Original Article

Adolescent participation in new sports: Extended theory of planned behavior

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Abstract:

While there have been emerging efforts to develop new or non-traditional sports, relatively little attention has been devoted to understanding what influences sport participants' behavioral intention and overt participation behavior toward new sports. Since many new sports have struggled to boost their popularity and increase the number of participants, the purpose of this study is to analyze adolescents' participation behavior in new sports through the extended theory of planned behavior (TPB), including prior knowledge. Specifically, it was hypothesized that attitude, subjective norm, and perceived behavioral control positively influence participation intention. Furthermore, it was expected that participation behavior is influenced by participation intention and perceived behavioral condition and prior knowledge would positively influence attitude and participation intention. Especially, in order for a new sport to be sustainable, it is deemed more important to understand younger participants' behavioral intention and behavior. Using a survey questionnaire, data were collected from a total of 238 junior high school students who were participating in any type of new sports. The data were primarily analyzed using structural equation modeling. The results found that the three components of the TPB, namely attitude, subjective norm, and perceived behavioral control, had a positive influence on subjects' participation intention, which further leads to participation behavior. Of the three TPB main variables, attitude was the strongest predictor for the intention to partake in a new sport, followed by perceived behavioral control and subjective norm. However, perceived behavioral control did not have a direct influence on adolescents' participation behavior. In addition, the participants' prior knowledge had a positive influence on adolescents' attitudes and participation intention. Results indicated that new sport organizations should develop marketing and educational strategies to improve attitudes of potential and current participants toward new sports as well as to teach the rules and benefits of new sports.

Key Words: Extended Theory of Planned Behavior, New Sports, Adolescents, Sport Knowledge

Introduction

The popularity of traditional sports (e.g., soccer, baseball, basketball, football, hockey) has been widely documented in the media and remains a mainstay of cultural significance around the world. Beyond the traditional sports, however, there are many other non-traditional or 'new sports' that might not have the same following. Some of these new sports are often combinations of traditional sports with other twists or activities to create a new format of sport which allows for meaningful competition for athletes of all ages. Gambino (2010) found that athletes of new or hybrid sports are highly motivated and committed to the development of their sports but must constantly persuade others that their sports are actually sports. New sports such as tee-ball, tchoukball, sports stacking, kinball, and floorball often have rule changes from similar traditional sports that in some instances make the new sport safer and easier. This, in turn, allows for greater consumption by the general public. For example, tchoukball is handball without dribbling or physical contact and floorball is ice hockey without ice and, most importantly, without the violent collisions of traditional ice hockey. Gambino also found that many of the organizers of new sports seek out legitimacy by forming organizing bodies to market the unique aspects of their sport when observed in contrast to traditional sports.

Most nations around the world suffer from a downward trajectory of sport participation after the age of 12 and this becomes even more pronounced within the older age groups (Eime et al., 2016). The use of major sporting events (e.g., Olympic Games) to increase participation in sport and physical activity has also come up short in achieving its intended goals (e.g., Weed, 2016). New sports, however, can be beneficial for people in various age groups, especially older adults and adolescents. Opportunities for broad participation are created as new sports can be easier to play regardless of skill, ability and other participation factors more pertinent to traditional sports. Therefore, new sports have been praised as successful participant sports because of the simplified rules and potential for achieving success at early or later stages in life and with limited financial investment. In addition, since a majority of new sports limit bodily contact, there is low risk of injury which

allows these sports to become even more accessible to larger swaths of the population. As a result, new sports can energize participant involvement with sport and physical activity and contribute to the overall well-being and health of certain sectors of the population. Snowboarding is one of the well-known examples of what was once considered a new sport. The root nature of snowboarding is in skiing which is certainly a mainstream, traditional sporting activity. It is of interest to note that the goal of snowboarding pioneers was not to make it a mainstream sport, but in fact to protest the traditional skiing culture. Heino (2000) stated that snowboarding began as young athletes revolted against skiing and its perceived elitist culture. These young athletes were attracted to snowboarding and how “different” it was from the more traditional sport of skiing. In fact, some would even argue that snowboarding and skiing may actually share more similarities than differences (Heino, 2000). This notion of going against traditionalism is in line with Miller’s (1997, p. 8) description of the growth of “new, noncompetitive sport alternatives” that have a connection to the personal experiences of participants. Furthermore, these new sports were often seen as less significant but still remained resistant to the dominance of traditional sports. Sport climbing is another example of a sport that has come to achieve success and is now a sport in the Olympic Games. The advance of snowboarding and sport climbing into the realm of traditional sports can also be threatening to participants seeking out new sports. Similarly, the acceptance of a new sport by mainstream sport governing bodies such as the International Olympic Committee can become complicated and can even alienate some participants (Batuev & Robinson, 2017). In Korea, new sports have experienced increasing popularity in recent years. Participation has seen tremendous growth throughout the school system and many students are playing some of the aforementioned new sports such as tee-ball, tchoukball, sports stacking, kinball and floorball. Hwang (2014) reported that about 50 new sports are played in Korea in various settings including the school system and in sport clubs. The popularity of new sports in the school system is partially due to the fact that new sports are less constrained by space and rules which allows for more students to participate compared to other traditional sports. Physical activity is particularly important in Korea as a 2011 report from the Ministry of Education, Science, and Technology (MEST) highlighted the obesity levels of elementary (13.5%) and middle (12.7%) school students. Kwon, Pyun and Baeck (2020) cite that when schools hire their physical activities instructors there needs to be an understanding of the desires of students and these desires may include participation in new sports. Another facet of the growth in new sports in Korea is the organization and structure of a national organizing body, the Korean New Sports Association (KNA). Founded in 2006, the KNA has taken an active role in introducing new sports to the general public by training new sports leaders, organizing various tournaments, providing age-appropriate materials and forming partnerships with various international new sports governing bodies and sport organizations. While these activities have helped spread new sports in Korea, there is still a distinction between the motivations of traditional sport participants and new sport participants. Still, very little is known about the participation behavior of adolescents as it relates to new sports and there is a dearth of academic literature in this area of new sports and the factors that influence adolescent participation. Therefore, this study aimed to investigate the underlying factors of participation in new sports in a Korean school setting.

Theoretical Background

Theory of Planned Behavior Ajzen’s (1985, 1991) theory of planned behavior (TPB) is an extension of Fishbein and Ajzen’s (1975) theory of reasoned action (TRA), and both theoretical approaches attempt to explain volitional behaviors. According to Fishbein and Ajzen (1975), attitude is defined as the degree to which an individual’s favorable or unfavorable evaluation of a behavior and subjective norms were defined as the belief that people will approve or disapprove of the behavior. While TRA attempted to explain individual behavior only with attitude and subjective norm, TPB added the concept of ‘perceived control’ to increase the predictive power of TRA taking into account the factors like time, money, and opportunity that limit actual behavior (Ajzen, 1991). Perceived control refers to individual perception of the ease or difficulty of engaging in the behavior of interest (Ajzen, 1985, 1991), given that behavior cannot be completely voluntary and under control. Essentially, TPB explains that individual behavioral intention and actual behavior are guided by personal attitude, subjective norm, and perceived behavioral control (Ajzen, 1985, 1991). Ajzen and Madden (1986) later found that perceived control was shown to predict behavior directly as well as indirectly through participation intention (Ajzen & Madden, 1986). As TPB is more appropriate to understand complex human behavior than the TRA (Armitage & Conner, 2001), TPB has been widely used as a theoretical basis for predicting behavior in the social sciences (Cunningham & Kwon, 2003; Zint, 2002). By applying the theory of planned behavior to the context of this study, we attempted to explain the extent to which individual participation in a new sport was explained by three predictors: attitude, social norm, and perceived behavioral control. Based on this, five hypotheses were generated.

Hypothesis 1: Attitude will have a positive influence on participation intention.

Hypothesis 2: Subjective norm will have a positive influence on participation intention.

Hypothesis 3: Perceived behavioral control will have a positive participation intention.

Hypothesis 4: Perceived behavioral control will have a positive participation behavior.

Hypothesis 5: Participation intention will have a positive influence on participation behavior.

Attitude Formation Theory In consumer behavior, the role of attitude is critical since it provides important information about what matters to consumers as well as what drives consumers to choose a certain product or

service (Bravo et al., 2013). Ajzen (2001) defined attitude as “a summary evaluation of a psychological object captured in such attribute dimensions as good-bad, harmful-beneficial, pleasant-unpleasant, and likable-dislikable” (p. 28). In other words, attitudes are evaluations and dispositions individuals have toward an object. Argyriou and Melawar (2011) argued that understanding how attitudes are formed and act is critical since it sheds light for marketing managers to develop strategies to influence consumer preferences and tendencies to engage in a certain behavior.

According to Eagly and Chaiken (1993), researchers agree that attitude formation requires three components of cognitive, affective, and behavioral functions. The cognitive function in attitude formation involves obtaining specific information and having knowledge about the object of interest.

Knowledge. Prior knowledge is defined as the degree of familiarity or experience of information consumers have about a particular product (Duhan, Johnson, Wilcox, & Harrel, 1997). According to Johnson and Russo (1984), prior knowledge is a critical factor for consumers to make decisions. Similarly, Anderson (1982) argued that gaining knowledge about something has an impact on choices, and Lee et al. (2011) found that prior knowledge has a significant effect on attitudes and behavioral intentions. Thus, prior knowledge is likely to have a positive effect on attitude, which can possibly lead to participation (behavior) in sport. Many studies show evidence that sport knowledge can serve as a good predictor for sport consumption. Casper et al. (2010) found that soccer knowledge was the strongest predictor for interest in the World Cup. Bennett et al. (2007) also found that individuals with cricket knowledge are likely to watch cricket games on television. Applied to the context of this study, individuals with prior knowledge of new sports would be likely to have a favorable attitude, which further leadsto participation. Based on this, hypotheses 6 and 7 were generated.

Hypothesis 6: Prior knowledge will have a positive influence on attitude.

Hypothesis 7: Prior knowledge will have a positive influence on participation intention.

Methods

Instrument Development

The survey instrument was developed based on the literature in this area and in conjunction with the hypotheses under investigation. All constructs were modified to fit the context of the study and subjects (adolescents). The attitude scale (four items), subject norm scale (four items), and perceived behavior control scale (four items) were adopted from Ajzen (1991), Cunningham & Kwon (2003), and Baker, Al-Gahtani, & Hubona (2007). The scale of participation intention (four items) was adopted from Gefen and Strub(2000), Lam and Hsu (2004), and Norman and Conner(2005). For the participation behavior scale, the four items were adopted from Engel and Blackwell(1982) and Hagger et al. (2007). The scale of prior knowledge (four items) was adopted from Alba and Hutchinson(1987) and Blair and Innis (1996). Since the original scales were written in English, the scales were translated to Korean by a college professor whose native language was Korean. Then, the Korean version was translated back to English by a doctoral student who is fluent in both languages to ensure the accuracy of the translation. Lastly, another sport management faculty member, also fluent in both English and Korean verified the scaleand accuracy of the translation. All the items in the survey used a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

Participants and Procedure

In this study, middle school students who were participating in new sports were identified as the study subjects. The researcher contactedfour local middle schools in Seoul, Korea known to have students participating in new sports.Permission was granted to collect the data from the respective school boards. After that, those students who were participating in new sports completed the survey on a voluntary basis. Using the convenience sampling method, a total of 250 questionnaires were collected. After eliminating those missing information, the final sample consisted of 238 valid questionnaires.First, descriptive statistics were conducted to examine the demographic characteristics of the sample. Of the 238 participants, 54.6% ($n=130$) were male and 45.4% ($n = 108$) were female. In regards to new sport participation among the respondents, flying disc was most popular ($n=72$, 30.3%) followed by tee-ball ($n = 53$, 22.3%), free tennis ($n = 44$, 18.5%), floorball ($n = 37$, 15.5%) and other new sports ($n = 32$, 13.4%). In terms of the frequency of participation in new sports, ‘once per week’ was the most popular ($n = 104$, 43.7%) while other respondents were playing more often per week (2-3 times, 35.7%; more than four times, 20.6%). In terms of the participation experience with new sports, about two-thirds played a new sportbetween two to five years (see Table 1).

Table 1:Descriptive results

Characteristics	<i>n</i>	%	Characteristics	<i>n</i>	%
New sports			Frequency(per week)		
Teeball	53	22.3	Once	104	43.7
Floorball	37	15.5	2-3 times	85	35.7
Flyingdisc	72	30.3	More than 4 times	49	20.6
Freetennis	44	18.5	Duration(years)		
Other new sports	32	13.4	1 year or under	43	18.0
Gender			2-3	85	35.7
Male	130	54.6	4-5	72	30.3
Female	108	45.4	More than 6	38	16.0

Data Analysis Data were analyzed using SPSS version 25.0 and AMOS 22.0. Cronbach's alphas were conducted to verify the internal consistency of the constructs. In addition, correlation analysis was performed to see if there was a potential issue of multicollinearity. Lastly, using AMOS 22.0, confirmatory factor analysis was conducted to verify the goodness-of-fit of the measurement (validity) and path analysis were conducted to identify the relationship between the factors.

Results

Scale Reliability and Validity The goodness of fit of the model was assessed with chi-square to the degree of freedom ratio (χ^2/df), comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square error of approximation (RMSEA). The result of CFA, i.e., a measurement model, ($\chi^2(194) = 511.28$, $\chi^2/df = 1.78$, CFI = .92, TLI = .91, RMSEA = .08) indicated that the model fit was acceptable (Hair, Black, Babin, & Anderson, 2010). The convergent validity of the measures was evaluated by the average variance extracted (AVE), factor loading, and construct validity (CR) (Hair et al., 2010). Convergent validity tests the constructs that are expected to be related are actually related (Hair et al., 2010). In other words, if the convergence validity is not secured, it can indicate problems such as an inappropriate variable refinement problem in the confirmatory factor analysis, or inconsistency between the model set and the collected data (Hair et al., 2010). Thus, securing convergent validity is critical. In the process of confirmatory factor analysis, one item in the subjective norm (people around me would agree with my participation in new sports.) and one item (I am confident in playing new sports) in the perceived behavior control were low in the statistical measurement control (SMC) value. Therefore, the two items were deleted and not included in the data analysis. The results of the construct validity (CR) showed that the values were ranging from .85 to .96 passing the suggested value of .70 (Fornell & Larcker, 1981). The AVE values were between .66 and .87, which is higher than the suggested minimum value of .50 (Fornell & Larcker, 1981), suggesting that there is no problem. Finally, Cronbach's alpha coefficient ranged from .72 to .93, indicating that all measures met the suggested minimum level of .70 (Nunnally & Bernstein, 1994).

Lastly, Pearson correlation analyses were conducted to confirm the correlation and direction among factors. The correlation coefficients are shown in Table 2. All the correlation coefficients were smaller than the suggested maximum value of .80 (Fornell & Larcker, 1981), indicating that there is no issue of multicollinearity.

Table 2: Mean, SD, and Correlation matrix between constructs

	1	2	3	4	5	6
1. Attitude	-					
2. Subjective norm	.36**	-				
3. Perceived behavioral control	.32**	.41**	-			
4. Preliminary knowledge	.53**	.41**	.42**	-		
5. Participation Intention	.54**	.43**	.40**	.54**	-	
6. Participation behavior	.60**	.36**	.41**	.60**	.58**	-
Mean	3.86	3.99	4.16	4.14	4.34	4.02
SD	.66	.57	.50	.59	.41	.63

** $p < .01$

Hypotheses Testing The results showed that the structural model demonstrated an acceptable fit with $\chi^2(199) = 555.35$, $\chi^2/df = 2.80$, CFI = .91, TLI = .90, and RMSEA = .08 (Hair et al., 2010). As shown in Figure 1, hypotheses 1, 2 and 3 were supported, but hypothesis 4 was rejected with a slight margin ($\beta = .139$). Attitude had a positive effect on participating intention ($\beta = .34$, $t = 4.80$), subjective norm had a positive effect ($\beta = .14$, $t = 2.22$), perceived behavior control had a positive effect ($\beta = .17$, $t = 1.98$) but perceived behavior control had no significant influence on participating in behavior ($\beta = .139$, $t = 1.88$). Also, the results supported hypotheses 4 and 5. Prior knowledge has a positive effect on attitude ($\beta = .61$, $t = 8.68$) and participating intention ($\beta = .36$, $t = 3.74$). Lastly, participating in intention has a positive effect on participating in behavior ($\beta = .66$, $t = 7.55$).

Figure 1: Conceptual model and path coefficients (* $p < .05$; *** $p < .001$)

Discussion

The primary purpose of this study was to investigate adolescent participation intention and behavior applying TPB, including prior knowledge. Proposed by Ajzen (1985, 1991), TPB argues that attitude, subjective norm, and perceived behavioral control affect behavior, which was supported by the results of this study. Attitudes, subjective norms, and perceived behavioral control had a significant influence on respondent participation intention. The indication here is that if a respondent had a positive attitude toward a new sport (attitude), participation is then socially acceptable by his or her peer group and other people surrounding that individual (social norm). Additionally, the perceived ability to control other factors such as time and space availability (perceived behavioral control), then that individual is likely to engage with the activity. In other words, it was found that the adolescents participating in new sports are likely to have a positive attitude toward new sports, positive support from parents and friends, and a higher levels of perceived behavioral control over participating in new sports.

Having prior knowledge in new sports positively influenced ($\beta = .36$) adolescent participation intention. Proper level of knowledge in new sports was even more important ($\beta = .61$) for forming an attitude which further leads to participation intention ($\beta = .34$). This is evidence of the critical role of previous knowledge. Combined with direct influence ($\beta = .36$) and indirect influence via attitude ($\beta = .21$), the role of knowledge on participation intention was .57, which is greater than the subjective norm ($\beta = .14$) and perceived behavioral control ($\beta = .17$) combined. The result confirms that prior knowledge precedes attitude (Lee et al., 2011) while it also leads to behavior (e.g., Casper et al., 2010; Sierra et al. 2010). Acknowledging the importance of knowledge, different professional leagues have introduced various educational programs such as the National Football League's "Football 101" program which gives basics of American football including the fundamental terms, formations, rules, and officials' responsibilities ("Football 101", 2019). Similarly, the National Hockey League also promotes humorous, educational videos starring rapper Snoop Dogg called Hockey 101 with Snoop. These videos provide basic information on different facets of the game such as penalties, line changes, and other in-game rules ("Hockey 101 with Snoop", 2018).

Given the importance of knowledge in behavior and the novelty of new sports, the leagues or organizations representing various new sports should educate its potential consumers with the rules and related information, as to form a positive attitude, which has been shown to result in participation. The formation of the Korean Newsports Association (KNA) is certainly in a position to lead this educational effort and must invest resources in these marketing and grassroots activities.

If participating in a new sport is accepted by peers, an adolescent is more likely to participate in a new sport. Peer influence tends to be higher for adolescents compared to other groups, hence, the acceptance of their participation in a new sport by their friends is quite relevant for adolescents. Since it cannot be accepted nor acknowledged if a person does not know about it, the importance of knowledge cannot be ignored. In terms of the perceived control, schools and sport associations can positively influence participants' external perceived control by providing increased accessibility such as more programs and suitable facilities. However, perceived internal behavioral control, such as available time and ability, is an individual factor. While the influence of perceived behavioral control was not significant on participation behavior, its influence on participation intention was, however, significant ($\beta = .17$). In this study, participation intention was included which is in line with some scholarly criticism (e.g., Bagozzi, 1992; Perugini & Bagozzi, 2001) of the existence of a missing link between the three variables (attitude, subjective norm, perceived behavioral control) and behavior. By including the intention to behavior, this study adds to the previous notion that motivation is needed to induce action.

Limitations and Future Research

With any form of quantitative research there are various limitations to the study. The first limitation is that all the subjects were already participating in a new sport. While this made it possible to see the relative importance of the three components of TPB (attitude, subjective norm, and perceived behavioral control) on behavior, it limited observation on subjects' choice of behavior. A future study will not exclude the subjects who are not participating in new sports, which would provide more insight into TPB as it relates to behavioral choice. The second limitation is that the roles of different dimensions of a construct were not captured. For example, there are both internal and external behavioral perceived controls, while, between these two, external behavioral control (e.g., no space to play) might have played a bigger role in this study since the subjects are adolescents and they are bound to either the school setting and schedule or some other adult supervision. An additional, future study would provide a more detailed scale that could be used to capture the role of different dimensions on the desired behavior of select subjects.

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