Measuring efficiency of provincial offices of Iran's Ministry of Youth Affairs and Sports

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ABSTRACT

The main objective of this study was to determine efficiency of provincial offices of Ministry of Youth Affairs and Sports from 2009 to 2011 using nonparametric method of data envelopment analysis and study its relationship with input resources and outputs of these offices. For this purpose, nonparametric method of data envelopement analysis (DEA)was used. The applied inputs and outputsfor determiningefficiency level of general offices were determined using experts' opinions and five-scalefuzzyrange. The inputs included employees, budget and sports capitation of the province. The outputswere activities of general offices in association withpublic sports, championship sports, sports training, sports construction, sports events and active sports boards. Then,the checklist related to the research input and output was prepared and sent for the general offices. 28 provinces sent their own data, which were analysed using output-oriented CCR model within DEA. The results showed that, in 2009, 16 general offices (57%)had global efficiency. In 2010 and 2011, 17 (60%) and 15 (53%)general offices had global efficiency, respectively. The results demonstrated no significant relationship between the inputs used by general offices and their efficiencylevels. Among the research outputs, "public sports" and "active sport boards" had a significant relationship with efficiency degree of general offices. Regression analysis showed that "active sports boards" was a valid predictor for the efficiency of general offices.

Keywords: efficiency, DEA, general offices, inputs, outputs
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INTRODUCTION

Limitation of resources and facilities during history has forcedhumans to do their best to obtain maximum results from minimal available resources and tools. This result can be called obtaining higher productivity and efficiency[1]. The condition for success in a world which is full of competition, market development, business development and emergence and promotion of superior technologies is utilization from opportunities, facilities and resources [2]. In this context, the main objective of each organization is to achieve effectiveness and efficiency. The simplest and most general definition of efficiency and effectiveness was presented by Peter Drucker (1973); he defined effectiveness as "doing right things"and efficiency as"doing things right" [3]. Productivity is sum of effectiveness and efficiency and every manager wishes to maximize productivity of his/her organization. One of the definitions for efficiency is as follows: "efficiency indicates the concept that how well an ortanization can use its resources for production relative to the best performance in a period of time"[4]. Efficiency of an organization increases as a result of efficieint use of resources (manpower, materials, money, time, etc.) [5]. The necessity for better use of resources and faciloties has made existence of evaluation systems in organizations inevitable so that lack of such a system in different dimensions including performance measurement in using resources, facilitites, goals and strategies of managers and staff of an organization is considered a symptom of the organizational disease

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[4,6]. Performance evaluation as a tool for performance management could be a good basis for decision making on different issues in an organization. Generally, it can be said that performance management is to improve current competency of the whole system and make a relationship between competency of people and their actual workfollowed by improving and developing new competencies for coordination with modern technologies in the changing world. Performance management means data analysis for effective decision making and improved organizational performance. Performance management deals with what is directly or indirectly involved in reaching noble goals of organizations. Performance measurement can obtain feedback information needed for clarifying developments and progress motivations and recognizing and identifying problems and issues from the system and delivering to organizational decision makers [7]. Perhaps the simplest definition of performance was presented by Lim (2007): "the steps through which someone or something acts"[5]. In their book entitle "Performance Management", Rafizadeh et al. defined performance as "a person's performance is what s/he leaves behind whicih is separate from purpose" [8]. Also, "the way managers can perform their tasks" is known as managerial performance. In organizations, organizational performance means "the way an organization can fulfill its tasks in an excellent way" [9]. But in the context of public organizational activities, performance is defined as "programs, activities and services that public organizations do based on the needs of the society. Moreover, performance measurement refers to the ways of measuring performance (activity, programs and services) [5]. Nyhan and Martin (1999) defined masuring performance as a "systematic collection and reporting of infromation about efficiency, quality and effectiveness of organizational programs" [10] and Ammons (1995) defined it as "ongoing and organized evaluation of public services provided by public oranizations" [11]. Different studies on performance evaluation of different organizations have followed three approaches in studyingperformance of organizationswhich include efficiency, effectiveness and productivity [13, 12 and 5]. Given the importance of performance and efficiency measurement in organizations, today, managers need a means through which they can identify their situationsrelative to competitors and the environment and take the required measuresforreaching goals of the organization. The issue of measuring performance using scientific techniques has been more studied about industries and factories [1]. However, in recent years, service organizations have also considered measuring organizational performance and efficiency of organizational performance had been also invetsigated in organizations such as health centers [14], educational centers [15], libraries [12], banks [16], etc.One of the essential needs of the society that plays an important role in social development programs is sports and physical education. Achievements in the field of education, health, psychology, sociology, politics, economics, physical education and sports have led sports toward being regarded as a multidimensional concept in the society; also, Ministry of Youth Affairs and Sports (former Physical Education Organization) has been assigned as the authority in terms of sports and all the affairs related to sports and physical education within the country. All general offices of youth and sports (former general offices of physical education)act under the supervision of Ministry of Youth Affiars and Sports in all the provinces [17].General offices of sports in provinces have financial, human and physical resources as inputs of their organizations in order to start their activities. Based on the duty description determinedfor these offices, they provide different services in fields like development and promotion of public sports, championship sports, training sport fields, refree education, hosting and holding sports events, manufacturing and constructing new sports facilities, sending provincial athletes and teams to sports competitions, helping research projects and so on[18]. But the question is, given the allocated resources, how well could these offices utilize such resources in providing sportd services in the province? To be aware of suitability of activities of provincial general offices, an evaluation system is needed to determinethe degree to which available resources and facilities are approperitely appllied for goals of the organization. To this end, today, new techniques are used for evaluating performance efficiency.Different methods presented for measuring efficiency rate of organizations can be divided into two main categories of parametric and nonparametric. First, parametric methods are only applied to the units that have an output; second, they always presume a function as a default [19].In contrast to parametric methods,there are nonparametric methods, the advantage of which is that they do not consider a determined form for production function and work directly using the observed data. The basis of nonparametric methods goes back to the work by Farrell [20]. One of the most applicable nonparametric techniques is data envelopoement analysis (DEA)[21], which is based on linear programming approach introduced by Charnz, Cooper and Rhodes [22]according to Farrell's work. DEA can be used to calculate and compare efficiency of similar decision making units [24, 23 and 21]. When several inputs are used to produce multiple outputs, it is difficult to calculate efficiency rate of the organization. In this case, an appropriate tool for measuring efficiency of the organization is DEA. The widespread popularity of DEA method in contrast to so many other methods is the possibility for investigating complex and sometimes unknown relations between multiple inputs and outputs which exist in these activities [21].

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$$\text{Max } h_z = \frac{\sum_{r=1}^{n} U_r Y_{rz}}{\sum_{i=1}^{m} V_i X_{iz}} \qquad (1)$$

$$\frac{\sum_{r=1}^{n} U_r Y_{rj}}{\sum_{i=1}^{m} V_i X_{ij}} \leq 1 \qquad\qquad j = 1, \dots, P \qquad (2)$$

$$U_r, \quad V_i > o, \quad r = 1, \dots n; \quad i = 1, \dots, m \qquad (3)$$

where Y_{rz} is equal to the amount of the rth output by z[th] DMU, X_{iz} is the ith input used by the zth DMU, Ur is weight of the rth output, Vi is weight of the Ith input, z is the number of studied DMU (organization) and hz is efficiency of the zth DMU (organization).

In general, in this model,efficiency is obtained by dividing total weighted outputs by total weighted inputs. Efficiency of an organization is between zero and one. Two fundamental models are used in DEA for calculating efficiency. The first model is known as CCR model which is the primary DEA model presented by Charnz, Cooper and Rhodes that calculates efficiency by assuming constant returns relative to scale (i.e. change of the output is deteremined by the change made in theinput)[25].Scores of efficiency in CCR are also called global technical efficiency (TE). The second model is known as BCC and was presented by Banker, Charnz and Cooper (1984)[26].This model states that, when output is not constant (while input increases, the output may increase, decrease or not change), BCC model is used. The efficiency produced by BCC model is called pure technical efficiency (PTE), which indicates operational and managerial efficiency of an organization [24, 23 and 21].If a general office has total efficiency (TE), that office is efficient in operational and managerial terms,has desirable size for the resources used for producing the outputsand uses an optmum (not less and not much) amount of input for producing outputs (scale efficiency). This issue is presented according to the following formula in DEA [24, 23 and 21]:

Global technical efficiency = pure technical efficiency × scale efficiency (TE = PTE * SE)

In DEA,there are two types of solutions to improve efficiency of units:
1. Reducing inputs without reducing outputs to achieve a unit on the efficiency threshold. This attitude is called input-oriented performance improvement;
2. Increasing outputs to achieve a unit on the efficiency threshold without absorbing more inputs. This attitude is called output-oriented performance improvement.

Considering the nature of this research which was about general offices of sports in provinces that are considered service organizations with the primary aim of incaresing services to the society (i.e. their objective is to increase outputs, not reduce inputs), the output-orientedCCR model was used in DEA.

Table1:Output-oriented CCR models (27)

CCR output-oriented
$\max E_o = \sum_{k=1}^{k} u_k y_{ko}$
$St \qquad \sum_{k=1}^{K} u_k y_{kj} - \sum v_i x_{ij} \leq o$
$\sum_{i=1}^{1} v_i x_{jo} = 1$
$u_k, v_i \geq \varepsilon \geq o$

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In this model, E is efficiency of the decision making unit (in this research,generalsports officesof provinces), y is the amount of outputs, u is weight of outputs, x is the amount of inputs, v is weight of inputs andΣ indicates the sum.

Today, DEA approaches are largely used in different fields related to sports and physical education. Here, results of some studies on efficiency measurement using DEA are presented. In their studies on football teams that participated in European Championship League from 2003 to 2007, Escuer et al. (2010) used DEA and their results showed that using CRS model, the following teams were efficient in the mentioned seasons: 11 teams in 2003–2004 season, 7 out of 32 teams in 2004-2005 season, 11 teams in 2005-2006 and8 teams in 2006-2007. Moreover, results of scale efficiency showed that scale efficiency rate of the teams was high in the studied seasons[28]. In the research by Mathieu entitled "Efficiency of French football clubs and their dynamic between 2004 to 2007", DEA was used to evaluate efficacy of football teams. In this article, attempts were made to study efficiency and causes of inefficiency in French football clubs. Mean of pure technical efficiency of the teams was 0.93 and mean of scale efficiency was 0.85. Scale inefficiency was the most important reason for the inefficiency of French League [27]. Guzman (2006) studied efficiency of teams in Spanish football league in three seasons using DEA. His results showed that mean of pure technical efficiency (PTE) of the teams was 0.8 and mean of global efficiency (TE) was 0.6, meaning that the teams needed 0.4 reduction in their applied resources. Also, results of scale efficiency demonstrated that Spanish teams had 30% scale efficiency on average, (SE) which meant that they were far from the desired amount [13]. Haas (2004) investigated efficiency of the teams participating in Bundesliga in 1999-2000 using DEA. 4 out of 18 teams participating in Bundesliga were fully efficient;however, his results showed no correlation between efficiency of the teams and their ranking on the Bundesliga chart. His results also demonstrated that most of the Bundesliga teams acted atan appropriate level in terms of scale and the most important cause of inefficiency in German teams was their operational inefficiency (PTE) [23].Moreover, studying the teams playing in the American League (MLS), Haas (2003) concluded that the main cause of teams' global inefficiency was their scale inefficiency and these teams were very high in terms of pure technical efficiency [24]. Barros (2003) investigated efficiency of the government's encouraging programs in training activities of sports organizations in Portugal. To answer this question, Barros used DEA to evaluate efficiency of educational activities in sports using DEA. The training activities conducted by sports federations in Portugal were reviewed between 1998 and 2001. Results of DEA analysis represented that global efficiency between 1998 and 2001 did not improve; in other words, the government's encouraging programs could not move sports federations toward efficiency threshold. The results showed that most of the studied federations could not improve efficiency of their training activites during the studied period [22]. Given the points about issue of efficiency in organizations and considering the important and constructive role of general offices of sports in all the provinces in developing and promoting sports at provinicial level, the present study aimed to respond to the question that whether Iran's general offices of sports in provinces are efficient or not. Also, is there a relationship between the resources used in provential general offices of Ministry of Youth Affairs and Sports and their efficiency level?

Methodolgy
The present study was of correlation typeand field data gathering was followed. In terms of time,since this research was on efficiency of general offices of sports in provinces of Iran from 2009 to 2011, it can be considered retrospective.

Data collection methods and instruments
Determining research inputs and outputs
To determine efficiency rate of general offices of sports using DEA, the first step was to specify the research inputs and outputs. The input data were of the cost type and the output data wereof production type. Given that there has been no research on efficiency of general offices of privinical sports using DEA, first, a questionnaire with five-scale fuzzy range was designed [29] in order to determine the most appropriate input and output indices of general offices by referring to the fourth provincial sports development plan [18] and duty description of general offices. Thirty exprts of this field who had enough working experinecs were asked to express their ideas about the importance of each of these inputs and outputs and their components. Twenty five questionnaires were returned and the results were analyzed usingBojadziev's fuzzy average method[30].In Table 2, linguistic variables and their related fuzzy numbers are presented.

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Table 2: Linguistic variables and their related fuzzy numbers

Linguistic variable	Fuzzy numbers
Completely approperiate	(0.8, 1,1)
Approperiate	(0.6, 0.8, 1)
Medium	(0.3,0.5, 0.7)
Inapproperiate	(0, 0.2, 0.4)
Compeltely inapproperiate	(0, 0, 0.2)

Below, fuzzy average defuzzification method of Bojadziev can be seen.

$$A_{ave} = \frac{A_{1+\cdots+A_n}}{n} = \frac{\left(a_1^{(1)}, a_M^{(1)}, a_2^{(1)}\right) + \cdots + \left(a_1^{(n)}, a_M^{(n)}, a_2^{(n)}\right)}{n}$$

$$A_{ave} = (m_1, m_M, m_2) = \left(\frac{1}{n}\sum_{i=1}^{n} a_1^{(i)}, \frac{1}{n}\sum_{i=1}^{n} a_M^{(i)}, \frac{1}{n}\sum_{i=1}^{n} a_2^{(i)}\right)$$

$$x_{max} = \frac{m_1 + m_M + m_2}{3}$$

Reliability coefficient of the questionnaires was obtained as 0.861. After analyzing the questionnaires using the fuzzy method, appropriate inputs and outputs (with significance level of greater than 0.7) were determined for specifying efficiency of general offices of provincial sports. Table 3 contains informarion related to the research inputs and outputs and their related components.

Table 3: Inputs and outputs of general offices of provincial sports

Research variables		Expressive components for the inputs and outputs
Inputs	Employees	Total employees of general offices and sports offices of cities
	Budget	Sum of current and development budgetof general offices
	Capitation	Sum of indoor and outdoor sports capitation of the province (in square meter)
outputs	Public sports	Ratio of total men and women participating in public sport plans tototal population of the province (in percent)
	Championship sports	1. Provincial athletes participating in national team camps 2. Provincial athletes who are members of national teams 3. Medals obtained by provincial athletes in national competitions 4. Medals obtained by the provincial athletes in international competitions
	Sports training	1.Training coaches 2.Training referees 3.Professional courses for sports
	Constructing sports venues	Increase in capitation rate of indoor and outdoor sports in the province (in square meter)
	Sports events	1- Hosting national and international sports competition 2.Sending provincial sports teams to national and international sports competitions
	Active sports boards	Ratio of the number of active sports boards in the province to the number of cities in the province

After deciding on the research inputs and outputs, the checklist related to collecting data from general offices of provincial sports wasprepared and sent to general offices of youth and sports in 30 provinces under the approval of Protection of Ministry of Youth Affairs and Sportsand in the form of an official letter. Since Alborz province was officially founded in the middle of 2010, information of general office of Tehran province from 2009 to 2011 contained Alborz province's information as well.

Statistical methods
In descriptive statistics, central tendency indices such as mean and standard deviation were used in SPSS software. To determine efficiency of general offices of provincial sports, output-oriented CCR method in DEA was used. Also, DEA Solver software was used to analyzingefficiency ofgeneral offices of provincial sports.

Statistical population
The studied population consisted of 30 provinces and the data related to 2009 to 2011of these provinces were considered. The research checklist was sent as an official letter via Office of Education and Research,Ministry of

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Youth Affairs and Sports to head managers of youth and sports offices in all provinces. 28 out of 30 provinces sent their related data.North Khorasan and Hormozgan provinces failed to fill out and return their checklists .

RESULTS AND DISCUSSION

Table 4 shows statistical description of mean of all the data obtained during three years from general offices of provincial sports.

Table 4: Total mean for the data of general offices of provincial sports

	Employees	Budget *	Sports capitation **	Public sports	Championship sports	Sports training	Constructing sports venues	Sport events	Activesports boards
Mean	459.01	12.140	0.5253	16	5944.8	302.69	0.0633	394.94	14.13
Standard deviation	223.20	7.376	0.1322	4.37	4704.17	286.07	0.0477	140.46	3.95
Minimum	194.33	3.811	0.2917	7.67	604.33	69.33	0.0172	169.67	7.17
Maximum	1036	30.109	0.8610	26.67	19491.33	1551.67	0.2703	713.33	22.03

∗   Budgets of general offices are obtained in billion toman. ** Capitation ofsports space is in square meter.

At this point, after gathering the data related to general offices of provincial sports, their efficiency was calculated using data envelopment analysis.Data analysis for the efficiency of general offices of provincial sports isgiven in Table 5. Efficiency of 1in each model (100 %) means that these offices yielded appropriate outputs given their inputs. So, they were considered the reference set and the rest of offices were compared to them for achieving full efficiency. CCR column represents global technical efficiency.

Table 5: Results aboutefficiency of general offices of provincial sportsin 2009-2011

Row	Provinces	2009	2010	2011	Mean
	Efficiency of general offices in CCR model (TE)				
	East Azerbaijan	0.6984	0.6118	0.7482	0.6861
	West Azerbaijan	1	1	1	1
	Ardabil	0.9838	1	1	0.9946
	Isfahan	0.8850	0.9435	1	0.9428
	Ilam	1	0.9689	0.8704	0.9464
	Bushehr	1	1	1	1
	Tehran	1	1	1	1
	Charmahal and Bakhtiari	0.9163	1	1	0.9721
	Southern Khorasan	0.9026	1	0.9513	0.9513
	Khorasan Razavi	0.8567	0.7383	0.6430	0.7461
	Khuzestan	0.7542	0.7267	0.9287	0.8032
	Zanjan	1	1	0.9648	0.9883
	Semnan	1	1	1	
	Sistan and Baluchestan	0.9891	0.5303	0.4581	0.6592
	Fars	1	0.9282	0.7720	0.9001
	Qazvin	1	1	1	1
	Qom	1	1	1	1
	Kurdistan	1	1	0.9621	0.9874
	Kerman	0.6475	0.7795	1	0.8090
	Kermanshah	0.8013	1	1	0.9338
	Kohgiloye and Boyer Ahmad	1	1	0.7722	0.9421
	Golestan	1	0.9547	0.9414	0.9654
	Gillan	1	1	0.7696	0.9232
	Lorestan	1	1	1	1
	Mazandaran	1	1	1	1
	Markazi	1	1	1	1
	Hamedan	0.7202	0.8707	0.7261	0.7723
	Yazd	0.6831	0.9368	1	0.8733
	Mean	0.9227	0.9282	0.9109	0.9206
	SD	0.1182	0.1291	0.1394	0.1023

In 2009, out of 28 general offices, 16 provinces (West Azerbaijan, Bushehr, Fars, Golestan, Gilan, Ilam, Bushehr, Kohgiloye and Boyer Ahmad, Kurdistan, Lorestan, Markazi, Mazandaran, Qazvin, Qom, Semnan, Tehran and Zanjan) were efficient in CCR model and their efficiency was obtained as 1 (100%) (57% of all the general offices hadglobalefficiency). In 2010,out of 28 general offices,17 cases were efficient in CCR model (60% of these general

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offices hadglobalefficiency). In 2011, 15 general offices were efficient in CCR model (53% had global overall efficiency).

The relationship between three year means of inputs and outputs of general offices of provincial sports and youth affairs and mean efficiency of general offices was studied from 2009 to 2011.According to the assumption of normality of mean distribution of inputs and outputs and also mean scores of CCR efficiency approved byKolmogorov-Smirnov test, Pearson's correlation test was performed.

Testing the research hypotheses
Results of correlation test showed no significant relationship between general offices and their efficiency (Table 6).

Table 6: Results of correlation test between inputs and outputs and efficiency of general offices

	Inputs			Outputs					
	Employees	Budget	Sports capitation	Public sports	Championship sports	Sports training	Constructing sports venues	Sport events	Active sports boards
Efficiency	r = -0.2 p = 0.308	r = -0.33 p = 0.085	r = 0.047 p = 0.811	r = 0.443 p*=0.018	r = 0.145 p = 0.46	r = 0.132 p = 0.504	r = 0.129 p = 0.512	r = 0.22 p = 0.261	r = 0.593 p** = 0.001

*Significant correlation at $p < 0.05$ ** Significant correlation at $p < 0.01$

Results of correlation test between outputs of general officesand their efficiency aregiven in Table 6. Among the outputs of general offices, there was a significant relationship between two outputs of "public sports" and "active sports boards" and efficiency of general offices. In order to predict efficiency of general offices using two variables of "public sports" and "active sports boards", multivariate regression method with simultaneous entry was used.

Table 7: Results of multivariate regression method to predict efficiency accorindg to variables "public sports" and "active sports boards"

Statistical indicators Regression model	R	R^2	AdjustedR^2	F	Significance level
Simultaneous method	0.628	0.394	0.346	8.142	0.002

The results in Table 7 show significant correlation between the variables "public sports" and "active sports boards" and efficiency of general offices at significance level of p<0.002. Also,the hypothesis of predictibality of efficiency rate of general offices using variables of "public sports" and "active sports boards" was confirmed. Determination coefficient (R^2) obtained in Table 7 demonstrated that 0.394 of the variations in efficiency can be explained using variables "public sports" and "active sports boards".

Table 8: Regression coefficients of predicting efficiency using variables "public sports" and "active sports boards"

Criteria variable	Predictive variables	Level of B	Level of β	Level of t	Significance level
Efficiency of general offices	Constant coefficient	0.654	-	9.364	0.000
	Public sports	0.005	0.229	1.328	0.196
	Active sports boards	0.013	0.494	2.858	0.008

The results in Table 8 demonstrated that, out of the two variables "public sports" and "active sports boards", only the latter could significantly predict "efficiency" of general offices and the former coud not significiantly predict efficiency of genral offices of provincial sports. The regression equation predicting efficiency of provincial general offices was as follows.

"Active sports boards" $\times$ 0.013 + 0.654 = efficiency of provincial general offices of Ministry of Youth Affairs and Sports.

DISCUSSION AND CONLCLUSION

Provincial general offices of Ministry of Youth Affairs and Sports are the most important sports organization among the provinces which are responsible for developing and promoting sports in the provinces. Provincial general offices should work based on the programs and duty descriptions obliged by Ministry of Youth Affairs and Sports to

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develop and promote sports at provincial level. In this study, effeciency of these offices was studied from 2009 to 2011. To this end, according to the experts of the field, three variables of employees, budget and capitation of sports spaces wereselectedas the inputs usedbygeneral offices. Variables ofpublic sports, championship sports, sports training, constructing new sports venues, sports events and active sports boards were selected as outputs of the general offices (and results of activities of these offices).In this investigation, global efficiency (TE) of general offices was measured using CCR model in DEA. Results of the study showed that, in 2009, 16 general offices (equal to 57 % of all offices) enjoyed full efficiency; i.e.they were effienct in operational and managerial terms (PTE) and also scale efficiency (SE) [24,23 and 13]. In 2010, 17 general offices (60% of total offices) had full efficiency and were efficient in operational and management as well as scale terms. In 2011, 15 general offices (53%) had full efficiency and wereefficient in operational and management and also scale terms. As studies by Haas (2004,2003), Mathieu (2009) and Gozman (2006) have noted, inefficiency of an organization in one of two types of managerial and operational efficiency (PTE) or scale efficiency (SE) or both leads to full organizational inefficiency [27,24,23 and 13].This point has to be taken into consideration in the general offices of provinces which were inefficient. In other words, these offices had inefficiency in managerialand operational or scale terms or both, which led to their full organizational inefficiency. Meanglobal efficiency of general offices for 2009 to 2011 was 0.9206. During these three years, only 9 general offices of West Azerbaijan, Bushehr, Tehran, Semnan, Qazvin, Qom, Lorestan, Mazandaran and Markazi (32% of all general offices) had perfect efficiency. Given theirresources (employees, budget and sports capitation), these general offices were able to manage desirable outputs in fields of public sports, championship sports, sports training, constructing sports venues, sports events and active sports boards. General offices of youth and sports in provinces of East Azerbaijan, Hamadan, Khorasan Razavi, Khuzestan, Sistan and Baluchestan (equivalent to 18% of the whole offices) lacked globalefficiency in all of the studiedyears. These offices failed to provide desirable ouput given their available resources and were globally inefficientin comparison to other general offices. More research is needed to study reasons of these inefficiencies. Haas (2003, 2004), Mathieu (2009) and Gozman (2006) have concluded in their studies that scale inefficiency is one of the most important reasons of global inefficiency of the teams participatiung in the American (MLS), Spainish and Franch leagues[24,23 and 13]. As mentioned by Haas (2003, 2004), Mathieu (2009) and Gozman (2006), oragnizatios should pay enough attention to the level of input resources they consume because ubdesirable amount of input usage by an organization for producing outputs may lead to globalinefficiency of the organization [27,24,23 and 13].Results of the correlation test showed that the negative relation between the inputs "employee" and "budget" and also total ortganizational efficiency of the general offices was non-significant (Table 6). Also, significant relationship was obtained only between the two variables of public sports and active sports boards and total efficiency of the organization. Therefore,it can be predicted that increasing the two outputs public sports and active sports boards in provincial general offices increased their global efficiency.To predict efficiency of the provincial general offices according to the two variables ofpublic sports and active sports boards, multivariate regression analysis was used. Regression analysis showed that the output active sports boardscouldproperly predict efficiency of the provincial general offices. The results of this research showedthat, with increasing the number of active sport boardsin the province,global efficiency of general offices incaresed. This point can be explained by the very important role of sports boards of proivincesin helping promote and develop different sports fields, holding competitions in the province, holding training courses for coaches and referees, etc.General offices of sports and youth should pay more attention to the increasing number of active sport boards in their provinces. Helping to form sport boards in the province in collaboration with the concerned federations and financial support of active sport boards of the province may increase the number of active sports boards in the province. One of the points that should be considered is that active sport boards typically play an important role in the outputs provided by the provincial general offices which include developing public sports, championship sports, sports training and holding sporting events and this role should be further examined in future studies. The results obtained from this research,which were in agreement with the results by Haas (2003), Gozman (2006) and Mathieu (2009),demonstrated that general offices of youth and sports of those provinces that were globally inefficient should run more investigations on operational and managerial as well as scale efficiency in order to determine the main source of their global inefficiency. Then, considering the type of inefficiency, appropriate solution should be presented for increasing efficiency of general offices of youth and sports in these provinces. Other studies have also pointed out that there are two main ways to increase globaleffiicncy of general offices of sports and youth [27, 24 and 13].One of thesemethods is to increase efficiency of general offices in converting the applied inputs to desirable output (PTE); in other words, general offices should attempt to produce maximum outputs (public sports, championship sports, sports training, constructing sports venues, sports events, active sports boards) from their available inputs (employees, budget, sports capitation) through improving their managerial plans and operational

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procedures. The second method is precision in allocating resources to these offices. The inputs assigned to each office should be based on needs of the general office and budget of general office is very important in this regard.

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