

Article

The Relationships between Participation Motivation and Continuous Participation Intention: Mediating Effect of Sports Commitment among University Futsal Club Participants

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Abstract: Sports activities through university clubs are very important because university students need to have functional and emotional literacy through physical education classes. Therefore, the purpose of this study is to empirically verify the effect of participation motivation of university futsal club participants on sports commitment and continuous participation intention. To this end, 250 male college students who participated in a futsal club living in Seoul were used as a sample group, and a survey was conducted for about two weeks from 3 March to 18 March 2022. Of the 235 respondents, a final 221 were used for data analysis. The statistical processing of the data collected for this study was analyzed using the SPSS 26.0 program and the AMOS 26.0 program. The main results are as follows. First, participation motivation factors such as pleasure, technical development, and outward display significantly positively affected sports commitment. Second, sports commitment of university students significantly positively affected continuous participation intention. Third, among the participation motivation factors, technological development and condition factors directly and positively affected continuous participation intention, but pleasure and outward display factors did not directly affect continuous participation intention. The mediating effect of sports commitment was confirmed in the relationship between pleasure, technical development, and outward display, which are subfactors of participation motivation and continuous participation intention. As it was revealed that participation motivation and commitment to sports are important factors in the intention to continue to participate in sports, a physical education class program to increase such participation motivation and commitment is needed.



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Keywords: participation motivation; sports commitment; continuous participation intention; physical education; futsal club

1. Introduction

Health is one of the most important elements everyone seeks and wants to sustain regardless of their age. According to the World Health Organization (WHO), regular participation in physical activities is an important factor in leading a happy life as well as in promoting the health of modern people [1]. Sports for all has recently been recognized as a very meaningful form of leisure in that it not only provides opportunities to relieve the various kinds of stress modern people have living in industrialized and urbanized modern society through continuous physical activities but also plays the role of promoting mental and physical health and boosting the will to live, thereby improving the quality of life [2]. This is because sports for all can be an effective means to satisfy the high-dimensional self-actualization needs of modern people as well as the basic and social needs of humans in a desirable direction [3,4].

In particular, college students, who are at a point in time when the physical activities they participated in while in middle and high school are converted into sports for all, should be equipped with functional and emotional literacy through college physical education classes. Therefore, universities should more actively encourage college students' sports

activities [5]. Aside from school classes, club activities are where college students actively engage in physical activities. Each university's sports clubs can be said to be places of gathering where students can voluntarily form general sports events such as soccer, basketball, and futsal, or leisure sports events such as mountain climbing and tennis and various pleasure sports [6]. With such sports activities, college students learn and internalize basic principles such as etiquette and cooperation, thereby developing values such as mutual cooperation with others, responsibility, autonomy, achievement, activity, and sociability [7]. Therefore, such sports activities are very important in college life.

Recently, various sports clubs have been established as part of sports for all, and college students are participating in many sports clubs to pursue pleasure and happiness [8]. When participating in a sports club, motives play an important role in sustaining exercise. Motives are an important variable in promoting participation because individuals' internal experience and continuous effort vary according to their motive for participating in sports clubs [9]. The motive for participation is the decisive reason to participate in an activity, and it not only acts as an important element in sports participation but also has a positive effect on the commitment experience [10]. Since motives for participation appear differently depending on an individual's inner life or the social situations in which individuals are placed, they are divided into inner, external, and no motives. In sports, motives that occur because of pure pleasure and fun without receiving any extrinsic reward are called inner motives. External motives can be analyzed from a multidimensional perspective [11] and are divided into external regulation, introjected regulation, and identified regulation. Lastly, no motive is composed multidimensionally and can be organized into "lack of ability," "strategy insufficiency," "effort avoidance," and "lethargic belief" [12].

Commitment is a factor that explains why people continue to engage in an activity or remain involved with it [13]. Therefore, commitment is one's feeling of mind-body unity or being controlled when they are completely absorbed in a certain thing [14], and the phenomenon can be experienced not only in sports but also in daily life in various activities. Sports commitment can be viewed as an important psychological state in which the optimal experiences accumulated while participating in sports are integrated [15], and many studies have reported that motives for participation in sports positively affect sports commitment [16]. Kang et al. (2020) [17] emphasized that psychological factors such as commitment to sports are very influential variables that predict sports continuity and that it is important to satisfy these psychological factors and maintain motivation to continue regular exercise.

Sport continuation is the degree to which an individual participates in a certain sport to exercise regularly, and because it enables the experience of health and physical strength, stress relief and pleasure, leisure satisfaction, life satisfaction, and self-actualization, it is much different from simple participation in sports in terms of importance [18]. There are reports that those who continuously participate in actual sports have high levels of positive emotions [19], and this is in the same context as the concepts of reparticipation and intention to continuously participate and word-of-mouth intention to transmit participation in sports to others [20].

Recently, futsal has been activated in the form of indoor soccer on the basis of sports for all. Therefore, examining the motives for participation in futsal clubs that affect commitment will be meaningful in terms of the activation of futsal in sports for all. In addition, given that commitment is a factor that explains whether participants are continuously engaged in a certain activity and stay in the relationship [13], it can be inferred that commitment in futsal sports is a key antecedent of continuous participation intention. However, existing studies that examined motives for participation in sports, commitment, and continuous participation intention were limited to popular sports events such as marine sports [21] and swimming [22], and the subjects of surveys were also selected focusing on special classes, such as the elderly. Therefore, by investigating the influence of relationships between motives for participation in clubs, commitment, and sustainable participation intention with college students belonging to the futsal club, this study is intended to form a

desirable leisure culture for college students and present a direction for the activation and popularization of futsal clubs in universities.

In order for the futsal sport and club activities, which many Korean college students are interested in, to not end only as a short period of fashion, it is necessary to identify the factors that can motivate college students' sustainable participation in the futsal sport. In general, sports immersion can be cited as a factor that can sustain exercise participation, so this is a very meaningful study to grasp the relationship between sports commitment and sustainable participation in the futsal sport in the process of participating in futsal activities of Korean college students. In order to increase the sustainable participation intention of participants in the futsal sport, the level of experience in the futsal sport should be higher rather than determined by external environmental factors, and the higher the motivation to participate in the futsal sport, the higher the intention to participate. Therefore, there is a need for measures to increase the motivation of college students participating in the futsal sport and increase their sports commitment. Through this study, it is judged that futsal club operators should actively use the process of increasing the intention of college students to participate in the futsal sport, and it is expected that this study will be used as data for expanding and revitalizing futsal.

2. Literature Review

2.1. Participation Motivation

Motivation drives action. Motivation is taking action in order to do something, explaining why we want to act in a particular way, and influencing the direction and extent of the action [23]. In sports participation, intrinsic motivation plays an important role in encouraging active and active participation of participants [24]. Therefore, sports participation motivation provides important information to explain sports behavior theory and understand participants. In previous studies, participation motive has been reported as an antecedent variable that directly affects the intention to participate continuously, and leisure use, health orientation, and stress relief have been identified as major participation motive factors [25,26]. Diehl et al. (2018) [25] confirmed that participation motivation in sports not only provokes a response of human desire but also is an antecedent factor influencing the exercise continuation behavior to think and select the most effective behavior. Additionally, Vallerand (2001) [27] reveals that sports participants reparticipate due to their motivation and that it is a factor that makes them continue to participate. Based on these results, it can be seen that the action that causes the participant's continuous behavior is made by the participation motive.

2.2. Sports Commitment

Sports commitment can be defined as a state of being deeply immersed in something when engaging in a specific activity due to an individual's intrinsic motivation [14]. Tinsley and Tinsley (1986) [28] argued that immersive sports experiences can satisfy a variety of needs that cannot be met in other areas of life. In addition, Omodei and Wearing (1990) [29] stated that an individual's commitment to sports is a very influential medium that determines the intensity of sports participation and has a close influence on sports satisfaction. As such, sports commitment acts as an important motive for the continuation of sports participation and can be a key motivating factor for predicting the possibility of continued participation in the future.

2.3. Continuous Participation Intention

Continuous participation intention means that participants who have experience in sports activities express their intention to continue participating in the future [30]. In the continuous participation intention, the intention means the individual's will to do the planned future action, and if the will is strong, the participant's own beliefs and attitudes are more likely to lead to the intended behavior [20]. Therefore, the intention of continuous participation is different from general participation, and the intention of

continuous participation is greatly influenced by an individual's intrinsic motivation. However, it can also be influenced by external factors such as society and the environment and can influence continued participation in sports [20].

3. Method

3.1. Subject

In this study, male college students who participated in the futsal club living in Seoul were targeted. From 3 March to 18 March 2022, a survey was conducted on 250 people for about two weeks, of which 235 were recovered. A total of 221 copies were used for the final analysis, excluding 14 copies with unfaithful responses. In the case of the survey, an online questionnaire created with Google Docs was used and distributed through e-mail, SNS, SMS, etc. In the survey stage, the researcher offered sufficient explanation and asked for consent from the survey subjects, and then asked them to fill out the questionnaire using the self-report method. The demographic characteristics of college students belonging to the futsal club surveyed in this study are presented in Table 1. The highest number of participants came from the fourth grade, with 17 (7.7%) in the first grade, 46 (20.8%) in the second grade, 66 (29.9%) in the third grade, and 92 (41.6%) in the fourth grade. The most common futsal movement experience was 128 people (57.9%) in less than one year, followed by 46 people (20.8%) in less than one to three years, 29 people (13.1%) in more than five years, and 18 people (8.1%) in less than three to five years. The average number of participants in the futsal movement per month was 144 (65.2%), followed by 50 (22.6%) in 3–5 sessions, 23 (10.4%) in 6–9 sessions, and 4 (1.8%) in 10 or more sessions. On average, 98 participants (44.3%) participated in the futsal movement for less than 1–2 h, followed by 90 (40.7%) for less than 1 h, 25 (11.3%) for less than 2–3 h, and 8 (3.6%) for more than 3 h.

Table 1. Demographic characteristics of the subjects.

Variable			N	%
School year	1st grade		17	7.7
School year	2nd grade		46	20.8
School year	3rd grade		66	29.9
School year	4th grade		92	41.6
Futsal career	Less than 1 year		128	57.9
Futsal career	1–3 years		46	20.8
Futsal career	3–5 years		18	8.1
Futsal career	More than 5 years		29	13.1
Number of Futsal Exercise Participants (One month)	1–2 times		144	65.2
Number of Futsal Exercise Participants (One month)	3–5 times		50	22.6
Number of Futsal Exercise Participants (One month)	6–9 times		23	10.4
Number of Futsal Exercise Participants (One month)	More than 10 times		4	1.8
Time to participate in the futsal exercise (Once)	Less than 1 h		90	40.7
Time to participate in the futsal exercise (Once)	1–2 h		98	44.3
Time to participate in the futsal exercise (Once)	2–3 h		25	11.3
Time to participate in the futsal exercise (Once)	More than 3 h		8	3.6
Total			221	100.0

3.2. Research Model and Hypotheses

The following hypotheses were derived based on previous studies and the research model presented above (see Figure 1).

H1. Participation motivation will have a positive (+) effect on sports commitment.

H1.1. Pleasure will have a positive (+) effect on sports commitment.

H1.2. Technological development will have a positive (+) effect on sports commitment.

H1.3. Condition will have a positive (+) effect on sports commitment.

H1.4. Outward display will have a positive (+) effect on sports commitment.

H2. Sports commitment will have a positive (+) effect on continuous participation intention.

H3. Participation motivation will have a positive (+) effect on continuous participation intention.

H3.1. Pleasure will have a positive (+) effect on continuous participation intention.

H3.2. Technological development will have a positive (+) effect on continuous participation intention.

H3.3. Condition will have a positive (+) effect on continuous participation intention.

H3.4. Outward display will have a positive (+) effect on continuous participation intention.

H4. There will be a mediating effect of sports commitment in the relationship between participation motivation and continuous participation intention.

H4.1. There will be a mediating effect of sports commitment in the relationship between pleasure and continuous participation intention.

H4.2. There will be a mediating effect of sports commitment in the relationship between technological development and continuous participation intention.

H4.3. There will be a mediating effect of sports commitment in the relationship between condition and continuous participation intention.

H4.4. There will be a mediating effect of sports commitment in the relationship between outward display and continuous participation intention.

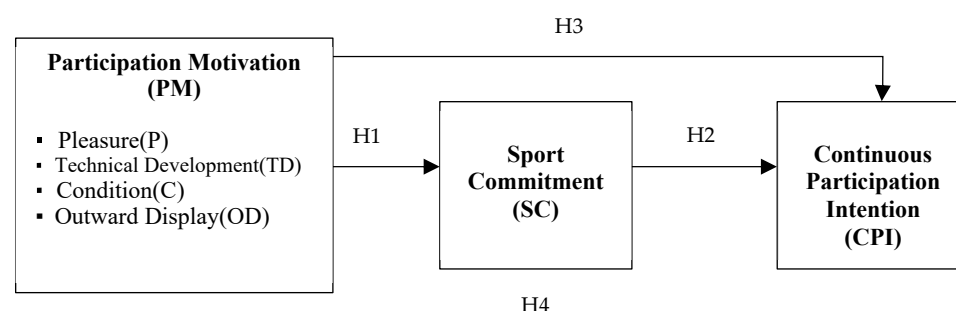


Figure 1. Research model.

3.3. Measure

(a) Participation Motivation

In order to measure the participation motivation in futsal in daily sports, a questionnaire was constructed based on the SMS-28 (Sports Motivation Scale) developed by Vallerand (1992) [12] and the LIM (Leisure Intrinsic Motivation) of Wessinger and Bandalos (1995) [31]. It consisted of four subfactors (pleasure, technological development, condition, and outward display), and was measured with a total of 18 questions. All questions were measured on the Likert 5-point scale.

(b) Sports Commitment

In order to measure sports commitment, the questionnaires were organized based on Scanlan et al. (1993) [32] and Han et al. (2015) [33]. It was measured with a total of 7 questions. All questions were measured on the Likert 5-point scale.

(c) Continuous Participation Intention

In order to measure continuous participation intention, the questions used in the study on the relationship between college students' exercise needs and liberal arts sports satisfaction and exercise doctors were modified [34] and used according to this study. It consisted of a total of three questions, and all questions were measured on a Likert 5-point scale.

3.4. Data Analysis

The statistical processing of the data collected for this study was analyzed using the SPSS 26.0 program (IBM, Chicago, IL, USA) and the AMOS 26.0 program. First, the frequency and percentage were calculated to find out the distribution of college students participating in the Korean Futsal Club. Second, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were performed to verify the validity and reliability of the measurement variables of participation motivation, sports commitment, and continuous participation of college students participating in the Korean Futsal Club, and the Cronbach's α coefficient was calculated. Third, a structural equation model analysis (SEM) was conducted to verify the causal relationship between the research variables, and the bootstrapping method was used to verify the mediating effect of sports commitment. The significance level of statistical analysis and hypothesis verification was based on 0.05.

4. Results

4.1. Verification of Validity and Reliability

In this study, exploratory factor analysis was conducted to verify the validity of the measurement items constituting research variables such as sports participation motivation, sports commitment, and continuous participation intention of college students participating in the futsal club, and the factor rotation was made using a varimax method. Prior to factor analysis, the technical statistics of the measurement items were calculated, and the normal distribution was reviewed by reviewing skewness and kurtosis, and the absolute values of skewness and kurtosis of all measurement items were 2 or less, so there was no problem with normality. Table 2 shows the results of exploratory factor analysis and reliability analysis on the measurement items constituting the research variables. As a result of factor analysis, three questions (one question for pleasure, technological development, and condition each) and two questions for sports commitment were removed, showing a low factor load of less than 0.50 or a high load of more than two factors. The Kaiser-Meyer-Olkin (KMO) measure for exploratory factor analysis was estimated to be 0.920. Bartlett's sphericity test, which verifies whether there is a unit matrix for the correlation matrix between measurement items, results approximated $\chi^2 = 55.4319$ ($df = 253$, $p < 0.001$). It was found to be significant, so the collected data and measurement items were suitable for factor analysis. As a result of factor analysis, four factors, including pleasure, technology development, condition, and outward display, and six factors, including sports commitment and continuous participation intention, were extracted, and 85.576% of the total variance was explained. Next, as a result of the reliability verification showing the internal consistency of the measurement items constituting the research variables, Cronbach's α value was 0.935 for pleasure, 0.925 for technology development, 0.904 for condition, 0.927 for outward display, 0.945 for sports commitment, and continuous participation intention was 0.963, respectively. Accordingly, research variables were composed of internally consistent items to secure reliability.

Table 2. Exploratory factor analysis (EFA) and reliability analysis.

Item	SC	OD	Factor Loading		CPI	TD	Cronbach's α
			P	C			
Futsal is more fun than other sports (PM 1)	0.394	0.114	0.706	0.200	0.169	0.289	0.935
I like the pleasure of playing futsal (PM 2)	0.282	0.138	0.818	0.242	0.163	0.215	0.935
If you play futsal, you can feel energetic (PM 3)	0.150	0.089	0.777	0.299	0.199	0.228	0.935
There's a sense of pleasure when playing futsal (PM 4)	0.246	0.177	0.791	0.317	0.195	0.127	0.935
Because it's good to learn futsal skills that you've never experienced before (PM 6)	0.348	0.212	0.343	0.207	0.264	0.674	0.925
It's fun to learn difficult skills when playing futsal (PM 7)	0.405	0.205	0.281	0.162	0.140	0.740	0.925
It's fun to feel that futsal skills are gradually developing (MP 9)	0.166	0.280	0.270	0.137	0.252	0.795	0.925
Futsal improves your stamina (PM 10)	−0.160	0.122	0.230	0.781	0.064	0.284	0.904
Because of the freshness you feel after playing futsal (PM 11)	0.278	0.066	0.244	0.804	0.198	0.028	0.904
If you play futsal, your condition gets better. (PM 12)	0.307	0.232	0.147	0.793	0.209	0.036	0.904
My body feels refreshed after sweating (PM 13)	0.166	0.034	0.256	0.860	0.180	0.106	0.904
If you're good at futsal, you can get attention from others (PM 15)	0.235	0.798	0.108	0.163	0.128	−0.019	0.927
I want to show off my futsal skills to others (PM 16)	0.212	0.885	0.100	0.045	0.050	0.166	0.927
It's a good opportunity to get to know myself through futsal (PM 17)	0.173	0.869	0.122	0.131	0.137	0.160	0.927
Because you can gain fame or fame as a futsal (PM 18)	0.180	0.867	0.080	0.052	0.074	0.227	0.927
I am attached to futsal sports (SC 1)	0.725	0.323	0.324	0.089	0.218	0.146	0.945
I'm looking forward to the futsal exercise time (SC3)	0.777	0.180	0.233	0.173	0.231	0.259	0.945
Futsal exercise is very important to my life (SC 4)	0.794	0.294	0.186	0.156	0.175	0.274	0.945
It's fun to think about futsal exercise (SC 5)	0.717	0.187	0.332	0.158	0.315	0.229	0.945
I tend to plan the schedule by considering futsal exercise time first (SC 7)	0.811	0.254	0.142	0.127	0.218	0.052	0.945
There is a possibility of continuing futsal exercise (CPI 1)	0.270	0.134	0.146	0.226	0.867	0.144	0.963
Want to continue futsal exercise (CPI 2)	0.252	0.102	0.193	0.206	0.879	0.187	0.963
I intend to continue to participate in the futsal movement as much as I can (CPI3)	0.271	0.158	0.253	0.174	0.829	0.174	0.963
Eigen Value	4.159	3.616	3.356	3.278	2.938	2.336	
Variance(%)	18.082	15.720	14.592	14.252	12.774	10.156	-
Total Variance(%)	18.082	33.802	48.393	62.646	75.420	85.576	
KMO(Kaiser-Meyer-Olkin) = 0.920							
Bartlett's Sphericity: Approximated $\chi^2 = 5534.319(df = 253, p = 0.000)$							

Participation motivation (PM); pleasure (P); technical development (TD); condition (C); outward display (OD); sports commitment (SC); continuous participation intention (CPI).

A confirmatory factor analysis was conducted to verify the concentrated validity and discriminant validity of research variables such as participation motivation in daily sports (pleasure, technology development, condition, and outward display), sports commitment, and continuous participation intention. First, in order to evaluate the fit of the measurement model, it is important to select an appropriate fit index that is not sensitive to the size of the sample and considers the simplicity of the model [35]. In this study, the fitness index of the measurement model was verified by estimating χ^2 statistical value, SRMR (Standardized Root Mean Square Residual), TLI (Tucker Lewis Index), CFI (Comparative Fit Index), and RMSEA (Root Mean Square Error or Approximation). TLI and CFI are regarded as good goodness-of-fit if they are 0.90 or higher, and SRMR is regarded as good goodness-of-fit if

it is 0.08 or lower [36]. In the case of RMSEA, where the confidence interval is presented, it is evaluated as excellent suitability if it is less than 0.05, good suitability if it is less than 0.08, and normal suitability if it is less than 0.10 [37]. As shown in Table 3, the fit of the measurement model is as follows: $\chi^2 = 620.202$ ($df = 215$, $p = 0.000$), SRMR = 0.053, TLI = 0.913, CFI = 0.926, RMSEA (90% CI) = 0.083 (0.074~0.091). So, they showed relatively good fit. The factor load of potential variables such as participation motivation, sports commitment, and continuous participation intention was statistically significant ($p < 0.001$), and theoretically unsuitable negative error variance (Heywood case) did not appear, so the measurement model was analyzed to be suitable for the data.

Table 3. Confirmatory factor analysis (CFA).

Variable				Nonstandardized Factor Loading	Standard Error	Standardized Factor Loading	Variance of Error	<i>t</i>	Construct Reliability (CR)	Average Variance Extracted (AVE)
PM	P	→	PM 1	1.000	-	0.862	0.264	-	0.939	0.794
		→	PM 2	1.112	0.055	0.938	0.129	200.296 ***		
		→	PM 3	0.902	0.055	0.841	0.256	160.436 ***		
		→	PM 4	1.005	0.053	0.906	0.168	180.940 ***		
	TD	→	PM 6	1.000	-	0.929	0.170	-	0.909	0.770
		→	PM 7	0.987	0.044	0.911	0.213	220.270 ***		
		→	PM 9	0.905	0.048	0.849	0.340	180.797 ***		
		→	PM 10	1.000	-	0.714	0.437	-		
	C	→	PM 11	1.068	0.086	0.867	0.171	120.467 ***	0.922	0.748
		→	PM 12	1.190	0.096	0.864	0.219	120.419 ***		
		→	PM 13	1.309	0.099	0.923	0.136	130.175 ***		
		→	PM 15	1.000	-	0.770	0.628	-		
	OD	→	PM 16	1.231	0.080	0.925	0.235	150.291 ***	0.893	0.676
		→	PM 17	1.130	0.077	0.892	0.299	140.651 ***		
		→	PM 18	1.202	0.081	0.902	0.302	140.848 ***		
		→	SC 1	1.000	-	0.876	0.303	-		
SC		→	SC 3	1.107	0.057	0.896	0.302	19.359 ***	0.922	0.704
		→	SC 4	1.110	0.054	0.921	0.222	20.587 ***		
		→	SC 5	1.014	0.052	0.902	0.237	19.635 ***		
		→	SC 7	1.104	0.068	0.824	0.578	16.357 ***		
CPI		→	CPI 1	1.000	-	0.947	0.109	-	0.968	0.909
		→	CPI 2	1.011	0.028	0.986	0.029	36.332 ***		
		→	CPI 3	0.857	0.032	0.916	0.134	26.444 ***		

$\chi^2 = 620.202$ ($df = 215$, $p = 0.000$), SRMR = 0.053, TLI = 0.913, CFI = 0.926, RMSEA (90% CI) = 0.083 (0.074~0.091)

*** $p < 0.001$.

In order to examine the concentration validity of latent variables, conceptual reliability (CR) and average variance extracted (AVE) were reviewed. Concentrated validity refers to the degree of correlation between two or more measurement items for a potential variable, and in general, if the conceptual reliability is 0.70 or higher and the average variance extraction value is 0.50, it is considered to be concentrated validity. For the conceptual reliability shown in Table 3, pleasure (0.939) and technological development (0.909), condition were all higher than 0.90. The variables such as (0.922) participation motivation and outward display (0.893), sports commitment (0.922), and continuous participation intention (0.968) were all high at 0.80 or higher, and the average variance extraction values for pleasure, technical development, and condition were 0.794, 0.770, and 0.748, respectively. The variables such as participation motivation (0.748), sports commitment (0.704), and intention to continue participation (0.909) were all found to be 0.60 or higher, confirming intensive validity.

Finally, looking at the discriminant validity between latent variables, discriminant validity means how different one latent variable is from the other, and the most conservative evaluation method considers it discriminant validity if the average variance extraction value of each of the latent variables is greater than the square value of the correlation coefficient. As a result of confirming the discriminant validity through the comparison of the square of the correlation coefficient and the average variance extraction value of the latent variables shown in Table 4, the square value (0.534) of the latent variables with the highest correlation was found. Looking at the correlation between the research variables, there was a significant positive correlation between the variables of pleasure, technological devel-

opment, condition, outward display, sports commitment, and continuous participation, showing a direction consistent with the research hypothesis.

Table 4. Correlations between the research variables.

Variable	Participation Motivation				Sports Commitment	CPI Sustainable Participation Intention
	Pleasure	Technical Development	Condition	Outward Display		
Pleasure	0.794					
Technical Development	0.731 (0.534)	0.770				
Condition	0.646 (0.417)	0.513 (0.263)	0.748			
Outward Display	0.399 (0.159)	0.534 (0.285)	0.311 (0.097)	0.676		
Sports Commitment	0.691 (0.477)	0.739 (0.546)	0.516 (0.266)	0.574 (0.329)	0.704	
CPI	0.551 (0.304)	0.592 (0.350)	0.527 (0.278)	0.338 (0.114)	0.625 (0.391)	0.909
Mean	3.90	3.64	4.12	3.09	3.36	3.69
Standard Deviation	0.91	1.04	0.81	1.13	1.10	0.95

() = square of correlation coefficient. The values on diagonal line mean AVE.

4.2. Verification of Research Hypotheses

Structural equation model (SEM) analysis was conducted to examine the structural causal relationship between research variables such as pleasure, technological development, condition, external ostentation, sports commitment, and continuous participation intention, and the parameter estimation method showed no problem in the normality of the measurement variables. First, looking at the fitness of the research model presented in Table 5, $22 = 620.202$ ($df = 215$, $p = 0.000$), SRMR = 0.053, TLI = 913, CFI = 926, RMSEA (90% CI) = 0.083 (0.074~0.091) showed relatively good suitability, so it was analyzed that there was no difficulty in accepting the research results.

Table 5. Fitness of the research model.

χ^2	df	p	SRMR	TLI	CFI	RMSEA (90% CI)
620.202	215	0.000	0.053	0.913	0.926	0.083 (0.074~0.091)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (standardized path coefficient).

The results of the verification of the research hypothesis are shown in Figure 2 and Table 6.

Table 6. Research hypothesis verification results.

Path				Nonstandardized Coefficient	Standard Error	Standardized Coefficient	<i>T</i> (C.R)	<i>p</i>	A/R
PM	P	→	SC	0.319	0.095	0.278	3.359	0.000	Adopted
	TD	→	SC	0.358	0.078	0.369	4.598	0.000	Adopted
	C	→	SC	0.105	0.094	0.071	1.120	0.263	Rejected
	OD	→	SC	0.255	0.060	0.243	4.229	0.000	Adopted
	SC	→	CPI	0.363	0.092	0.372	3.963	0.000	Adopted
PM	P	→	CPI	−0.004	0.109	−0.004	−0.036	0.971	Rejected
	TD	→	CPI	0.223	0.092	0.236	2.418	0.016	Adopted
	C	→	CPI	0.345	0.108	0.239	3.211	0.001	Adopted
	OD	→	CPI	−0.076	0.069	−0.074	−1.099	0.272	Rejected

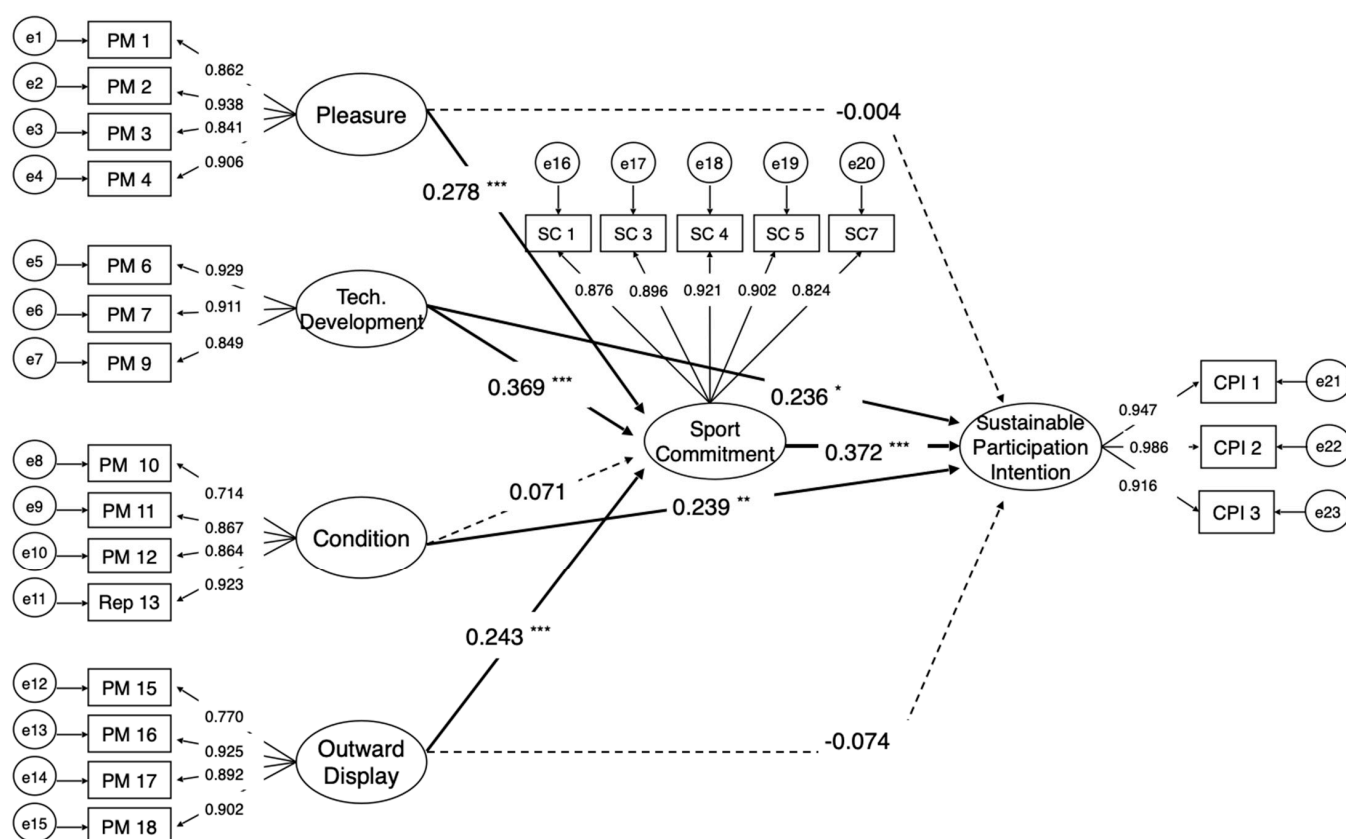


Figure 2. Verification of research model. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

First, looking at the verification results of Research Hypothesis 1, among the factors of participation motivation, pleasure (standardized path coefficient = 0.278, $t = 3.359$, $p < 0.001$), technological development (standardized path coefficient = 0.369, $t = 4.598$, $p < 0.001$), and outward display (standardized path coefficient = 0.243, $t = 4.229$, $p < 0.001$) factors had significant positive effects on sports commitment, but the condition factor did not have a significant effect on sports commitment; so, it was predicted that sports commitment increased alongside pleasure, technological development, and outward display during futsal exercise. Therefore, Research Hypotheses 1.1, 1.2, and 1.4 were adopted, and 1.3 was rejected.

As a result of the verification of Research Hypothesis 2, sports commitment has a significant positive effect on the continuous participation intention (standardized path coefficient = 0.372, $t = 3.963$, $p < 0.001$), and it was predicted that the higher the commitment in the futsal movement, the higher the intention to continue participation. Research Hypothesis 2 was, therefore, adopted.

As a result of the verification of Research Hypothesis 3, among the factors of participation motivation, the technology development (standardized path coefficient = 0.236, $t = 2.418$, $p < 0.001$) and condition (standardized path coefficient = 0.239, $t = 3.211$, $p < 0.01$) factors had direct positive effects on continuous participation intention, but pleasure and outward display factors did not have direct significant effects on continuous participation intention, indicating that the higher participation motivation is in futsal exercise and technology development. Therefore, Research Hypotheses 3.2 and 3.3 were adopted, but 3.1 and 3.4 were rejected.

Finally, in order to verify Research Hypothesis 4, bootstrapping was performed on the indirect effect of the path between participation motivation and continuous participation intention. Bootstrapping is a method of estimating the distribution of parameters based on sample data without knowing the distribution of the population and determines that it is

significant at level 0.05 when zero is not included in the 95% confidence interval (CI). The verification results of the mediating effect are shown in Table 7.

Table 7. Verification of mediation effect of sports commitment.

Path					Indirect Effect (Bootstrapping)			95% CI	A/R
					Nonstandardized Coefficient	Standard Error	Standardized Coefficient		
P	→	SC	→	CPI	0.115	0.103	(0.013~0.287)	0.021	Adopted
TD	→	SC	→	CPI	0.130	0.137	(0.038~0.286)	0.002	Adopted
C	→	SC	→	CPI	0.038	0.026	(−0.042~0.148)	0.307	Rejected
OD	→	SC	→	CPI	0.092	0.087	(0.023~0.207)	0.001	Adopted

Bootstrapping sampling (N = 3000).

As a result of verifying the mediating effect of sports commitment in the relationship between the participation motivation and continuous participation intention of futsal sports, among the factors of participation motivation, pleasure → sports commitment → continuous participation intention (95% CI: 0.013~0.287, $p < 0.05$), technological development → sports commitment → continuous participation intention (95% CI: 0.038~0.286, $p < 0.01$), and outward display → sports commitment → continuous participation intention (95% CI: 0.023~0.207, $p < 0.01$) were found to be significant, and the mediating effect was significant. However, it was found that the indirect effect of condition → sports commitment → continuous participation intention was not significant. Therefore, Research Hypotheses 4.1, 4.2, and 4.4 were adopted, but 4.3 was rejected.

Summing up the above results, it was found that among the factors of participation motivation in sports for the futsal club, the factors of pleasure and outward display did not directly affect the continuous participation intention, but only through the mediation of sports commitment. Therefore, there was a significant fully mediating effect. It was found that the factor of technological development not only has a direct positive effect on the continuous participation intention but also has an effect through the mediation of sports commitment. Therefore, there was a significant partially mediating effect. In the case of the condition factor, it was found that the mediating effect of sports commitment was not significant, although it had a direct positive effect on continuous participation intention.

5. Discussion

This study aims to empirically verify the effect of college students' participation motivation on sports commitment and continuous participation intention.

First, the effect of college students' participation motivation in futsal clubs on sports commitment was verified. As a result, it was found that among the factors of participation motivation, pleasure, technological development, and outward display had a significant positive effect on sports commitment, and the condition factor did not have a meaningful effect. Therefore, it was predicted that sports commitment increases as college students have higher participation motivations in the pleasure, technological development, and outward display of futsal exercise. These results mean that college students become immersed in the futsal clubs when they participate for pleasure, improvement of skills, and outward display. Noh (2011) [38] empirically analyzed the effect of the participation motivation of participants in sports on sports commitment and found that the higher the participation motivation, the more positive the cognitive commitment and behavioral commitment. Jung (2010) [39] studied the relationship between participation motivation and sports commitment of soccer club participants and reported that the higher their participation motivation was, the higher their sports commitment was. These previous studies support the results of this study, which suggested that participation motivation in futsal clubs has a positive effect on sports commitment.

It was confirmed in this study that the effect of college students' participation motivation in futsal clubs has a positive effect on sports commitment as well as an internal

motivation among participation motivations. This shows that college students who participate in futsal with high internal motivation consider technology development and pleasure to be their best values and participate in futsal sports clubs with high external motivation. This participation motivation is thought to be good for college students immersed in sports activities while building confidence and self-identity.

Second, the effect of college students' commitment to the sport of futsal on their intention to continue participation was verified. It was found that futsal sports commitment had a significant positive effect on continuous participation intention. Therefore, it was predicted that the higher the futsal sports commitment, the higher the continuous participation intention. These results mean that in order to increase the intention to continue participating in futsal, sports commitment must precede. Being immersed in an activity can be interpreted as having the intention to continue to participate. In other words, it can be judged as having the willingness to continuously participate. In this context, Shin (2011) [40] analyzed the relationship between commitment to golf exercise and the intention to continue participation and argued that commitment to golfing increases the user's intention to continue participation. In addition, Baek (2010) [41] investigated the effect of the commitment experience of leisure sports participants on the intention to continue exercise through empirical analysis and reported that their commitment experience had a positive effect on the intention to continue. Therefore, previous studies on the relationship between sports commitment and continuous participation intention support the results of this study, which suggested a positive effect of sports commitment on continuous participation intention. In Korea, college students often do futsal exercises, but after a few exercises, they give up and stop. Daily sports are helpful for physical and mental health when performed continuously, and it is difficult to expect this effect if you lose interest and stop. Therefore, it can be confirmed through this study that continuous participation intention in exercise is very important, and that commitment to futsal exercise is essential for this.

Third, the effect of college students' participation motivation in the sport of futsal on their intention to continue participation was verified. It was found that among the factors of participation motivation, technology development and condition factors had a direct positive effect on continuous participation intention, but pleasure and outward display factors did not have a direct meaningful effect. Therefore, it was predicted that the higher the pleasure of the futsal movement and participation motivation in the development of technology, the higher the intention to continue participation. These results mean that college students will continue to participate in the futsal movement when they do so to improve their futsal skills and manage their conditions.

Park (2012) [11] studied the effect of soccer club participation motivation on leisure satisfaction and exercise continuity and supported the results of this study by reporting that among various factors of participation motivation, pleasure and external motivation had an effect on exercise continuity. A study by Lee (2010) [42] on the relationship between sports commitment and exercise intention according to the participation motivation of liberal arts ski/snowboard participants also showed that participation motivation had a positive effect on exercise persistence intention, a tendency consistent with the results of this study. Technological development is the acquisition of difficult skills through activities of the futsal club in daily sports, and condition is a factor related to an individual's mood and health. Judging from these results, it can be seen that in order to continuously maintain participation in a sports soccer club, participants must acquire new and difficult skills through activities and be in good physical condition. In other words, in order for futsal club participants to have a continuous willingness to participate, they should make efforts to improve their skills with futsal exercise and maintain a healthy body and condition with appropriate health care and exercise.

Fourth, the mediating effect of sports commitment was verified in the relationship between college students' participation motivation in the sport of futsal and their intention to continue participation. As a result, among the motivational factors for college students

to participate in futsal, pleasure, technological development, and external motivation were found to have a positive effect on continuous participation intention through sports commitment. In this study, it was possible to confirm how important a factor is for continuous participation in sports activities. The fact that commitment is an important factor in continuous participation intention in sports activities means that participants should be given an opportunity to commit. However, commitment is not something that others help, but something that sports participants try to fall into by themselves. For daily sports, it is necessary to create an environment in which participants can experience commitment.

Among the various sports for all, futsal is one that people of all ages can participate in. Jeong et al. (2020) [43] said that participation in futsal has led to positive phenomena that can lead to good physical care and relieve stress in daily life and maintain or induce a good mood just by thinking about playing futsal. Participants in sports for all can improve their depression, mental, and physical condition through continuous exercise. In addition, the interest and participation of club members in futsal becomes a habit, and not only are they attracted, but they also develop a sense of duty and often become immersed. Modern people recognize the importance of physical activity, but they often fail to put it into practice. As confirmed earlier, college students can expect a positive effect physically and mentally by continuous participation in futsal. In particular, it greatly helps with physical self-efficacy, which is the ability to relieve stress and perform physically. Therefore, it is considered that active and voluntary futsal activities are necessary for the fundamental management of the mental health of college students, who invest a lot of time in learning.

Taken together, the results of this study show that futsal participants immerse themselves in futsal and continue exercising through motivation to pursue specific and practical results such as technological development and pleasure. On the other hand, it can be seen that exercise commitment itself affects exercise duration. Since exercise commitment occurs from participation motivation and serves as a means of mediating participation motivation and continuity, futsal motivation, commitment, and intention to continue futsal are in a relationship caused by time priorities. Looking at this relationship, it can be seen that the motivations of futsal participants are most important in activating participation in futsal club activities. As mentioned earlier, the results show that the motivations of pleasure and external display have a positive effect on futsal continuity intention, indicating that an exercise continuity effect occurs when there is a specific and practical will of futsal participants to pursue pleasure and show off to others. Therefore, the development of a futsal club activity program that constantly provides motivational factors for college students participating in futsal is an important task for the continuation of exercise.

6. Conclusions

Based on the empirical analysis results of this study, it was confirmed that participation motivations such as pleasure, technological development, and outward display in futsal clubs had an effect on sports commitment, and motivations such as technological development and condition had a positive effect on continuous participation intention. In order for participants of futsal clubs to engage in the sport and continue to participate, it would be better to respect and maintain the level of motivation rather than look negatively at members who value technological development and outward display. For members who value pleasure and condition, efforts should be made to maintain the pleasure factor and create the best conditions with regular exercise by eliminating conflict factors within the group and allowing them to experience success. Since this participation motivation has been shown to affect sports commitment and continuous participation intention, it is necessary to experience sports commitment in futsal clubs by maintaining participation motivation in a positive direction. In particular, since the development of internal motivation and the condition of external motivation were major factors affecting the intention to continue participation, it is necessary to allow members of futsal clubs to experience technology improvement through exercise and competition and maintain physical health to

control condition factors. In addition, since sports commitment also has a positive effect on the intention to continue participation, based on commitment theory, participants should divide roles appropriately in consideration of positions suitable for individual skills and activities appropriate for physical strength.

Regarding the limitations, discussions, and conclusions derived from this study, the following is suggested for research tasks to be performed. First, since this study sampled the participants of futsal clubs limited to Seoul, there may be limitations in generalizing the results to the entire region of Korea. Therefore, in a follow-up study, it is necessary to conduct a survey in various regions in addition to Seoul. Second, for the intention of continuous participation in the futsal club in daily sports, research is needed to find various factors in addition to participation motivation. Third, since this study was conducted on college students, there is a limit to its expansion and interpretation to all futsal clubs in Korea. Therefore, research is needed that includes adult men, adolescents, and women's futsal clubs by diversifying targets such as youth who are potential sports soccer club participants as well as college students.

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