

# An Empirical Study of Participation Motivation on College Students' Sports Participation Behavior

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## Abstract

The sports participation motivation has an important influence on the sports participation behavior of college students. The paper adopts the empirical research method of questionnaire survey, based on 1480 samples from more than a dozen colleges and universities, through statistical analysis, to explore the influence of sports participation motivation on college students' sports participation behavior. The study found that: there is a significant correlation between the participation motivation and college students' sports participation behavior. The research conclusion has important theoretical significance for stimulating the college students' sports participation motivation by various methods and guiding them to be active in the sports participation.

## Keywords

Sports Participation, Sports Participation Motivation, Sports Participation Behavior

## 1. Introduction

Motivation is the internal driving force that drives people to behave (Ma, 1996). At present, many studies have shown that motivation has an important effect on the behavior (Li, 2017). The study on the college students' sports participation behavior from the perspective of sports participation motivation will be the key point to solving the problem of college students' physical quality. The key topic of physical education is what is the current situation of college students' sports participation motivation and how to guide their sports participation. Only through empirical research to understand the real thoughts of college students, can targeted strategies and suggestions be given, and the right method can be used to

improve their sports participation. Therefore, it provides theoretical support and operational strategies to improve the college students' sports participation behavior and improve the physical quality of college students.

## 2. Research Hypotheses

We found from the literature that the participation motivation is mainly divided into autonomy needs, relationship needs and competency needs, and college students' sports participation behaviors are different with the different participation motivation. Therefore, the following hypotheses are proposed:

H1: There are differences in the participation motivation of college students' sports participation behavior.

### 1) Autonomy needs

Wang Yanjing (2018) found that the satisfaction of independent demand is related to the satisfaction of sense of choice through three levels of independent demand experiments. Facing different conditions of independent demand, their motivation and task performance are different. Jiang & Cai (2018) found that cognitive interest is the most important motivational factor for participation under unconstrained conditions. American scholar Dincer et al. (2019) found that the transformation of students' autonomous needs to actual initiative investment is closely related to external factors such as teacher support, learning materials, task design, classroom structure and so on. At the meanwhile, these external factors have more effects on the psychological needs satisfaction and self-determination motivation, which also contribute to the improvement of the learning environment. Ma Ziyuan's (2021) study found that teachers' autonomous needs and basic psychological needs have significant differences between different demographic variables, and autonomous needs have a significant positive predictive effect on teachers' autonomous motivation. In the experiments measuring students' perception of teachers' needs support in physical education and structural equation modeling with the Likert 7-level scale method, Huang Xia and Hu Xiaoqing (2022) found that the needs support from the teachers is positively correlated with the satisfaction of students' basic psychological needs, internal motivation and participation intention in physical activities outside school. Based on the conclusions of the literature, this paper proposes the following hypotheses: H1a: There are differences in the sports participation behavior of college students with different autonomy needs.

### 2) Relationship needs

Davies et al. (2018) found that individuals with a strong affiliative motive have a higher response to the relational needs satisfaction than individuals with a low affiliative motive. Kim et al. (2019) found that when the relationship between external challenges and personal inner abilities in athletes is balanced or above average performance, they will be fully engaged and impressed afterwards with a full of the best sports experience and psychological state. Xu Na et al. (2022) found that relational needs satisfaction has a positive effect on sports flow.

Based on the conclusions of the literature, this paper proposes the following

hypotheses:

H1b: There are differences in the sports participation behavior of college students with different relationship needs.

### 3) Competency needs

Maslow pointed out in the book *Motivation and Personality* that people are born with some positive impulses, such as the need to know, and people always try to analyze and understand the world, gain self-growth through learning, and then gain basic needs such as a sense of security and belonging. Yuan et al. (2021) constructed a competence model based on competence needs and found that the identification of competence characteristics through competence needs can promote the analysis of relevant training needs, which is beneficial to human resource management. Hou Jianjun et al. (2021) found that the identification of competence needs effectively improves the ability of designers under the background of artificial intelligence, and realizes the complementarity of human and machine capabilities.

Based on the conclusions of the literature, this paper proposes the following hypotheses:

H1c: There are differences in the sports participation behavior of college students with different competency needs.

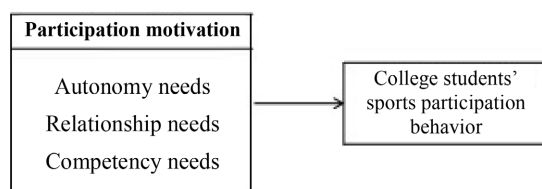
According to the above research hypothesis and literature review, the relationship model between the participation motivation and college students' sports participation behavior is given, as shown in Figure 1.

## 3. Research Method

This paper mainly adopted literature research method, questionnaire method and field interview method for research. All items in the questionnaire are based on the actual characteristics of college sports participation behavior, combined with the results of previous empirical research and the classic theoretical literature in the academic circle. All the questionnaires were measured using the Likert seven-scale scale.

### 1) Pre-test

The pre-test adopts the method of purposive sampling. The author conducted a survey in Chengdu in July 2021, and used the test-retest reliability to test the reliability of the questionnaire. In the first test, a total of 101 questionnaires were distributed, 85 were returned, and 71 were valid. Questionnaires were distributed on site, collected on site, and then all questionnaires were numbered. In



**Figure 1.** The relationship model between the participation motivation and college students' sports participation behavior.

this study, test-retest reliability and Cronbach's reliability were used to test the pre-test reliability, and content validity test and construct validity test were used to test the validity. The items that did not meet the standard were eliminated, and then the expression of the items and their arrangement order were adjusted, and finally a formal questionnaire was formed.

#### 2) Formal test

The formal survey was launched from September 2021 to December 2021 for a period of 4 months. In order to ensure the scientificity and generalizability of the research results, the distribution of the samples is to select universities in different regions of China as much as possible to reflect the national situation as much as possible. Therefore, we conducted a sampling survey on universities in Sichuan, Shanxi and other places.

#### 3) The general situation of the sample

The sampling of the questionnaires was based on purposive sampling (judgment sampling). A total of 1763 questionnaires were distributed and returned.

In terms of gender, the female has the largest sample size, accounting for 63.24% of the total sample size; and the male accounts for 36.76%.

In terms of family background, the rural area has the largest sample size, accounting for 47.59%; then the city accounts for 35.62%; and the town accounts for 16.79%.

In terms of major, there are 1077 college students in engineering, agriculture and medicine, accounting for 61.09% of the sample size; followed by 353 college students in economics, management, law and politics, accounting for 20.02%. And the college students in literature, history, philosophy and art and other majors account for 9.47% and 9.42% respectively.

In terms of grade, the sophomore is the most, accounting for 51.5%, followed by the junior, accounting for 25.07%, while the freshman, the fourth and fifth grade account for 17.64% and 4.76% and 1.02% respectively.

The personal basic attributes of the samples conformed to the mother's characteristics and were representative. After excluding invalid questionnaires, 1480 valid questionnaires were finally obtained, with an effective rate of 84%. The Cronbach's value of the formal questionnaire is greater than 0.9, which indicates that the formal questionnaire has a very good reliability. At the same time, we have conducted content validity and construct validity tests to ensure the scientificity of the formal questionnaire.

## 4. Research Analysis and Research Findings

The regression analysis method is used to study the relationship between college students' sports participation motivation and sports participation behavior. In the multiple regression analysis, linear relationship, independence of error terms, normal distribution and no multicollinearity must be satisfied. In this study, the residual scatter plot was used to observe the linear relationship, the probability accumulation plot and residual histogram of the standardized residuals were used

to judge whether it was a normal distribution, and the VIF was used to test the multicollinearity.

When performing multiple regression analysis, if there is a multicollinearity problem, it not only reflects that the independent variables may have a conceptual confounding relationship, but also affects the estimation of the explanatory power of each independent variable for the dependent variable. To ensure the explanatory power of variables, this study will diagnose the multicollinearity problem to ensure the scientificity and accuracy of the study. The Variance Inflation Factor (VIF) method is the most suitable method for diagnosing multicollinearity, which was used for diagnosis in this study. It is generally believed that when  $VIF \geq 10$ , the independent variable has a very serious multicollinearity problem and cannot be accepted. It is generally considered that VIF is acceptable between 1 - 5, and close to 1 is the best.

The linear relationship between the two variables can be observed from the residual scatter plot in **Table 1** and **Figure 2**, and from **Figure 3** and **Figure 4**, it can be judged that it has a normal distribution. It can be judged that there is no multicollinearity by  $VIF = 1$ . By Durbin-Watson = 0.460, it can be judged that the residual is very independent from the independent variable. All the conditions for multiple linear regression analysis are satisfied.

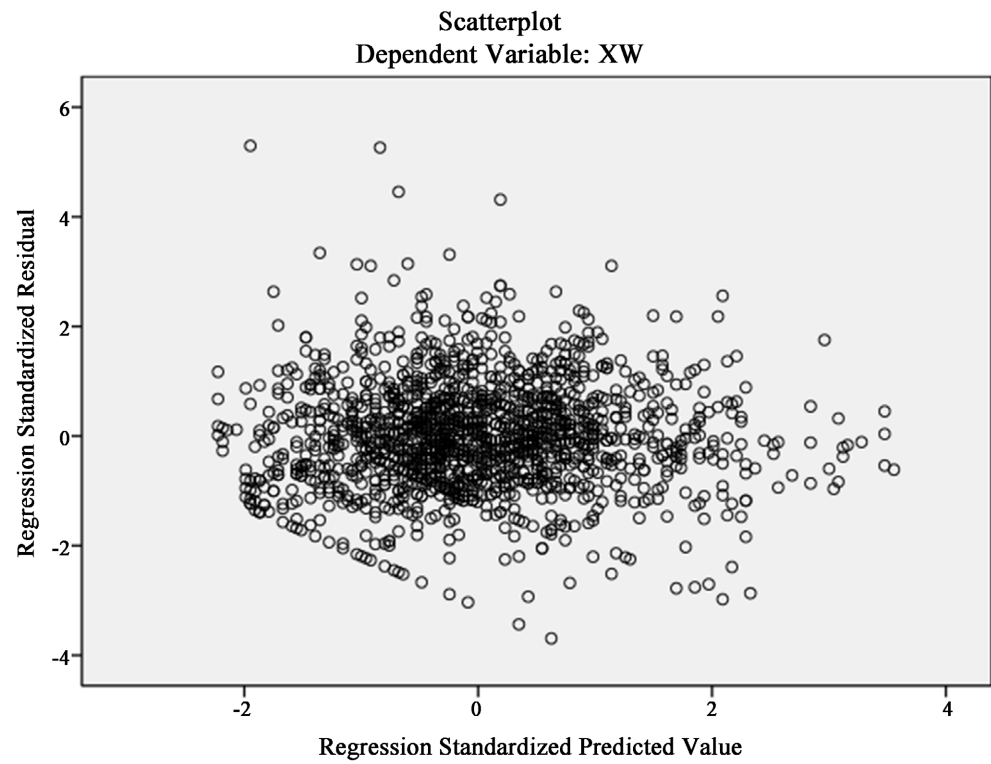
From the regression analysis of participation motivation on college students' sports participation behavior in **Table 1**, we can observe that the regression equation shows the total variation is 35.515% and its regression F value is 1261.329 (0.000\*\*\*), which indicates that the overall regression model reaches a significant level. Standardized regression coefficients show that participation motivation has a positive effect on participation behavior. The hypothesis H1 that the participation motivation has a significant positive effect on college students' sports participation behavior is tested and established.

From the regression analysis of autonomy needs on college students' sports participation behavior in **Table 2**, we can observe that the F value of the regression is 42.483 (0.000\*\*\*), which indicates that the overall regression model has reached a significant level. Standardized regression coefficients show that autonomy needs

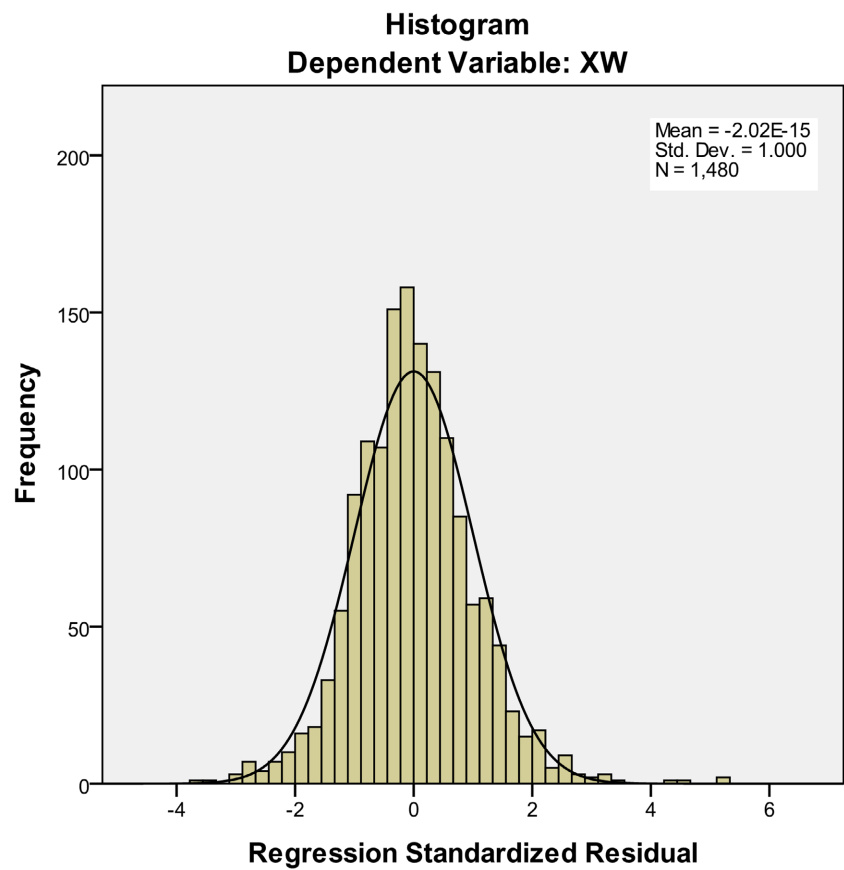
**Table 1.** Regression analysis of participation motivation and college students' sports participation behavior.

	Unstandardized regression coefficient		Standardized regression coefficient	T value	Sig	Collinearity diagnosis	
	B	Standard error	$\beta$	-	-	Tolerance	VIF
Constant term	0.807	0.053		15.128	0.000		1.000
Participation motivation	0.750	0.021	0.679	35.515	0.000	1.000	1.000
R <sup>2</sup>				0.460			
F value (P value)				1261.329 (0.000***)			
Durbin-Watson				0.460			

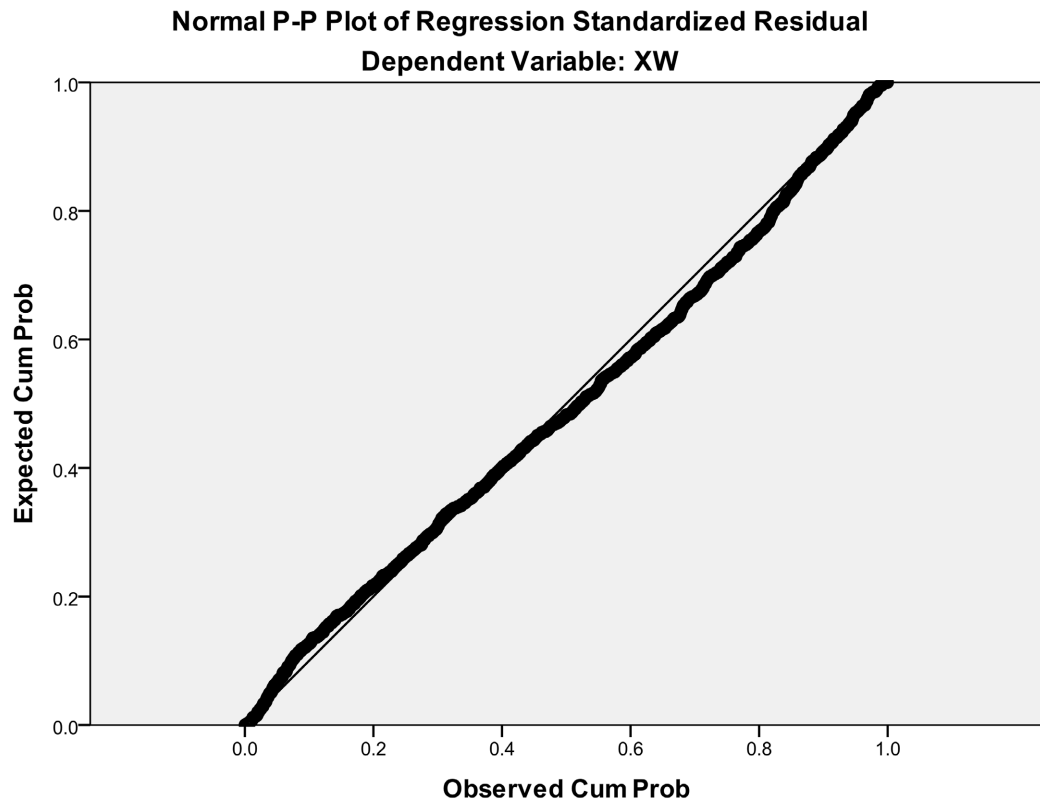
\*Indicates  $p < 0.1$ ; \*\*Indicates  $p < 0.05$ ; \*\*\*Indicates  $p < 0.01$ .



**Figure 2.** Residual scatter plot.



**Figure 3.** Residual histogram.



**Figure 4.** Probability accumulation plot of standardized residual.

**Table 2.** Regression analysis of autonomy needs and college students' sports participation behavior.

	Unstandardized regression coefficient		Standardized regression coefficient	T value	Sig	Collinearity diagnosis	
	B	Standard error	$\beta$	-	-	Tolerance	VIF
Constant term	1.961	0.041		48.490	0.000		1.000
Participation motivation	0.259	0.014	0.679	18.282	0.000	1.000	1.000
R <sup>2</sup>				0.575			
F value (P value)				42.483 (0.000***)			

\*Indicates  $p < 0.1$ ; \*\*Indicates  $p < 0.05$ ; \*\*\*Indicates  $p < 0.01$ .

**Table 3.** Regression analysis of relationship needs and college students' sports participation behavior.

	Unstandardized regression coefficient		Standardized regression coefficient	T value	Sig	Collinearity diagnosis	
	B	Standard error	$\beta$	-	-	Tolerance	VIF
Constant term	1.810	0.038		48.117	0.000		1.000
Participation motivation	0.340	0.014	0.679	24.234	0.000	1.000	1.000
R <sup>2</sup>				0.533			
F value (P value)				587.290 (0.000***)			

\*Indicates  $p < 0.1$ ; \*\*Indicates  $p < 0.05$ ; \*\*\*Indicates  $p < 0.01$ .

have a positive effect on participation behavior. The hypothesis H1a that there are differences in the sports participation behavior of college students with different autonomy needs is tested and established.

From the regression analysis of relationship needs on college students' sports participation behavior in **Table 3**, we can observe that the F value of the regression is 587.290 (0.000\*\*\*), which indicates that the overall regression model has reached a significant level. Standardized regression coefficients show that relationship needs have a positive effect on participation behavior. The hypothesis H1b that there are differences in the sports participation behavior of college students with different relationship needs is tested and established.

From the regression analysis of competency needs on college students' sports participation behavior in **Table 4**, we can observe that the F value of the regression is 637.136 (0.000\*\*\*), which indicates that the overall regression model has reached a significant level. Standardized regression coefficients show that competency needs have a positive effect on participation behavior. The hypothesis H1c that there are differences in the sports participation behavior of college students with different competency needs is tested and established.

## 5. Conclusions and Recommendations

From the above research, we can conclude that: Participation motivation has a significant positive effect on the college students' sports participation behavior. There are differences in the sports participation behavior of college students with different autonomous needs. There are differences in the sports participation behavior of college students with different relational needs. Thus, the college students' sports participation motivation will have an effect on their sports participation behavior, so the college students' sports participation motivation should be stimulated and the sports participation behavior should be standardized. The combination of classroom sports participation and extracurricular sports participation can stimulate the college students' sports participation motivation and further improve their awareness of sports participation.

First of all, classroom sports participation is the best way to enhance the college students' awareness of sports participation. In classroom teaching, in addition to

**Table 4.** Regression analysis of competency needs and college students' sports participation behavior.

	Unstandardized regression coefficient		Standardized regression coefficient	T value	Sig	Collinearity diagnosis	
	B	Standard error	$\beta$	-	-	Tolerance	VIF
Constant term	1.788	0.037		48.158	0.000		1.000
Participation motivation	0.354	0.014	0.679	25.242	0.000	1.000	1.000
R <sup>2</sup>				0.301			
F value (P value)				637.136 (0.000***)			

\*Indicates  $p < 0.1$ ; \*\*Indicates  $p < 0.05$ ; \*\*\*Indicates  $p < 0.01$ .



technical teaching, teachers should focus on cultivating students' cognitive ability, so that students can truly understand the meaning and function of physical exercise, as well as the related sports knowledge. At the same time, teachers should use various channels to instill the benefits of physical exercise to students, stimulate students' interest in physical education classes, guide college students to choose their favorite sporting events and sports and leisure methods to experience the fun of physical exercise, and enhance college students' self-exercise awareness to have a healthy body. In physical education, traditional physical education is introduced into the classroom through new media. For example, pre-recorded demonstration actions will be commented on through the new media platform, error-prone links can be demonstrated, and the movements practiced by the students can even be recorded by the video for mutual evaluation. In this way, the cross-use of physical education teaching methods shows diversity, especially in the indoor theoretical classes, teachers can bring the recent sports events to the class, adopt rich teaching methods, and guide college students to participate in physical exercise.

Secondly, college students' extracurricular sports participation needs to have a certain organization, which is not only a way to improve the college students' sports enthusiasm, but also a method that can form a way for students to supervise and help each other during sports. There are various associations and organizations during the university, and sports association is one of them. The formation of sports associations is not intentional by teachers, but is an amateur group formed by college students who are interested in sports through spontaneous behavior. The form of sports associations is not fixed, which also meets the diverse needs of college students to a certain extent. Sports associations create a relaxed and pleasant atmosphere for students to exercise with the richness of activities, the diversity of forms, the flexibility of organization and the autonomy of students. Sports associations have gradually become an important form of extracurricular sports activities for college students. Standardizing sports associations can broaden the channels for college students to participate in sports, and allow college students to take physical exercise in a pleasant sports atmosphere.

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## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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