

## DEVELOPING AN EFFICIENT MODEL FOR EXTENSION OF PUBLIC SPORT IN TEHRAN PROVINCE USING DEMATEL TECHNIQUE

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### Abstract

The present study was conducted to design an efficient model for extension of public sports in Tehran province. In this investigation, influences of privatization, sport facilities, rules and regulations, planning and human resource, financial resources, media and personal properties on extension of public sports were

evaluated. The present study is an applied investigation which was conducted as a descriptive survey with correlation type. Regarding data collection procedure, this is a field study in which data were gathered by means of questionnaire. Statistical population includes 1212 women and men who were active in public sport participation. Using Cochran's formula, a sample of 292 people was selected. Each variable was assessed by questionnaire. The questionnaire was designed in two parts; the first part was devoted to personal properties such as age, gender, education level, etc.; while the second one included 60 author-synthesized questions. The questionnaire was scored by Likert five-point scale. Apparent and content validity was used to assess validity of the questionnaire. Reliability of the questionnaire was evaluated by Cronbach's alpha coefficient. To analyze the results and information, descriptive statistics such as central tendency indices (mean median, mode, percentage, frequency, table and related graphs) and inferential statistics including Kolmogorov-Smirnov test, one sample t-test, Friedman test, factor analysis, DEMATEL technique and fuzzy entropy technique were used. According to the results of one sample t-test, privatization, sport facilities, rules and regulations, planning and human resources, financial resources and media had influence on extension of public sports in Tehran province. Regarding variables interrelations pattern achieved by DEMATEL technique, it was revealed that financial resources had the highest influence, followed by privatization, sport facilities, planning and human resources.

**Keywords:** public sports, sport extension, DEMATEL.

## 1. INTRODUCTION

In the current era, sport plays multiple roles in various areas. Sport plays its role in human health, spending leisure time in a healthy and pleasurable way, training and education especially for youth, creation of healthy social relations, prevention of diseases and avoiding many ethical and social corruptions. Indeed, the people's motivation for participation in athletic activities is not achieving enhanced degrees and Olympic motto (faster, higher, stronger); rather, the main motivation for people is to achieve health, enjoyment, social relationships and to prevent from diseases (Mirghafouri *et al*, 2008).

According to Larsen, Danish people tendency to public sport is higher than that of professional sport or even higher than watching sport matches (Mayteh and Fetz, 2001). According to British public sport association, during the last 25 years in English, participation trend to special and professional sports and tendency to participate in competitive games have declined and on the other hand, the tendency for participation in recreational sports have been increased. Moreover, participation in these activities is encouraged by seeking for health and physical fitness and the issue plays important role in middle age and elderly life and has been a part of life (Kolt *et al*, 2004). According to Sasakawa, achieving health is the main motivation for Japanese people to participate in public sport (Maltbay and Di, 2001). Evert and Sutton believe that people motivation for participation in public sport in United States includes physical fitness, sociality, excitement, obtaining experience from the nature and avoiding from ordinary tasks (Seddigh Sarvestani, 1994). Bierstead expressed that participation of German women in public sport is higher than that of men; and they take part in such sport only for achieving physical fitness (Smith *et al*, 1998). Investigating the motivation of young people participating in competitive and recreational sports, Malt and Futz found out that enhancement of skill, physical fitness and competition are the most important motivations for both groups (recreational sports association, 2004). Other authors such as Eving and Sifeld and Stadlis *et al* have expressed enjoyment and recreation as the main reason for participation in public sport. Particularly, Eving and Sifeld showed that 83% of participants of public sport want to be a member of team or play in the team albeit they are loser. Thus, the main motivation for participating in public sports is internal motivations such as challenge and enjoyment (Larsen, 2002).

Traditionally, daily life is composed of four main parts namely work, meeting physical requirements such as sleep, food and so on, daily duties of the person about family and friends, sport and leisure time or remaining time for mental relaxation (Honey and Bourne, 2000; Mull, 1997). In this regard, healthy recreation is a positive usage of leisure times and sport is a type of healthy recreations. Healthy recreation is a kind of spending leisure time in which, the activity and its consequence depends on the person himself. According to sociology dictionary, healthy recreation is any type of activities during leisure time which is enjoyable and self-motivated and is performed freely (physical training organization of Iran, 2004). History reflects human intrinsic tendency to physical activities. There was no organized plan for physical training in primitive societies or in old culture of eastern cultures. However, physical activities were an indispensable part of daily life of those people and healthy, strong and trained body was an apparent property of them. Their physical

activities were hunting, attempts for food gathering, shelter establishment and protecting themselves and their families against the dangerous environment.

Public sport and investment on it is a major challenge for all governments in the third millennium, so that vast benefit of this sport type has encouraged the politicians to extend it for gaining more benefits. Thus, all organizations have to take on strategic management. Strategies are sometimes defined from power perspective and sometimes, they emerge to overcome the problems. To achieve the ability to face the special situations, it is necessary that organizations' strategies and their importance be studied. Moreover, it is inevitable to get aware about the way of making strategic decisions and the ways that make them effective (Ghofrani, 2008). These considerations show that in every organization, there is a responsibility field not included in other fields of professional managements; and this is strategic management. Strategic management is established to determine the way and achieve the goals, and also to create a medium accompanied by shared commitment on programs and movement toward success. It should be mentioned that comprehensive study of public sport development conducted by physical training organization in 2002 indicated that about 10% of country people have underwent this type of sport; however it was explicitly expressed in this study that there has been no comprehensive investigation regarding this kind of sport and there is no exact statistics about the number of people who perform this sport (Strategic program of physical training, 2003). Public sport has not been paid as much attention as paid for professional sport, so there is no doubt on the necessity for paying attention to this types of sport either by government or by public; however it is not exactly clear why Iranians, compared to people of other countries, are not so eager to public and recreational sport and no national survey has been made to reveal this situation.

Ignoring the factors affecting various social phenomena will undoubtedly result in social damages. Public sport and investment on it is a major challenge for all governments in the third millennium, so that vast benefit of this sport type has encouraged the politicians to extend it for gaining more benefits. Thus, all organizations have to take on strategic management. Strategies are sometimes defined from power perspective and sometimes, they emerge to overcome the problems. To achieve the ability to face the special situations, it is necessary that organizations' strategies and their importance be studied. Moreover, it is inevitable to get aware about the way of making strategic decisions and the ways that make them effective (Ghofrani, 2008).

Tax strategies have been taken by Canada government for development of public sport and higher participation of people in athletic activities. Moreover, organizations supporting the athletic activities are awarded by tax exemptions. These incentives are given in both professional and public sports, but their weight is higher in the latter.

In Tehran province, 1127 women and 85 men are active in public sport. Now the question rises as what is the efficient model for extension of public sport in Tehran province?

## **2. METHODOLOGY**

Since the main goal of this investigation was to propose an efficient model for extension of public sport in Tehran province, thus this is an applied study; regarding the fact that library and field study methods were used in this investigation, this is descriptive survey. In Tehran province, 1127 women and 85 men are active in public sport, totally account for 1212 people. 292 persons were selected by Cochran formula as the sample. Data were collected by interviewing with managers of youth and sport offices, managers of public sport offices and also by questionnaire and documents of public sport which were obtained from general office. An author-synthesized questionnaire including 60 items and Likert five point scale was used in the present study. Primary reliability of the questionnaire was estimated by submitting the questionnaire to 20 experts whose work is similar to the present statistical sample and then, Cronbach's alpha coefficient was calculated. The reliability coefficient of the questionnaire was calculated by SPSS software as  $\alpha = 95\%$ . Data were analyzed by descriptive and inferential statistics. After extraction and classification of the data, indices such as mean, standard deviation, frequency and percentage were calculated using SPSS (ver.16.5) software for describing the data; and inferential tests including Kolmogorov-Smirnov test, one sample t-test, Friedman test and DEMATEL technique were performed as well.

## **3. RESULTS**

Privatization has influence on extension of public sport in Tehran province:

Significance value was calculated as 0.001 which is lower than error level (0.05). So, null hypothesis is rejected. Moreover, upper and lower limits of confidence interval were higher than zero (positive); regarding the numerical value was higher than 3, the investigation claim is approved. Thus, it can be expressed that

privatization has influence on extension of public sport in Tehran province ( $p < 0.05$ ).

Sport facilities have influence on extension of public sport in Tehran province:

Significance value was calculated as 0.021 which is lower than error level (0.05). Moreover, upper and lower limits of confidence interval were higher than zero (positive) and since the numerical value was higher than 3, null hypothesis is rejected. In the other words, it can be expressed that sport facilities has influence on extension of public sport in Tehran province ( $p < 0.05$ ).

Rules and regulations have influence on extension of public sport in Tehran province:

Significance value was calculated as 0.001 which is lower than error level (0.05). So, null hypothesis is rejected. Moreover, upper and lower limits of confidence interval were higher than zero (positive); regarding the numerical value was 3.657 which is higher than 3, the investigation claim is approved. Thus, it can be expressed that rules and regulations has influence on extension of public sport in Tehran province ( $p < 0.05$ ).

Planning and human resources have influence on extension of public sport in Tehran province:

Significance value was calculated as 0.001 which is lower than error level (0.05). Thus, null hypothesis is rejected. Moreover, upper and lower limits of confidence interval were higher than zero (positive); regarding the numerical value was higher than 3, the investigation claim is approved. Thus, it can be expressed that planning and human resources has influence on extension of public sport in Tehran province ( $p < 0.05$ ).

Financial resources have influence on extension of public sport in Tehran province:

Significance value was calculated as 0.003 which is lower than error level (0.05). Moreover, upper and lower limits of confidence interval were higher than zero (positive) and the mean numerical value was higher than 3, thus null hypothesis is rejected. Therefore, it can be expressed that financial resources has influence on extension of public sport in Tehran province ( $p < 0.05$ ).

Media have influence on extension of public sport:

Significance value was calculated as 0.003 which is lower than error level (0.05). Moreover, upper and lower limits of confidence interval were higher than zero (positive) and the mean numerical value was higher than 3, thus null hypothesis is rejected. Therefore, it can be expressed that media have influence on extension of public sport in Tehran province ( $p < 0.05$ ).

**Table 1. Results of one sample t-test**

| Hypothesis                   | t-value | Mean  | Significance level |
|------------------------------|---------|-------|--------------------|
| Privatization                | 34.222  | 4.040 | 0.001              |
| Sport facilities             | 11.788  | 3.493 | 0.021              |
| Rules and regulations        | 21.053  | 3.657 | 0.001              |
| Planning and human resources | 22.782  | 3.904 | 0.001              |
| Financial resources          | 17.868  | 3.602 | 0.003              |
| Media                        | 17.868  | 3.602 | 0.003              |

#### **4. INVESTIGATING THE RELATION PATTERN AMONG THE VARIABLES USING DEMATEL TECHNIQUE**

After identification of factors affecting public sport extension, the relations among them were determined. DEMATEL technique was used to demonstrate the relation pattern among the main criteria of public sport extension. Results indicated that financial resources had the highest influence, followed by privatization, sport facilities and planning and human resources. Media had the lowest impact on the other criteria.

Furthermore, privatization was highly influenced by other variables; while rules and regulation was not much

affected by the others. Privatization had the highest level of interaction with other criteria, followed by sport facilities, rules and regulations, planning and human resources and financial resources. Media had the lowest interaction with other criteria. In this model, privatization, sport facilities and planning and human resources were effect variables; whereas planning and human resources, financial resources and media were cause variables.

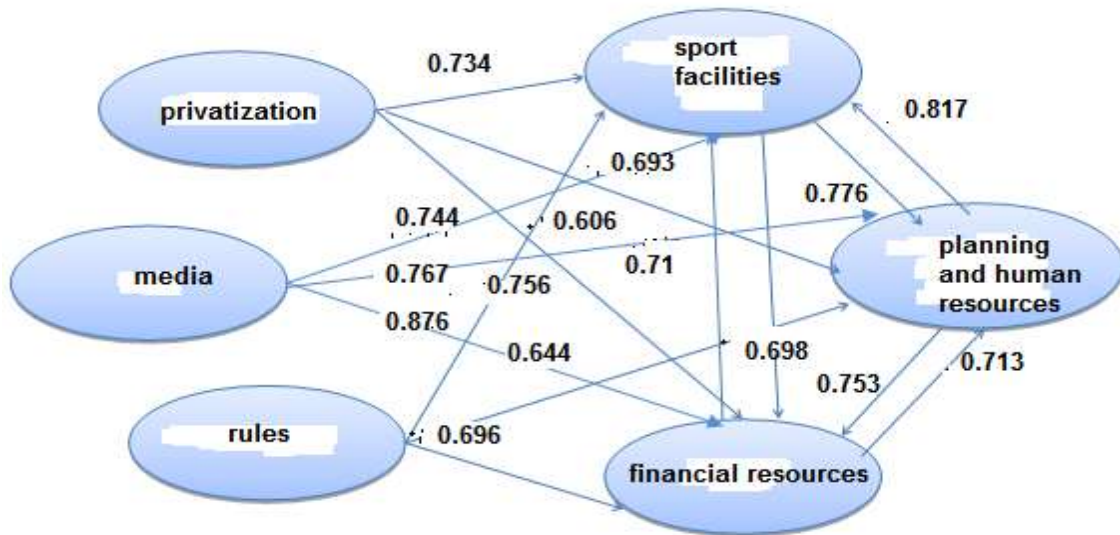


Fig. 1: Internal relations patterns of the main criteria of public sport extension model.

According to relations pattern, cause graph can be drawn based on table 2.

**Table 2. Cause-effect relation pattern of main criteria of public sport extension model.**

|                              | D    | R    | D+R  | D-R   |
|------------------------------|------|------|------|-------|
| Privatization                | 4.32 | 4.68 | 8    | -1.36 |
| Sport facilities             | 3.81 | 3.95 | 7.76 | -0.13 |
| Rules and regulations        | 3.43 | 3.09 | 7.52 | 1.34  |
| Planning and human resources | 3.87 | 4.07 | 7.94 | -0.19 |
| Financial resources          | 4.90 | 3.55 | 7.45 | 0.35  |
| Media                        | 3.75 | 3.17 | 7.32 | 0.28  |

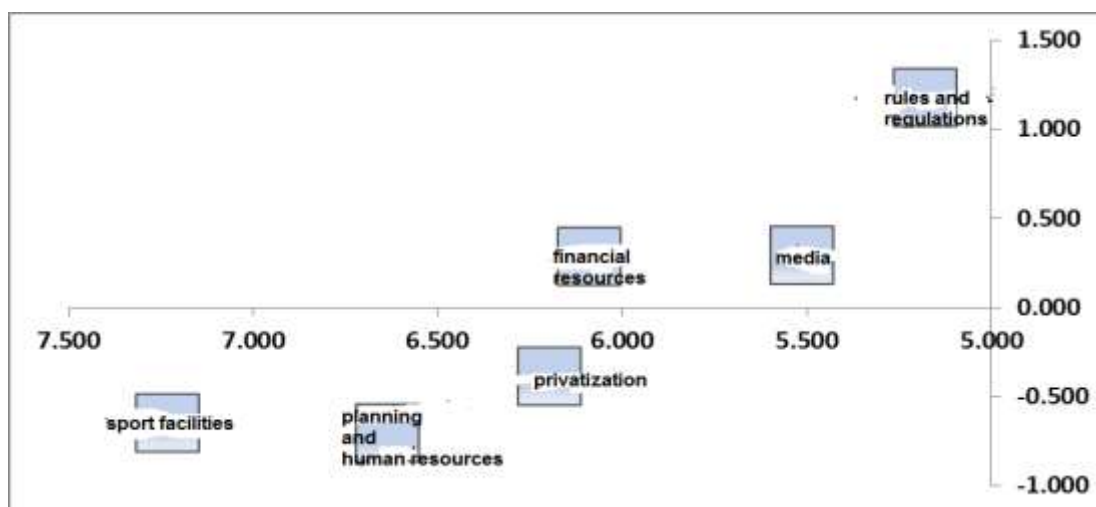


Fig. 2. Pattern of cause relationships for main criteria of public sport extension model.

#### **4. DISCUSSION AND CONCLUSION**

An important aspect of sport is its publicity or public sport. The so called "sport for all" or "public sport" movement was established to enhance participation of all social groups and to provide sport pluralism, fortify professional sport, competitive sport, healthy recreations and recreational sport. Moreover, public sport brings health and enjoyment the society and plays important role in favorable functions such as enhancement of empathy, fortifying social collaboration, enhancing social relations and assisting in socialization process. Enhancement of social relationships has been a main goal of public sport extension among the countries since 1900's. Participation in physical activities significantly reduces the rate of helpful and harmful drug application and help in people health. Active life and health retention are interrelated and it is well documented that by reduction of recreation costs, the costs of health care and medication is increased. In the other word, participating in healthy recreational activities reduces health care costs. It should be mentioned that high cost of health care and medicine is not only resulted from low rate of recreation costs; other factors are involved. However, it can be expressed that participation in recreational and sport activities can highly provide society's health. Enhanced public health can itself reduce health care costs. Sport and physical activity for young people provides a positive life trend and self-sufficiency and prevents corruptions such as alcohol use, drugs and smoke, aggression and violence. Physical activity teaches a person to undergo a healthy life and fortifies team working spirit among the people. Across various countries, profit gained by amateur sport and the number of new resulting jobs is very high and the users spend a great deal of money in sport. There is an enormous attempt in these countries for enhancing people participation to commercialize the sport. In this regard, they received money from people for offering services and on the other hand, they both create new jobs and help publicity of sport by developing supporting systems for clubs and private sector. Public sport is a popular field which can be performed in all sport-recreation places such as parks, stadiums, sport stations, sea beaches, and rivers and so on individually or as a team sport under supervision of experienced coaches. Since public sort covers diverse fields and can be done both indoor and outdoor, people can easily participate in these fields. Thus this sport can highly influence health, freshness and healthy life of the persons. The sport fortifies all the muscles, physical power, strength, flexibility and enhances people spirit. These kinds of sports prevent lipid and blood glucose. Other benefits of this sport include its influence on mental calm and people resilience against problems and events. The duty of group media is to try to create correlation, thoughts exchange, excitements and enhancement of cultural indices together with forming general thoughts about different social issues. Television plays important role due to its wide coverage compared to other media. As a phenomenon with global impacts, TV sport has brought out many changes in activities, technologies, general applications, incoming and development during recent years. Sport extension is a goal sought by sport media. Extension means a movement toward better status which never ends up because there is always condition for being better. Like other courses, sport extension occurs in various ways. Various aspects of sport extension have been considered in comprehensive program of national sport extension including sport components, financial resources, human resources, legal media culture, sport science, facilities and equipment. According to one sample t-test, privatization, sport facilities, rules and regulations, planning and human resources, financial resources and media have influence on extension of public sport in Tehran province.

Based on the results of variables relation pattern obtained by DEMATEL technique, it was revealed that financial resources had the highest impact, followed by privatization, sport facilities, planning and human resources. Media had the lowest effect on the other variables. Furthermore, privatization was highly influenced by other variables; while rules and regulation was not much affected by the others. Privatization had the highest level of interaction with other criteria, followed by sport facilities, rules and regulations, human resources and financial resources. Media had the lowest interaction with other criteria. In this model, privatization, sport facilities and planning and human resources were effect variables; whereas planning and human resources, financial resources and media were cause variables.

Based on two sample independent t-test results, the difference between females' and males' viewpoints regarding privatization and sport facilities was significant. Based on the observed mean, it can be concluded that men have more effective vision about privatization. However, the difference between females' and males' viewpoints regarding rules, planning and human resources, financial resources and media was not significant. Thus, there is no reason to reject null hypothesis which presses that men and women have similar vision on rules and regulations. Moreover, respondents' vision based on age, education level and work experience in four different groups regarding investigation hypotheses was not significantly different. The results obtained in this study is in agreement with those reported by Safania (2001), Shiri (1997), Ramzani Khalilabadi (1994), Kashef (2000), Arbatani (2007), Ameri and Mohammad Algh (2012), Liu *et al* (2009) and Namratu (2009).

## **REFERENCE LIST**

- Ghofrani, M., (2008). Planning and setting public and professional sport strategy in Sistan and Baluchistan province, PhD dissertation, University of Tehran.
- Honeybourne, J., Hill, M., Moors, H., (2002). Physical education and sport study, Stanley Thornes 2th Ed.
- Kashef, M., (1996). Studying public sport status in Iran and related recommendations, 4th national conference on sport science and physical training, Guilan University.
- Larsen, K., (2005). Effects of professionalisation and commercialion of elite sport for All sport Consumption in Denmark. Published by centre for leisure & sport research. Leeds Metropolotan University.
- Mull, R., (1997). "Recreational sport management, human kinetics, pp: 202.
- Ramezani Khalilabadi, G., (1994). Investigating motivations of persons participating in Tehran public sports, MSc dissertation, University of Tarbiat Moalem.
- Roshandel Arbatani, T., (2007). Determining public media position in embedding public sport across the country. Strategic document of national sport and physical training comprehensive program; studying public and recreational sport extension, Rad Samaneh Corporation.
- Safayian, A, M., (2001). The way of spending leisure times among female students in Zanjan universities by emphasizing the role of physical training, Azad University, Central branch of Tehran.
- Shiri, B., (1997). Investigating motivations of persons participating in public running of Tehran municipality, University of Tehran.