

## Prediction of participation in physical activity through the perceived environment and its components among university students

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### Abstract

The aim of this study was to predict of participation in physical activity through the perceived environment and its components among university students. Research method was correlation that was collected through field method. The population of the study was students of Islamic Azad University, Science and Research Branch of Tehran. The sample was consisted of 349 students who were randomly selected. Collection data were conducted through personal information questionnaires, participating in physical activity, perceived environment. Cronbach's alpha coefficients of physical activity, perceived environment were reported 0.83 and 0.84, respectively. The results showed a positive and significant relationship between perceived environment with physical activity participation ( $r=0.62$ ,  $P\leq 0.01$ ). Results indicates regression analysis that perceived environment have the ability to predict physical activity and multivariate regression analysis showed that physical environment and social environment had ability to predict physical activity ( $\beta=0.48$ , 0.29). Thus, appropriate measures to enhance the understanding of the environment will cause increased participation in physical activities.

**Key words:** perceived environment, physical environment, social environment, Physical activity participation

### Introduction

In the present era, physical activity and sport as a multi-dimensional tool with widespread effects reflects its place and role in spending safe and enjoyable leisure time. Its effect on economy, health, education, social relations, prevention of many social evils and increasing sinuosity in the society is clearly understood (Hamidi, 1996).

In the meantime, students' physical activity has special status in leisure time of university students. This will be achieved only through developing and regulating applicable programs to make students active in their leisure time. Considering sports and physical activities at universities as one of the methods to spend leisure time can be very constructive and has positive results. Physical activity should be done in an environment that the place of physical activity in terms of environmental factors is in a proper state. Enough and proper spaces with suitable quality, availability, safety and standard are among the environmental factors that must be considered by related authorities. It seems that sport spaces and facilities on campus and next to faculties can be an effective factor to do physical exercises in leisure time. Moreover, considering organizing and careful planning of physical education and sport in universities reveals the necessity of attention to this feature. Meanwhile, notifying and informing students about sport facilities and their programs play an important role in their participation.

Physical activity is an important factor in maintaining and improving physical and mental health and plays an important role in improving quality of life. For this reason, the participation of young people in physical

activity has special role in promoting health level. Nowadays, researches show that many factors are involved in determining the level of physical activity and participation in it.

In many researches, perceived environment has been introduced as environmental and effective variable on physical activity. It has been noted that physical activity during leisure time is more affected by availability and characteristics of public, private and recreational facilities (Kan et al, 2002); (Mota et al, 2005); (Salis et al, 2009); (Serano & Sanchez et al, 2012). In different studies which have been done on the perception of the users of sport and recreational facilities and their effects on physical activity, it was indicated that different levels of physical activity are affected by various features of environment (Giles- Corti et al, 2005); (Chor et al, 2010). Improving environmental state, health facilities and quantity and quality of green space in environment has been resulted in improved levels of participation in physical activity (Tayebi Shani, 2012). In another research, it is noted to factors such as environment, its features and transportation system which generally referred as perceived environment and provide opportunities to achieve the goals and more tendencies to physical exercises (Heath et al, 2006). In some researches, it was noted that environment is one of the most effective factors on participation in sport and physical exercises; so, there is a complicated relationship between personal and environmental variables (Farahmandian, 2006) & (Sue et al, 2014). Standard and attractive sport facilities and spaces will not only respond participants' positive needs but also supply mental and physical health and more importantly spending leisure time by involving in sport and physical exercises (Mozafari, 2014). At the other hand, it has been indicated in a research that unlike researchers' expectation, the safety of environment and space doesn't have direct effect on participation in physical exercises and there is also indirect relationship between the perceived environment and participation in physical exercises ( Motel et al, 2007) & (Hei et al, 2013).

To review and identify the factors affected participation in physical exercises and at the other hand, leaving sport and physical exercises are of high importance. One of the main goals of campus sport managers and authorities is to provide suitable and essential conditions to increase the level of student participation in physical exercises esp. in leisure time.

To create the necessary conditions to increase student participation, environment should be designed which has adequate and safe facilities attractiveness and variety for activities. To apply these factors, it is required to identify effective environmental factors to physical activity participation which can be considered as effective and efficient factors.

### Materials and Methods

This study was applied research based on the purpose and was correlation based on data classification and was retrospective data based on the time classification that was collected through field method. Subjects were 349 students (197 girls and 152 boys with an average age of  $22.14 \pm 3.25$  years) from the population of Islamic Azad University, Science and Research Branch of Tehran students and researchers in the academic year of 2014 to 2015.

Instruments measurements were questionnaire of personal information, participation in physical activity at leisure-time, perceived environment in both physical environment and social environment dimensions. The validity of these questionnaires has been confirmed in numerous studies. Cronbach's alpha coefficient of physical activity and perceived environment were reported 0.83 and 0.84, respectively.

The descriptive statistics, Kolmogorov-Smirnov test were used to describe data and to study normality of data, respectively. Also, Pearson's correlation was used to test the hypothesis of research. Data analysis was performed using SPSS software. Also in this study, a significant level was selected as  $\alpha = 0.05$  for statistical hypothesis test.

### Results

General findings of present research showed that 56.4% of participants were girls and the rest were boys that 90.5% and 9.5% were single and married, respectively.

**Table 1: Frequency distribution of age**

Variable	Frequency	Minimum	Maximum	Mean	Standard deviation
Age					
Girl	197	18	35	22.28	3.62
Boy	152	18	34	21.95	2.68
Total	349	18	35	22.14	3.25

Results of Table 1 showed that the students were with an average age of  $22.14 \pm 3.25$  years.

**Table 2: Results of Kolmogorov-Smirnov test for normal distribution of data**

Index	Mean	Standard deviation	Z	P
Physical activity	2.04	0.44	0.03	0.10
Perceived environment	2.01	0.80	0.07	0.12

Results of Table 2 showed that the distribution of physical activity variable (P=0.10), Perceived environment (P=0.12) were normal.

**Table 3: The results of correlation coefficient for the relationship between perceived environment with physical activity**

Variables	R correlation coefficient	Determination coefficient R <sup>2</sup>	Sig.
Perceived environment with physical activity	0.62	0.38	0.001
Physical environment with physical activity	0.55	0.30	0.001
Social environment with physical activity	0.41	0.17	0.001

According to Table 3, there was significant relationship between Perceived environment with physical activity, as well (P≤0.01, r=0.62). The variance subscription rate of two mentioned variables was equal to 45%. There was significant relationship between Physical environment and physical activity (P ≤0.01, r=0.55) and between Social environment and physical activity (P≤0.01, r=0.41).

**Table 4: Linear regression coefficients**

	Non-standardized coefficients		Standardized coefficients	T	P
	B	Std.Error	β		
Fixed amount	0.414	0.10		4.01	0.001
Perceived environment	0.362	0.03	0.62	14.71	0.001

Results of Table 4 indicates regression analysis that perceived environment (P ≤ 0.01, t =14.71) have the ability to predict physical activity. Based on the results of the beta coefficient, physical activity participation increases (0.62) for a unit increase in Perceived environment.

**Table 5: Linear regression coefficients**

	Non-standardized coefficients		Standardized coefficients	T	P
	B	Std.Erorr	β		
Fixed amount	0.44	0.12		3.68	0.001
Physical environment	0.18	0.02	0.48	10.91	0.001
Social environment	0.17	0.03	0.29	6.62	0.001

Results of Table 5 indicates Regression analysis that physical environment (P ≤ 0.01, t =10.91) and social environment (P ≤ 0.01, t=6.62) have the ability to predict physical activity. Based on the results of the beta coefficient, physical activity participation increases (0.48) and (0.29), respectively for a unit increase in Physical environment and Social environment.

### Discussion and Conclusion

The results showed that there is a significant relationship between perceived environment and participation in physical activity. The variance subscription rate equals to 38%. There is also a significant relationship

between the components of perceived environment (physical environment and social environment) and participation in physical activity. The variance subscription rate between two noted variances is equal to 30% and 17%, respectively. It indicates that as there is more perception of the environment in general and the perception of the physical environment and the social environment, physical activity is increased and totally, 45% of changes in physical exercises are affected by the perceived environment.

The results showed the perceived environment is able to anticipate participation in physical activity. Due to the beta coefficient results, for per unit of increase in the perceived environment, 0.62 of participation in physical activity would increase. Moreover, the components of the perceived environment are able to anticipate participation in physical activity. For per unit of increase in physical environment and social environment, 0.48 and 0.29 of participation in physical activity would increase. These findings indicate that physical environment and social environment can anticipate participation in physical activity due to above mentioned coefficients.

These were in consistent with those findings of Kan et al (2002); Mota et al (2005); Giles & Corti et al (2005); Heath et al (2006); Salis et al (2009), Chor et al (2010), Tayebi Sani (2014), Sue et al (2014) and Serano-Sanchez et al (2012) and Farahmandian (2006). Following the obtained results, most researchers considered environmental factors and availability of sport facilities as a prerequisite to do physical exercises which must be considered important. These findings are also in contrast with Motel et al (2004) and Hei et al (2013). In the study of Motels et al (2004), they reported that this result was unexpected in which there was no significant relationship between factors of environmental safety and physical activity; however, there was significant relationship between factors of facilities and physical activity. The differences among the latter researchers with Hei et al results may be related to subjects' features.

Many factors may affect participation in physical activities that can be noted to environmental factors. Among this, people perception of the environment is one of the key factors which can play an effective role in participation in physical activity in that environment which is university recreational and sport facilities in the present research. Given that the sport per capita in universities doesn't correspond to the number of students and as the number of female students is more than male students and female students do not take advantage of outdoor spaces; so, the per capita of indoor spaces for each student is lower than that of outdoors (Porkiani, 2014). So, sports administrators and managers should provide proper environmental conditions whether physical or social environment and at the same time try to attract and inform the students effectively and properly.

Suitable space is among effective factors on students' regular participation in the training program of physical activity and exercises. Real access to sport spaces will always increase the possibility to select the individuals and make them interested to do exercises. In the recent years, it has been studied a variety of public spaces to be used in exercises if they are suitable (Vaez Mosavi & Mosayebi, 2013). As the results showed more perception both of the physical environment and social environment, an increase in physical activity to show; So, appropriate measures to enhance the understanding of the environment will cause increased participation in physical activities.

Given that there was significant relationship between perceived environment and participation in physical activity; so, it must be provided measures to increase students' awareness and perception of the environment to increase participation in physical activities. To do so, students' awareness and perception can be increased using various effective notifications such as university website, poster, email and volunteers.

Providing equipped hall and pool of university campus, experienced coaches, more facilities with comprehensive and evaluated programs and suitable tools can lead to improve participation in physical activity. To develop and promote physical environment, using available facilities and environmental potentials of university, it is proposed to design health walking road and/or even cycling track in campus.

It is also proposed to provide a comprehensive plan on advantages of participating in physical exercises, introducing facilities, usages and relevant programs for new students' referrals day.

#### **Conflict of interest**

The authors declare no conflict of interest

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