

Analysis Role of Cost, Time and Attractiveness at Leisure Time Physical Activities in Students of Tehran Universities, Iran

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Abstract: The aim of this study was to compare the role of cost, time and attractiveness in predicting the participation level of the students of Tehran universities during their leisure time physical activities. This study is an applied and descriptive correlational survey study. The study population included students at public universities of Tehran. The sample consisted of 390 individuals who had chosen by the Morgan table in the multistage cluster and randomly. The instrument of study was a researchers developed questionnaire that was included 42 items. Its validity was confirmed by sports management and communication experts. To assess the reliability of questionnaire a pilot study was done on 30 students using Cronbach's alpha was equal to the average reliability 0/87. Data analyzing was done by K-S test, binary logit regression analysis and t-test according to variable conditions. The most important findings were that the only attractiveness (the facility and fields of recreational sports) factor predicted the level of student participation in leisure-time physical activities. Obtained Odds Ratio (OR = 1.073) is indicating an increased level of participation with increasing attractiveness rates simultaneously. The results showed that the constraining effect of cost and time was adjusted by attractiveness.

Key words: Cost, time, attractiveness, participation, LTPA

INTRODUCTION

The united nations universal declaration of human rights states: 'everyone has the right to rest and leisure, including reasonable limitation of working hours and periodic holidays with pay' and 'everyone has the right freely to participate in the cultural life of the community to enjoy the arts and to share in scientific advancement and its benefit's (Torkildsen, 1992). The field of health and human performance has significantly contributed to our understanding of factors that affect the human body in all domains: physical, affective, cognitive, spiritual and social. Researchers and practitioners in both disciplines strive to attain a common goal: increased quality of life for an individual. An area of research that has gained considerable attention among researchers across disciplines is constraints (Patterson, 2001). On a general level, constraints are those factors that may limit participation and enjoyment in a given activity (Jackson, 1991). Understanding constraints has contributed to our understanding of leisure behavior in general (Jackson and Burton, 1999). Because the risk factors and unhealthy behaviors causing heart disease in adulthood are founded

on childhood and youth so the big problem is lack of physical activity in young people now (Taymoori *et al.*, 2009). Level of students physical activity for the sake of their social role is critical in determining and establishing the social and cultural norms in the future (Cengiz *et al.*, 2009). However, the universities had provided places for physical activity and exercise but studies showed that over 50% of students do not get enough physical activity (Farmanbar *et al.*, 2009). About the major barriers of physical activity World Health Organization surveys the barriers such as lack of time (most important), safety concerns, feel tired and need to rest, the feeling of having enough physical activity, lack of awareness about its benefits, the lack of support obligations, lack of intramural sufficient cooperation, the lack of access to exercise facilities, economic pressures and cultural problems in women referred for physical activity (WHO, 2003). A new approach for classification of leisure constraining factors and the way they influence participation in leisure time activities was presented in a hierarchical model by groups of investigators including Crawford, Godby and Jackson (Carrol and Alexandris, 1997). Possibility of digression threats in leisure time is almost out of the question for

students who spent their teenage in safe so the constructive aspect, innovation, creativity, imagination and inner satisfaction from leisure time is placed of more attention. Paying attention to sports activities during study at the University which is a great opportunity for students to become familiar with the benefits of active lifestyle is essential. Although, the health benefits of physical activity and Leisure Time Physical Activity (LTPA) is widely known however when recreation requires a certain degree of self-effort by a person the patterns of participation will be different. They should create a balance between the benefits and pleasure acquired by physical activity against the amount of time and money should be spent (Nicolau, 2011). In this study LTPA is the sports-recreational activities that individuals do at leisure areas. The dominant belief is that time and cost acts as a constraining and deterrent dimension about participation in LTPA (Crawford and Godbey, 1987) on the other hand, researchers assumption is that exercise and physical activity in leisure time as an attractive product can justify the required costs and time and in some cases, people are willing to spend more money and time to achieve the benefits of the physical activity at leisure times. So, the question raised to the researcher is that what is the special role of time and cost and does attractiveness play the moderating role at participation of students of Tehran Universities in leisure-time physical activity?

Literature review

Background: Leisure constraints are typically defined as factors that limit or prohibit participation in desired leisure activities (Crawford and Godbey, 1987; Crawford *et al.*, 1991). Crawford and Godbey (1987) described three domains of constraints--intrapersonal, interpersonal and structural. Crawford *et al.* (1991) later developed a hierarchical model of leisure constraints with three main extensions to the earlier conceptualization: explicit articulation of constraint negotiation in which people utilize various strategies to overcome constraints; a hierarchy of importance from proximal (intrapersonal) to distal (structural) and a hierarchy of social privilege with emphasis on the ways that opportunities and constraints differ by social class. Jackson *et al.* (1993) provided further elaboration of the hierarchical model in response to research on constraint negotiation (Kay and Jackson, 1991; Scott, 1991; Shaw *et al.*, 1991), focusing on level of participation rather than an either/or dichotomy between participation and nonparticipation. There is some support for the propositions outlined by Jackson *et al.* (1993) Alexandris and Carroll (1997a), Alexandris *et al.* (2002),

Hubbard and Mannell (2001), Raymore *et al.* (1993), although, there is a lack of research utilizing different populations (Barbara *et al.*, 1999), particularly individuals 50 and older and multiple methodologies (Samdahl and Jekubovich, 1997). The inclusion of motivation into the hierarchical constraints model and the elaboration of its possible influence on leisure preferences and level of leisure activity participation have helped clarify the relationships between constraint, negotiation, motivation and leisure participation (Alexandris *et al.*, 2002; Carroll and Alexandris, 1997; Hubbard and Mannell, 2001). For instance, Carroll and Alexandris (1997) found that in the case of recreational sport participation, motivation was positively associated with participation while constraint was negatively associated with participation. Alexandris *et al.* (2002) also found that intrapersonal constraint accounted for 38% of the variance in lack of motivation and 15% of the variance in intrinsic motivation (only individual/psychological and lack of interest had significant contributions) but there was no relationship between interpersonal and structural constraint and motivation type nor between any of the constraint domains and extrinsic motivation. There is shown Leisure Constraints Model by Jackson (1991) in Fig. 1.

Hubbard and Mannell (2001) found that outcome-based motivation (the expectation of health and enjoyment benefits) had an indirect effect, through negotiation, on physically active leisure participation. Thus, similar to the effect of negotiation on the constraint-participation relationship, they found that negotiation mediated the relationship between motivation and participation. In fact, due to its insignificance, the direct path between motivation and participation was removed from their final model, indicating that negotiation fully mediated the motivation-participation relationship. Aside from these studies, there has been little research on the role of motivation in the context of constraint to and negotiation of leisure participation, although motivation has been shown to be an important factor for participation in diverse leisure activities and settings (Ahola, 1999; Mannell and Kleiber, 1997). Mannell and Atkinson (2005) maintained that motivation should be considered a key component in the study of leisure constraint and negotiation. Further, Hubbard and Mannell (2001) suggested that additional research is needed to test models of leisure constraint, negotiation and motivation with different samples. There is also a lack of research on the role of motivation in the context of age, gender and the specific subdimensions of physical activity (e.g., frequency and duration). Specifically, there appear to be no studies examining the role of motivation

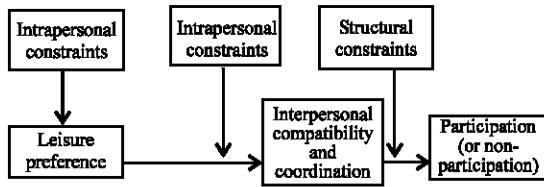


Fig. 1: Leisure constraints model (Jackson 1991)

in the leisure constraint negotiation process for 50 years and older nor any that compare how these processes might be different for men and women. Moreover, there are no constraint negotiation studies examining the multiple subdimensions of physical activity.

Given the known health benefits of regular physical activity, researchers have examined factors that may explain the nation's lack of activity engagement. Much investigation of this nature has centered on the impact of constraints or barriers that prevent persons from routinely participating. In general, barriers to physical activity have been conceptualized as being intrapersonal, interpersonal, structural, institutional, community-related and public policy-related (McLeroy *et al.*, 1988). Intrapersonal constraints include attitudes, values, or beliefs which a person holds that hinder involvement. Examples include characteristics that are modifiable such as lack of motivation, energy and skill level, or fear of injury as well as non-modifiable such as age, genetic factors, gender and health conditions. Interpersonal constraints are formal and informal social networks and social support systems. Examples include lack of encouragement and support from family and/or friends or lack of a workout partner. Structural constraints consist of barriers that arise as a result of external conditions in the environment. Examples include lack of time, money, transportation or concern about crime and safety. Institutional barriers are formal and informal contexts within social institutions such as lack of physical activity breaks within the workplace. Community barriers are relationships among organizations and informal networks within defined geographic boundaries such as the lack of facilities and equipment. Public policy includes local, state and national laws and policies such as city ordinances prohibiting skateboarding on public sidewalks. For the general adult population, the literature indicated the major barriers to participating in leisure-time physical activity in ascending order of relevance are: lack of time, lack of motivation, inconvenience, safety concerns and accessibility (DOHHS, 1999; NCHS, 2004; Sallis *et al.*, 1989). Ehsani (2003) in a study of constraining factors of participation in sports activities at Khorasegan Islamic Azad University female students came to the conclusion that constraining

factors based on sex and participation in sports activities respectively included the time, interest, money, facilities, lack of awareness, skills, social relationships and lack of physical fitness. Gharakhanlou (2003) reported on comprehensive plan of exercise, according to the low-share of cost for entertainment in a basket of household spending (54/2%) compared with smoking (3/3%) noted it means that Iranian families had have less attention and little fortunate in sports and entertainment. Farahani and Goudarzi research determined that 80% of respondents have stated that recreational facilities of the university was very poor and the most important factor being engaged in physical activity are being too busy, did not have time then not complying appropriate facilities, sports venues with Leisure Time and economic problems were mentioned (Rezaei, 2005). Hashemi stated that the economic, cultural, social and sports facilities had maximum constraining effect on the participation of female employees. The study of women's use of sports facilities, the results of a study into limiting factors of women's participation in sports, respectively articulated lack of access to sports facilities, lack of adequate time devoted to women's sports program, costly registration fees, lack of time and opposition from family members (Sedarati, 2005). Karimiyan *et al.* (2011) in their study sought to determine the pattern of constraining factors of participation in the activities in Isfahan educational hospitals employees by the hierarchical model of leisure these results were achieved, respectively structural factors, individual factors and interpersonal factors underwent in terms of the priority and economic factors in the structural factors, played a major role in not participating in sports activities. Rezaei (2005) in other research investigating the leisure time status of high school students at the city of Rasht and its relation to level of cultural and sports facilities found that >60% of the subjects reported limitation of resources and space, cultural programs and sports constraints, the lack of financial ability to pay the tuition, lack of spaces in the neighborhoods to exercise as well as sports facilities limitations were not satisfied with the way they had spent their leisure time.

According to Alexandris and Carroll (1997b) women are significantly facing with constraining factors more than men and in particular intrapersonal constraining factors existed more than any other factors in this case. Time is also a constraining factor among married women than unmarried individuals. By Ziebland's study it became clear that two internal barriers (e.g., lack of interest, laziness and not having enough time) and external barriers (e.g., lack of transportation, lack of ability to pay tuition classes) would lead to not participating women in sports,

health preservation and slimming programs. The results of this study showed that people who are faced with internal barriers compared to those with external barriers are less able to participate in sports activities (Keshkr and Ehsani, 2007). Jackson concludes:

- Lack of skill and ability had the least importance at all ages but with increasing age, its importance gradually and slowly grows
- The importance of cost goes down with increasing age but it initially is the main individual constraining factors to participation in leisure activities
- The importance of quantity and quality constraining factors of sports facilities is not altered with increasing age
- Separation is U-shaped form, it means that as a constraining factor is very important in youth, middle age during its importance is low and then the importance will increase with increasing age. Humpel *et al.* (2002) in a study of “environmental factors associated with adult’s participation in physical activity” concluded that physical environment factors have consistent associations with physical activity behavior. Accessibility, opportunities and aesthetic attributes showed significant associations with physical activity. Weather and safety however showed less-strong relationships

Kerstetter *et al.* (2008) in a research titled “Functional Support Associated with Belonging to the Red Hat Society (R), a Leisure-based Social Network” came to the conclusion that functional support is multidimensional (e.g., spending time with friends, attention from others) and with few exceptions, positive. In addition, the functional support is primarily emotional and social in nature rather than informational and financial, as has previously been reported in social networks research. In a study of “leisure-time physical activity barriers among border Mexican American women” by Guinn and Vincent (2008) the results indicated that the intrapersonal constraint of lack of motivation and the structural constraint of lack of time differentiated between inactive and active subjects. These results have implications for the development of interventions designed to overcome perceived physical activity obstacles. Sener *et al.* (2010) in a study focusing on analyzing and modeling the physical activity participation levels (in terms of the number of daily “bouts” or “episodes” of physical activity during a weekend day) of all members of a family jointly considered as a “cluster” of individuals whose

physical activity propensities may be affected by common household attributes (such as household income and household structure) as well as unobserved family-related factors (such as family life-style and health consciousness and residential location-related factors). The results also suggested that policy interventions aimed at increasing children’s physical activity levels could potentially benefit from targeting entire family units rather than targeting only children. Finally, the results indicated strong and asymmetric dependence among the unobserved physical activity determinants of family members. In particular, the results showed that unobserved factors (such as residence location-related constraints and family lifestyle preferences) result in individuals in a family having uniformly low physical activity but there is less clustering of this kind at the high end of the physical activity propensity spectrum. Mansfield *et al.* (2012) in a study examined individual, social and environmental factors influencing physical activity levels and behaviors of multiethnic socio-economically disadvantaged urban mothers in Canada: a mixed methods approach perceived that physical inactivity among women from diverse ethnic groups and immigrants in Canada are common. This inactive lifestyle plays an important role in the health status of these women. Especially when women are faced with deprivation including income and education more likely experience lower levels of LTPA in a lifetime. In addition, there is evidence that suggests the role of motherhood and socioeconomic status as strong predictor of physical activities. Harrolle *et al.* (2013) in a research entitled “Physical Activity Constraints among Latinos Identifying Clusters and Acculturation Differences” perceived that access and partner constrained, safety and access constrained, least constrained and highly con-strained. Results showed that low acculturation was significantly associated with being highly constrained. Latinos born outside the US were more likely to be classified as access and partner constrained and safety and access constrained; the findings contribute to understanding constraints in the context of acculturation and offer practitioners perspective on creating physical activity programs for Latinos.

MATERIALS AND METHODS

Methodology is based on applied and descriptive correlational survey study. Population of this research was consist of students of national universities in Tehran city between the educational years of 2012- 2013 which is

engaged in education levels of BS, MS and PhD. The number of population was about 150,000 people resulting based on the statistical data of the universities and library resources (Davoudi, 2012). Of public universities of Tehran four universities including Allameh Tabataba'i University, Tehran, Kharazmi and Tarbiat Modarres universities randomly have been selected as the sample size. The subjects consist of 390 individuals obtained by Morgan table that was used randomly as a multi-stage cluster sampling. In order to organize and summarize the raw scores and sample sizes describing it was used the descriptive statistics (means, percentages, frequency (Table 1). All of research hypothesis have been studied at the significance level of $p = 0.050$). We used Kolmogorov-Smirnov test to determine the normality level of research data, binary logit regression analysis to predict the level of participation by cost, time and attractiveness and t-test were applied to determine the moderating effect of attractiveness for costs and time. The instrument was a self-developed questionnaire. The questionnaire started with a brief introduction about the purpose of survey, asking sincere cooperation and how to answer to the questions explained for the respondents. Also, the questions consists of two sections of the main body and demographic ones. The main questions aimed at measuring student participation status in sports recreation activities or physical activities with 4 items, 9 questions to assess the cost of spent for sports-recreation activities and transportation costs, 8 questions to assess the time of spent for sports-recreation activities and transportation time and attractiveness with 10 questions were given order to assess the attractiveness of LTPA (diversity, excitement, competitiveness, etc) and the attractiveness of sports-recreational facilities (safety, beauty, welfare services, modern equipment, etc). For purposes of the study, physical activity was defined on the instrument as engaging in moderate to vigorous activities during leisure and/or free time. A range of five option Likert scale (strongly agree, agree, I do not know, disagree, completely disagree) were given respectively the scores of (5, 4, 3, 2, 1). The opinions of sports management experts and university instructions have used to assess the questionnaire validity. Reforms and proposals by the instructions used and the content validity of the questionnaire were approved after receiving their opinions and make the necessary changes. To assess the reliability and implementation of the questionnaire a pilot study was run on 30 subjects and to determine the variance of questions Cronbach's alpha coefficient were used that according to the different sections are listed in Table 2 average reliability has been with 0/87.

Table 1: Reliability coefficient of the questionnaire based on each of the sectors

Questions	No. of questions	The coefficient of α
The role of costs at the level of students participation	9	0.74
The role of time at the level of students participation	8	0.82
The role of attractiveness	10	0.90
Average		0.87

Table 2: Normal distribution K-S test of the variables of time, cost and attractiveness

Statistical indicators variable	Number (sample)	Kolmogorov-Smirnov	Significant level (Z)
Cost	372	1.058	0.213
Time	372	1.801	0.003
Attractiveness	372	1.336	0.056

RESULTS AND DISCUSSION

The data description results showed that from the total of 373 studied students, there were 35/5% of individuals 18-22 years old, 45/5% of individuals between 23-26 year old, 18% of individuals 27-30 year and 4 individuals (1%) were aged 31 and above. The majority of the students, 323 (89%) were single and only 41 individuals (11%) were married. About 169 individuals have BA (45/3%) degree, 192 individuals (51/5%) MS and 12 individuals (2/3%) were PhD students. About 223 individuals (59/8%) from Human Sciences, 47 (12/6%) Basic Sciences, 100 (26/8%) from Engineering and 3 individuals (0/8%) were medical Sciences. About 279 (74.8%) of students have no income, 30 individuals (8%) <250 thousand Tomans per month, 34 (9.1%) of 251-500 thousand Tomans per month, 16 (4.3%) of 501-750 thousand Tomans per month and 14 (3.8%) students were >750 thousand Tomans per month income. About 121 (32.5%) students do not pay a fee for the physical activity sessions, 118 individuals (31.7%) of the students pay for the sessions and 18.8% of students do not exercise.

Results depicted in Table 2 show that the variables distribution of cost and attractiveness were normal and the distribution of time is not normal ($p = 0.003$), so the choice of statistical tests were based on the same assumptions.

The information provided at the Table 3 indicates that according to the significance level of Wald statistic ($p = 0.05 < 0.109$) the cost factor is not able to predict student participation at leisure-time physical activity.

The information provided at the Table 4 indicates that according to the significance level of Wald statistic ($p = 0.05 < 0.072$) the time factor is not able to predict student participation at leisure-time physical activity.

The information provided at the Table 5 indicates that according to the significance level of Wald statistic ($p = 0.05 > 0.001$) the attractiveness factor is able to

Table 3: The effect of cost factor in predicting the level of student participation at leisure activities

Statistical indicators	Wald	Sig. (p = 0.05)	Odds Ratio (OR)	X ₂	Sig. (p = 0.05)
Amount	2.567	0.109	-	15.140	0.001

Table 4: The effect of cost factor in predicting the level of student participation at leisure activities

Statistical indicators	Wald	Sig. (p = 0.05)	Odds Ratio (OR)	X ₂	Sig. (p = 0.05)
Amount	3.242	0.072		15.140	0.001

Table 5: The effect of cost factor in predicting the level of student participation at leisure activities

Statistical indicators	Wald	Sig. (p = 0.05)	Odds Ratio (OR)	X ₂	Sig. (p = 0.05)
Amount	10.802	0.001		15.140	0.001

Table 6: A study of the role of Attractiveness factor about modifying the effect of time and cost at the participation level by the student t-test

Statistical indicators variable	Number (sample)	Kolmogorov-Smirnov	Significant level (Z)
Attractiveness	372	113.064	371
			0.001

predict student participation at leisure-time physical activity and the OR is equal with 1/073. Table 6 results indicated that according to t-test and a significance level of <0.05, the attractiveness factor in moderating the effects of time and cost for student participation in LTPAs is different.

CONCLUSION

This point should be emphasized that selecting a specific physical activity implicates an individual desire for attaining a profit that greatly increases the probability of doing the activity and may act as an attractiveness factor. Therefore, the researchers assumed that sports and LTPAs can justify the cost and time required as an attractive product and people are more willing to spend money and time to achieve the benefits obtained of LTPAs in some cases. The results strongly support this claim as attractiveness was only predictor factor of student participation in LTPAs among the factors of cost, time and attractiveness. According to The obtained odds ratio (OR = 1.073) for the attractiveness, it can exact scientifically be interpreted that the participation levels will be increased by increasing the attractiveness in recreational-sports activities and recreationa-sports facilities. This result represents opening a new window to look at the reasons and motivations of participation or ignoring LTPA in terms of students. A study that investigated the role of attractiveness (up sport-recreational fields and sport facilities) didn't find to be addressed after much searching and reviews but there are many studies that suggest the constraining role of cost and time on the participation of LTPAs (Guinn

and Vincent, 2008; Karimiyan *et al.*, 2011; Ehsani, 2003). There are also few studies reported less constraining role of these two factors. Mannell and Atkinson (2005) maintained that motivation should be considered a key component in the study of leisure constraint and negotiation. Further, Hubbard and Mannell (2001) suggested that additional research is needed to test models of leisure constraint, negotiation and motivation with different samples. There is also a lack of research on the role of motivation in the context of age, gender and the specific sub dimensions of physical activity (e.g., frequency and duration). Specifically, there appear to be no studies examining the role of motivation in the leisure constraint negotiation process for people 50 and older nor any that compare how these processes might be different for men and women. Moreover, there are no constraint negotiation studies examining the multiple sub dimensions of physical activity.

As reasons for being consistent or not consistent with the hypothesis of the present study with other research results can be multifaceted and multidimensional determinants of participation in leisure-time physical activity in contrast with single-sided and one-dimensional view of the issue and differences in the nature of the needs, motivations and degree of importance that each person will get in the benefit and enjoyment of sports-recreational activities. Structural, personal and interpersonal constraints perspective by Jackson (1991) about participating in leisure activities and internal constraints (e.g., lack of interest, laziness and lack of time) and external constraints (e.g., lack of transportation, inability to pay fees classes) perspective noted earlier confirms this claim. The subjects studied was public university students in Tehran that only 31.7% of them have spent money to their LTPAs and other members profited of the free facilities of the Universities or parks and public places and even at home. With this Background it seems logical that the research community hadn't undergone at a heavy price for LTPAs in their goods cart costs and therefore, the cost was not taken into account to determinants of participation in these activities. Also, nowadays is clear that one of the best way to combat a variety of mental and physical diseases that plague today mankind for the machine life style in addition to a variant healthy diet program is regular exercising. Perhaps this increasing public awareness has led people to spend time and money on this direction to achieve the benefits of exercise. It is expected that the awareness level of students, especially students of Tehran universities was even more than public and the benefits obtained from exercise would justify cost and time dedicated. Raising awareness will increase the level

of expectations and demands. Therefore, aware students are seeking to improve the quality, safety, beauty, excitement and pleasure of sports fields and facilities. The difference in cost and time factors influence at students participation in LTPA can be due to differences in the needs, motivations and priorities as noted above. That means for example the time is more important for a senior expert who are preparing for postgraduate exams than who is studying in the second and third semesters. Therefore, the first priority for the first student is most likely studying and then exercise and for the second one is opposite.

RECOMMENDATIONS

There are some recommendations arising from the study to be applied by managers and sports managers including: According to the results of this study the attractiveness of sport-recreational facilities predict the level of participation in LTPA, therefore, constructing beautiful, safe, appropriate services such as buffet and parking and up to date equipment sport-recreational facilities is proposed. According to the results the attractiveness of sport-recreational fields predict the level of participation in LTPA it is recommended that the planned LTPAs be varied, exciting and competitive for students. According to the 18% of the subjects do not participate in LTPAs despite expressing interest in sports, recommended to create promotional campaigns to attract students to be their favorite sports fields by universities. And there are some suggestions for future researches including for the next studies, the needs and motivations can be assessed in examining the reasons for participation or non-participation in LTPA. To investigate the role of attractiveness as a moderating variable of the cost and time effect to participate in leisure time activities in other sectors of society such as urban and rural areas proposed is not sufficient to the only available constraints models such as model by Jackson (1991) and scholars to examine other factors such as the role of culture and its components or individual lifestyle and family and their role in contributing to LTPA be addressed.

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