4.640	1	.031*	1.378
Constant	1.518	.414	13.421	1	.000	4.565

4. CONCLUSIONS AND SUGGESTIONS

4.1. Conclusions

4.1.1. Current status of the research variables of sports lottery consumers.

Based on the statistical analysis, and scores of various aspects of consumption motivation, the entertainment factor scored the highest amongst all the factors. Followed by public welfare factor and economic factor. Based on the scores of all aspects of sports spectators, the maximum sports spectators watched ball game on TV. Rest of the group of spectators preferred watching ball game on the internet, read newspaper and magazine for ball game information. Amongst sports participation behavior-goal identification scores for each facets, social factor was the highest, followed by affective factor and cognitive factor.

4.1.2. Differences in consumer motivation, sports spectators and sports participation behaviors of sports lottery coupons with different background variables

Significant difference was found between gender's entertainment factor in consumption motives and sports spectators. Public welfare factor and sports participation behaviors of consumers of different age groups had significant differences in goal identification. Different level of education

also had significant differences in economic factor and public welfare factor, and sports participation behavior-goal identification. Similarly, marital status and different occupation and varied salary structure of the consumers also had significant differences in entertainment factor and public welfare factor, and sports participation behavior-goal identification.

4.1.3. The relationship between consumption motivation and sports spectators

Findings of the study revealed significant correlation between consumption motivation and sports spectators.

4.1.4. The influence of consumption motivation and sports spectators on sports participation behavior-goal identification

The regression analysis of sports lottery consumption motivation, sports spectators and sports participation behavior-goal identification, revealed that entertainment factor, public welfare factor and sports spectators has shown significant level of sports participation behavior-goal identification. In sports lottery consumers' sports participation behaviors-12.5% of the goal identification was affected by entertainment factor and public welfare factor, and 2.7% are affected by sports spectators, and both were positively affected.

4.1.5. The influence of consumption motivation and sports spectators on sports participation behavior-actual participation

The results of this study found that consumption motivation has no significant relationship with sports participation behavior-actual participation. Sports spectators had shown a significant relationship with sports participation behavior-actual participation.

4.2 Suggestions

4.2.1. Sports lottery issuing unit

The results of this study found that gender plays a significant role in the entertainment factor and sports spectators. The authors suggested that sports lottery issuers can give away sports lottery coupons for spectators to support the team at the time when people buy tickets for sports events. In this way, family and friends together can meet to watch sports events, discuss with each other and conduct pre-match analysis and betting, so as to understand sports lottery, enjoy sports watching fun,

and narrow the difference between gender and viewing. In addition, related units can also provide activity for sport lottery consumers, collect several sports lottery to redeem a sport events ticket. Let sport lottery consumers have the opportunity to watch the sport games after purchasing sports lottery, and shorten the difference between sports lottery consumers and sports spectators with different backgrounds.

In the present study, sports lottery ticket consumers are mostly students and males. Authors have recommended that lottery issuers can cooperate with well-known female sports artists to endorse sports lottery tickets. Also, they could increase the exposure rate of sports lottery tickets through advertisements, newspapers and magazines, increasing consumption motivation. The promotion of one-day store manager activities through endorsements can greatly increase the sales volume of lottery coupons in the store. It can also increase the topicality of sports lottery and increase consumers' attention through news media exposure.

4.2.2. Sports broadcasting related units

The results of this study found that the majority of the sports lottery consumers watch sports events on TV. Sports spectators and sports participation behavior-goal identification present a positive impact. The broadcast unit can add a time slot before the event to do pre-match analysis for the sports events, for the better understanding of public regarding game situation. The program can not only analyze various betting events, but also promote sports spectators, increase ratings, and establish correct sports concepts.

4.2.3. Sports related units

Sports lottery consumers agree with sports participation and goals, and 2.7% are affected by sports spectators. Therefore, in order to promote national sports, sports units can give invitation to popular personalities to endorse the sports events. Social media platforms, AV platforms can be used for the purpose of advertisement and to make people more aware regarding beneficial effects of sports. It can also be utilized to promote sports participation, thereby changing the psychological identity of sports viewers in a subtle way, and gradually produce actual sports participation to realize the goal of national sports.

Sports lottery consumers agree with sports participation and goals, 12.5% are affected by entertainment factor and public welfare factor. Sports units can cooperate with sports lottery issuers to print sports slogans, benefits or fun on sports lottery, so that consumers can change their sports

cognition after purchase, and further experience the benefits and fun of sports, and finally enjoy sports and fall in love with sports.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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