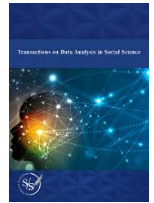




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The Effect of Sports Infrastructure and Demographic Characteristics on Female Sports Participation in Yazd City

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ARTICLE INFO	ABSTRACT
<p>Article History: Received 16 January 2019 Received in revised form 4 March 2019 Accepted 21 May 2019 Available online 2 June 2019</p>	<p>The present study aimed to investigate the impact of sports infrastructure and demographic characteristics on the level of sports participation among women in Yazd County. The research method, in terms of purpose, was applied, and in terms of approach, it was descriptive-survey. The statistical population consisted of all women residing in Yazd County who use sports facilities. Based on Cochran's formula, the sample size was determined to be 181 individuals, and the data were collected through a simple random sampling method. To examine the research hypotheses, a questionnaire comprising demographic information, a checklist of sports infrastructure, and Gill's (1983) Sports Participation Scale was employed. The content validity and reliability of the questionnaires were confirmed using Cronbach's alpha, and data analysis was performed using SPSS software. In the descriptive statistics section, tables and charts were used to present the characteristics of the statistical sample. In the inferential statistics section, parametric tests including Pearson's correlation, regression analysis, and analysis of variance (ANOVA) were applied to test the hypotheses. The findings indicated that sports infrastructure has a significant effect on women's sports participation in Yazd County. Furthermore, demographic factors such as age and educational level were found to significantly influence the level of women's participation in sports activities in Yazd County.</p>
<p>Keywords: Sports Infrastructure, Demographic Characteristics, Participation, Sports and Recreational Activities.</p>	

1. INTRODUCTION

The continuous advancement of modern technologies and civilization has brought about a phenomenon known as sedentary lifestyle. Beyond the current situation, addressing the need for appropriate tools, including sports activities, as a multidimensional tool with extensive health, economic, and social benefits, contributes to healthy leisure time and the creation of vitality and well-being [1]. Sports activities can compensate for the low mobility of daily life during leisure time and are one of the most suitable and perhaps necessary forms of leisure in the present era [2]. Various research results indicate that the social function of sports and individuals' participation in the

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development and strengthening of social relationships is a fundamental and infrastructural function that significantly affects the overall structure of society and relationships within social strata [3].

The Ministry of Sports and Youth states that social participation and the development of youth-friendly activities can reduce social damages and contribute to controlling and preventing the harms of virtual spaces [3]. Participation in sports and physical education activities contributes to improving quick responses. Moreover, by regulating body movements and creating proper body postures, it contributes to the development and coordination of the nervous and muscular systems of individuals' eyes and hands. Therefore, sports participation plays a crucial role in the mental and psychological health of individuals, and identifying factors affecting sports participation is of great importance [4]. The results of conducted research indicate that providing sports infrastructures increases sports participation [5]. Many sports require sports facilities. Therefore, if suitable sports facilities for individuals' participation in sports are not provided, many individuals will be deprived of participating in sports. Establishing infrastructures and accessibility of sports environments and facilities for the general public is essential [6].

The results of research by Williams and Watkins (2006) on the obstacles to girls' participation in physical activities show that the cause of inactivity in girls is related to internal factors (interest and motivation) and has little connection to external factors (occupation and recreation). They also observed that disinterest, coaching problems, and time constraints are identified obstacles to students' participation in sports.[7]

On the other hand, demographic characteristics have a significant impact on sports participation. Using demographic variables, large human groups can be divided into specific customer groups. We all know that each individual in society has specific characteristics such as age, gender, religion, race, nationality, etc., and income. Therefore, these variables are very helpful in transforming the mass market into smaller markets. Similarly, collecting and analyzing information for each of these groups in market research is more feasible in less time, and advertising for each of them can sometimes be easier[8]. Demographic characteristics of each person are the general pattern or physical structure, behavior, interests, talents, abilities, tendencies, and other traits. Thus, demographic characteristics refer to the set or total characteristics and traits of an individual[9].

Regarding the relationship between sports and demographic characteristics, one of the broadest beliefs is that sports affect various demographic characteristics. Such positive effects may be temporary or permanent, or in the case of younger individuals, it may be more significant because their psychological and emotional development process is still forming, more than older individuals[6]. Therefore, considering the information presented in this research, we seek to answer the question of whether sports infrastructures and demographic characteristics influence the level of sports participation among women in Yazd.

In today's world, people constantly feel fatigue, and the importance of sports activities for the general public is undeniable [10]. However, in the modern world, many people struggle to achieve the minimum recommended physical activity levels for maintaining health and successful functioning [11]. A study conducted at the University of Maryland in the United States in 2005 showed that men's participation in sports activities is higher than women's [12]. There are many factors confirming that women have lower participation in sports activities. Psychologists believe that depression, anxiety, insomnia, and mental imbalance always threaten individuals' mental health, affecting their physical and mental capabilities [13]. To analyze the sports participation of different segments of society, examining three factors—individual characteristics and beliefs, goals and motivations of individuals, and the environment and behavior of individuals and groups—is essential [4]. It is evident that personal characteristics of individuals are among the influential factors in the level of sports participation [14]. Additionally, facilities and equipment are basic needs for any task. It is without doubt that the quality of implementing any program depends on the quality and quantity of its tools and equipment. The desirable implementation of sports programs also requires providing a set of conditions and facilities, with the use of spaces and equipment prepared according to standard norms being one of the most important conditions. Therefore, assessing the status of sports facilities and identifying deficiencies and shortages can help us develop plans and processes to improve these spaces towards achieving desirable standards [15].

Considering the research conducted on the main components of the organization, material resources are crucial in serving human resources and achieving organizational goals effectively. Human resources can only perform tasks

if they have the minimum facilities and equipment [16]. In a sports club, achieving desired goals requires not only experienced and capable coaches and dedicated athletes but also suitable facilities in the respective field. It is natural that the more suitable the facilities are, the more the organization's human resources will benefit from them. Similarly, if material resources are used correctly and according to a well-organized plan, optimal efficiency will be achieved. It is noteworthy that the efficiency of any organization declines when material resources and human resources are not properly directed [17]. People in society are looking for standard and excellent sports spaces, while part of the duties of physical education managers is to prepare and predict the facilities, equipment, and sports spaces needed for the present and future. Considering the role of physical education in society, sports spaces in different cities can be the grounds for social growth and achieving other physical education goals [18]. According to reports, surveys, and research conducted in various areas of physical education and sports, most researchers point out the lack of inadequacy of sports facilities or the problem of non-standard sports equipment.[16] Therefore, the management of sports facilities and installations can be effectively carried out by applying management knowledge in this sector. This includes establishing standard sports spaces, preserving and maintaining them, and ensuring optimal and efficient utilization. Sports tools and equipment, along with suitable educational spaces, are the most effective components for achieving physical education goals [18].

The results of research by Akbari et al. (2017) showed that social factors do not have a statistically significant effect on household sports participation. However, economic factors influence household sports participation. According to the research results, to increase household sports participation, attention to economic factors is more important than social factors [1]. The results of the study by Ebrahimi, Mahdipour, and Azmasha (2016) indicated a significant relationship between proximity, accessibility, hygiene, maintenance, and aesthetic criteria of sports facilities with citizen participation. Moreover, increased sports facilities and the rise in individuals' education levels and income lead to increased participation [2]. The study by Shafiei et al. (2016) demonstrated that family support, both verbal and parental involvement in physical activities, significantly influences children's sports participation [3]. The research results by Parsa (2016) indicated that among physical education teachers in Zahedan, structural factors are the most effective obstacles to their sports participation. Intrapersonal and interpersonal obstacles are in the next priorities. The primary need of physical education teachers in Zahedan for participating in sports activities is prioritizing structural barriers, which can increase their participation by reducing the time spent going to sports venues, providing transportation services, and having sports venues close to residential areas [19].

The results obtained from the research by Moosavi, Eslami, and Khoshfar (2014) showed a meaningful relationship between institutional trust and demographic variables, including age, marital status, number of children (both daughters and sons), parents' education levels, father's occupation, residence location in the city (district), and the use of collective communication tools (other than watching domestic television), with women's participation in sports activities. However, women's sports participation did not show a significant difference in variables such as interpersonal trust, employment status, type of occupation, income, type of residence, mother's occupation, and residential area [9]. The results of the study by Kargar, Ahmadi, and Ahmadi (2013) indicate that among the research structures, only social trust affects women's attitudes toward sports participation. Among demographic variables, only the relationship of age, marital status, and education with women's attitudes toward sports participation is significant. Explaining the dependent variable in terms of the sum of independent variables indicates that two variables, age and social trust, are the strongest predictors and explain 90.0% of the changes in the dependent variable [7]. The results of the research by Wicker, Hallmann, and Breuer (2013) showed that the existence of standard sports facilities and their proximity to residential areas, as well as individual variables, significantly affect sports participation. Moreover, the results of this study indicated that sports facilities have a greater impact on sports participation compared to individual variables [20]. The results of the study by Hallmann et al. (2011) demonstrated that sports facilities have a significant impact on students' sports participation [21].

2. RESEARCH METHODOLOGY

Considering that the main objective of this research is to investigate the impact of sports infrastructure and demographic characteristics on the level of women's sports participation in Yazd County, the present research employs an applied and descriptive survey method. The study population consists of all women residing in Yazd County who use sports facilities. Based on inquiries from active sports facilities in Yazd County, this number was estimated to be 342 individuals. To determine the sample size in this research, the Cochran formula was utilized, resulting in a sample size of 181 individuals. Simple random sampling was employed for participant selection.

In this study, a questionnaire was used, including demographic information (age and education), the sports infrastructure checklist (Ghanbari, 2011), and the Gil Sports Participation Questionnaire (1983). The sports infrastructure checklist consists of 56 items designed on a two-option Likert scale, "Yes" and "No." The minimum score for each item is zero, and the maximum score is one, ranging from zero to 56. The Gil Sports Participation Questionnaire comprises 22 items, assessing sports participation on a five-option Likert scale. In Ghanbari's (2011) research, the content, face, and construct validity of the sports infrastructure checklist were evaluated. The validity of the sports participation questionnaire was assessed by Gil (1983) using correlation and structural validity methods. The Cronbach's alpha coefficient was calculated to be 0.89 for the sports infrastructure checklist and 0.91 for the sports participation questionnaire.

For data analysis, descriptive statistics (tables, frequencies, diagrams, etc.) and inferential statistics, including the Kolmogorov-Smirnov test for normality, Pearson correlation coefficient, regression analysis, and analysis of variance (ANOVA), were used. The statistical software SPSS was employed for data analysis.

3. FINDINGS ANALYSIS

Descriptive statistics of the demographic characteristics of the study participants are presented in Table 1.

Table 1. Descriptive statistics of demographic characteristics of the research sample

Demographic Variable	Category	Frequency	Percentage (%)
Age	Under 20 years	29	16.0
	21–25 years	73	40.3
	26–30 years	42	23.2
	31–35 years	37	20.4
Education	Below diploma	2	1.1
	Diploma	29	16.0
	Associate degree	35	19.3
	Bachelor's degree	88	48.6
	Master's degree	27	14.9
	Total		181

Hypothesis 1: *Sports infrastructure has a significant effect on the level of women's sports participation in Yazd.*

To examine the effect of sports infrastructure on participation levels, the Pearson correlation test was first conducted. Subsequently, a regression analysis was performed to determine the magnitude of the effect. The results of the Pearson correlation analysis are presented in Table 2.

Table 2. Results of Pearson correlation test for the first hypothesis

Variable	Sports Participation
Sports Infrastructure	Pearson Correlation Coefficient: 0.734
	Significance Level (p): 0.000
	Sample Size (N): 181

As shown in Table 2, the correlation coefficient between sports infrastructure and sports participation is 0.734, which is statistically significant at the 99% confidence level ($p < 0.01$). Therefore, the null hypothesis is rejected, and the alternative hypothesis is confirmed. This indicates a strong and positive relationship between sports infrastructure and women's sports participation, implying that the improvement and expansion of sports infrastructure leads to higher levels of participation.

To further examine this hypothesis and assess the influence of the independent variable on the dependent variable, a regression analysis was conducted.

Table 3. Results of regression analysis and coefficient of determination for the first hypothesis

R	R ²	Adjusted R ²	Standard Error of Estimate
0.734 ^a	0.538	0.536	9.11391

As presented in Table 3, the coefficient of determination (R²), which indicates the proportion of variance in the dependent variable explained by the independent variable, equals 0.538. Therefore, 53.8% of the variance in sports participation can be predicted based on the level of sports infrastructure.

To determine whether there is a linear relationship between the predictor (independent variable) and the criterion (dependent variable), the F-test (overall regression test) was employed. According to the results (see Table below), F = 208.607, with a significance level of 0.000. This finding confirms the existence of a statistically significant linear relationship between the independent and dependent variables in this study.

Table 4. Results of the F-Test

Model	Sum of Squares	df	Mean Square	F Value	Significance Level (p)
Regression	17327.555	1	17327.555	208.607	0.000
Residual	14868.335	179	83.063		
Total	32195.890	180			

In addition, the following table presents the relationship between the dependent variable, *sports participation*, and the independent variable, *sports infrastructure*.

Table 5. Results of regression analysis for Hypothesis 1

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
Constant	46.501	1.529		30.413	0.000
Sports Infrastructure	0.640	0.044	0.734	14.443	0.000

According to Table 5, since the significance level for the independent variable is less than 0.05, the hypothesis is confirmed. Therefore, sports infrastructure has a significant effect on women’s sports participation.

Hypothesis 2: *Age has a significant effect on the level of women’s sports participation in Yazd.*

To test this hypothesis, Pearson correlation and regression analyses were employed. The results of the Pearson correlation test are presented in Table 6.

Table 6. Results of Pearson correlation test for Hypothesis 2

Variable	Sports Participation
Age	Pearson Correlation Coefficient: 0.697
	Significance Level (p): 0.000
	Sample Size (N): 181

As shown in Table 6, the correlation coefficient between age and sports participation is 0.697, which is statistically significant at the 99% confidence level (p < 0.01). Therefore, the null hypothesis is rejected, and the alternative hypothesis is confirmed. This result indicates a positive and significant relationship between age and sports participation, meaning that as age increases, women’s participation in sports tends to rise.

To further examine the influence of age on sports participation, a regression analysis was conducted.

Table 7. Results of regression analysis and coefficient of determination for Hypothesis 2

R	R ²	Adjusted R ²	Standard Error of Estimate
0.697 ^a	0.485	0.483	9.62065

As presented in Table 7, the coefficient of determination (R²) equals 0.485, indicating that 48.5% of the variance in sports participation can be explained by age.

To determine whether there is a linear relationship between the predictor (age) and the criterion (sports participation), the F-test was applied. The results, shown in Table 8, indicate F = 168.850 with a significance level of 0.000, confirming the existence of a statistically significant linear relationship between age and sports participation.

Table 8. Results of the F-Test

Model	Sum of Squares	df	Mean Square	F Value	Significance Level (p)
Regression	15628.213	1	15628.213	168.850	0.000
Residual	16567.676	179	92.557		
Total	32195.890	180			

Furthermore, Table 9 shows the regression coefficients for the independent variable (age) and the dependent variable (sports participation).

Table 9. Results of regression analysis for Hypothesis 2

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
Constant	43.001	1.930		22.277	0.000
Age	9.392	0.723	0.697	12.994	0.000

As shown in Table 9, since the significance level for the independent variable (age) is less than 0.05, the hypothesis is confirmed. Hence, age has a significant effect on women’s sports participation.

Hypothesis 3: *Educational attainment has a significant effect on the level of women’s sports participation in Yazd.*

Given that the education variable is categorical, a one-way analysis of variance (ANOVA) was used to examine this hypothesis. The results are presented in Table 10.

Table 10. ANOVA results for testing Hypothesis 3

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4377.612	4	1094.403	6.924	0.000
Within Groups	27818.277	179	158.058		
Total	32195.890	180			

As shown in Table 10, the significance level is less than 0.05, indicating that educational level has a statistically significant effect on women’s sports participation. To identify between which educational groups this difference occurs, the Scheffé post hoc test was conducted. The results are presented in Table 11.

Table 11. Results of Scheffé post hoc test for Hypothesis 3

Education Level (I)	Education Level (J)	Mean Difference (I–J)	Std. Error	Sig.
Below Diploma	Diploma	-5.68966	9.19127	0.984
	Associate	-7.31429	9.14030	0.467
	Bachelor	-7.78409	8.99029	0.945
	Master	-1.70370	9.21321	0.999
Diploma	Below Diploma	5.68966	9.19127	0.984
	Associate	-11.62463	3.15694	0.011
	Bachelor	-2.09444	2.69192	0.962
	Master	3.98595	3.36219	0.843
Associate	Below Diploma	17.31429	9.14030	0.467
	Diploma	11.62463	3.15694	0.011
	Bachelor	9.53019	2.51238	0.008
	Master	15.61058	3.22024	0.000
Bachelor	Below Diploma	7.78409	8.99029	0.945
	Diploma	2.09444	2.69192	0.962
	Associate	-9.53019	2.51238	0.008
	Master	6.08039	2.76589	0.309
Master	Below Diploma	1.70370	9.21321	0.999
	Diploma	-3.98595	3.36219	0.843
	Associate	-15.61058	3.22024	0.000
	Bachelor	-6.08039	2.76589	0.309

As shown in Table 11, the mean difference in sports participation scores between the *associate degree* and *diploma* groups is -11.62463, which is statistically significant ($p = 0.011 < 0.05$). This indicates a meaningful difference in sports participation between these two groups.

Similarly, the difference in participation scores between the *associate degree* and *bachelor's degree* groups is 9.53019, which is also statistically significant ($p = 0.008 < 0.05$). Moreover, the difference between the *associate degree* and *master's degree* groups is 15.61058, again statistically significant ($p = 0.000 < 0.05$). These findings suggest that educational level plays an important role in influencing women's sports participation, with higher levels of education generally associated with greater involvement in sports activities.

4. DISCUSSION AND CONCLUSION

The results of the first hypothesis indicated that sports infrastructure significantly affects the level of women's sports participation in Yazd. In other words, improvements in sports infrastructure lead to increased participation in physical activities. This finding is consistent with the studies of Ebrahimi, Mehdipour, and Azmosha (2016); Mousavi, Eslami, and Khoshfar (2014); Kargar, Ahmadi, and Ahmadi (2013); Kruger and Vinke (2014); Siazwani and Mariam (2013); Wicker, Hallmann, and Breuer (2013); Hallmann et al. (2011); and Huggins and Rundle (2010), but inconsistent with the results of Parsa (2016).

Sports facilities and infrastructures are expanding rapidly, and single-purpose venues are gradually being replaced by multi-purpose complexes. Designers and constructors of sports facilities are increasingly utilizing modern technology and engineering knowledge to develop more advanced, efficient, and accessible spaces. Adequate sports infrastructure is one of the main factors contributing to the qualitative improvement of sports performance, while the lack of appropriate facilities is among the obstacles that slow down athletic progress. Unless this shortage is addressed, it is unlikely that athletes will be able to reach their full potential.

A brief look at the championship medal tallies of various countries reveals that most international achievements belong to nations with well-developed sports infrastructure. When designing and constructing sports facilities, safety

considerations and creating a comfortable, enjoyable environment are essential priorities. In recent years, national policies have placed greater emphasis on the development of sports infrastructure. Consequently, nearly every city and region in the country now possesses numerous sports complexes. Schools, universities, industrial sectors, and labor organizations are also increasingly equipped with dedicated sports and recreational facilities.

The results of the second hypothesis demonstrated that age has a significant effect on the level of women's sports participation in Yazd, meaning that women's participation in sports is dependent on their age. This finding aligns with the results of Ebrahimi, Mehdipour, and Azmosha (2016); Mousavi, Eslami, and Khoshfar (2014); Kargar, Ahmadi, and Ahmadi (2013); Kruger and Vinke (2014); Siazwani and Mariam (2013); and Huggins and Rundle (2010), but it contrasts with the findings of Wicker, Hallmann, and Breuer (2013) and Hallmann et al. (2011).

Exercise should be practiced continuously throughout life, considering factors such as age, gender, and physical condition, except in cases where there are clear medical contraindications. According to the recommendations of the Medical Commission of the National Sports Committee, physical activity may be temporarily or permanently restricted only when medically necessary. Appropriate sports activities vary across different life stages. For instance, in youth, exercise should focus on strengthening muscles to prevent weakness in later years. After the age of forty, the emphasis should shift from building muscle mass to maintaining health and longevity, and beyond fifty, the goal should be to delay aging and prevent its physical consequences. The present study found that as age increased, individuals demonstrated higher levels of participation in sports and greater enthusiasm for physical activity.

The results of the third hypothesis revealed that educational attainment significantly influences women's sports participation in Yazd, indicating that participation levels are dependent on women's educational background. This finding is consistent with the results of Ebrahimi, Mehdipour, and Azmosha (2016); Mousavi, Eslami, and Khoshfar (2014); Kargar, Ahmadi, and Ahmadi (2013); Kruger and Vinke (2014); Siazwani and Mariam (2013); Wicker, Hallmann, and Breuer (2013); and Huggins and Rundle (2010), while differing from Ghodsi (2014) and Hallmann et al. (2011).

As Bourdieu and other sociological theorists have emphasized, an individual's level of cultural capital—such as education—plays a crucial role in shaping participation in social and recreational activities. Empirical studies conducted by reputable academic institutions across different age and gender groups have shown that individuals with higher levels of education engage in physical activities three to four times more frequently per week than those with lower educational levels.

According to medical experts and researchers, educated individuals tend to value health and the benefits of physical exercise more deeply, often staying informed about wellness and fitness trends through journals, news, and academic resources. Despite their busy professional and intellectual lives, they typically allocate several hours a week to sports, observing its positive effects on their overall well-being. Available statistics further confirm that those who achieve higher academic performance and demonstrate intellectual success also tend to engage regularly in sports and physical activity.

5. RECOMMENDATIONS

Based on the findings of the first hypothesis, it is recommended that investment and development of sports infrastructure be prioritized to enhance public participation in sports. For example, constructing sports facilities in accessible and strategically planned locations allows citizens to reach them more easily by public transportation, thereby reducing private car use and, consequently, lowering traffic congestion and air pollution.

According to the results of the second hypothesis, special attention should be paid to encouraging younger individuals to engage in sports activities. This can be achieved through targeted educational programs, adequate training, and provision of sports equipment within schools and other educational institutions to foster a lifelong habit of physical activity.

Based on the findings of the third hypothesis, it is suggested that the Municipality and the Department of Physical Education of Yazd organize more awareness programs highlighting the benefits of physical exercise, particularly targeting individuals with lower educational attainment. Additionally, holding local sports competitions and community-based sporting events can significantly increase sports participation across different social and educational groups.

Transparency Statement

The data supporting this study are available upon reasonable request to the corresponding author, subject to ethical and confidentiality considerations.

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Declaration of Interest

The authors declare that they have no competing interests.

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