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# Identifying and Prioritizing Indicators of Performance Evaluation of Nonprofit Educational Institutions with Hybrid Approach of BSC and ANP and DEMATEL

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## ABSTRACT

Regarding the important role of educational institutions in educating suitable human resources for society, this research has been conducted to identify and prioritize the indicators of performance evaluation of nonprofit educational institutions (education) with a balanced scorecard approach. After studying theoretical fundamentals of research, 11 criteria and 63 indicators of performance evaluation were identified. In the form of a questionnaire with experts' opinion, 27 indicators with the highest score were screened in the form of 11 criteria and 27 indicators were placed in the framework of the balanced scorecard approach. The causal relationships between the indices were determined using the method of Dimetal and specified by the network analysis process technique, weight and importance of the indicators. The findings of the research showed that in the Balanced Scorecard approach, the criteria of internal and financial processes (first and second priority) are significantly more important than the other two criteria: learning and growth, and customer (third and fourth priority).

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## 1. Introduction

Performance evaluation is one of the most important strategic processes that, while improving accountability, determine the realization of goals and programs of each organization (Maleki, 2009). Therefore, performance evaluation plays a crucial role in the success of organizations, and awareness of performance in all financial and non-financial aspects is crucial for corporate decision making, because financial criteria are not sufficient to guide and evaluate the organization's paths in competitive environments. (Zanjirdar et al., 2010). The method of evaluating balancing while considering financial metrics also considers non-financial metrics (Kaplan & Norton, 2004). Therefore, considering that the performance evaluation is considered an undeniable element in each organization (Cintron and Flaniken, 2012), education as the most important social institution

is included this rule. Considering the widespread and accelerated development of science and technology indicates that the world after transition from various

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revolutions has witnessed an information revolution in which the valuable source of creating wealth and income is knowledge, and the growing importance of it in the knowledge age has shaped the knowledge-based economy (Zahedi and Kheirandish, 2007). At present, achieving a knowledge-based economy is one of the requirements of all countries in the world (Shahnazi et al., 2013). Education and training or investing in human capital is one of the prerequisites of a knowledge-based economy (Stiglitz, 1999). Therefore, in recent decades, by highlighting human position as the most important and most valuable social, cultural and spiritual capital of society, the mission of education has also enjoyed a higher status (Hemmati, 2014). Increasing student population and continuing demand of people for more and more quality education has caused many problems in terms of providing facilities, equipment and budget and instructor and educational space, and so on, so that most governments alone cannot be success in its realization. As a result, one of the ways to improve the quality of school performance in encountering the challenges and upcoming developments is to increase private sector participation (Sarmed, 2015). Accordingly, the expansion of the idea of "knowledge-based economy" and the need to move towards a reduction in dependence on government revenues caused that belief in the privatization policy of education and the expansion of non-governmental schools to be proved more than ever. Therefore, as any other economic activity, "nonprofit schools" as "economic enterprises" are under the influence of the rules and regulations governing the social space, and the neglect of the necessities and the environmental imperfections causes challenges of the survival of life of nongovernmental schools (Madan Dararani, 2013). The problem is that measuring and managing performance is one of the main and most important problems of the organization in non-profit institutes and organizations. Because of the criteria of past performance evaluation, which are often financial and accounting-based criteria, it cannot be evaluate non-profitable and governmental organizations, schools and universities, because, firstly, the purpose of these organizations is not to profit, and secondly, their financial resources is not provided from the sale of goods or services (Nadery et al., 2013). Therefore, the purpose of this study is to identify and prioritize the indicators of performance evaluation of nonprofit educational institutions which, in line with the general objectives of education, have identified the criteria and indicators of the performance evaluation of nonprofit educational institutions (education), and given that nonprofit schools for the continuity of their education center is compelled to attract students and compete with other schools so the competitive environment requires that, in addition to financial measures, other aspects of the organization's performance to be considered, hence, the balanced scorecard approach has been based on a comprehensiveness of criteria and indicators, and given the major weaknesses in most studies in identifying performance evaluation indicators is the ignoring of dependency and the link between indices and considering independence assumption of indices in relation to each other. Therefore, in order to determine the causal relationships among the indicators screened by the experts, the DEMETL technique was used, and since one of the limitations of the DEMETL technique is the failure to achieve the weight of the criteria and the compatibility, the method of analysis of network process was used to determine the weight and importance of indicators for prioritizing.

1-1 Literature and research background

To manage, it should be able to measure. This phrase is one of the key management factors. Therefore, in order to achieve this goal, the discussion of performance evaluation is raised. In evaluating performance, we are aware of the amount of achievement of predetermined goals, we compare our current situation with the past trend, and we measure our status to competitors and identify our weaknesses and strengths in order to repair them (Feiz and Sharifi, 2009). In fact, performance evaluation is an estimate for comparing ongoing activities with organizational goals (Wu et al., 2009). In the performance evaluation system, one of the most frequently used tools is an indicator that plays an important role in improving the performance of the system evaluated. In fact, we will need to identify a set of performance indicators to determine the scope of the services presented and determine how much outputs of these services are effective in achieving the goals. (Nejadi Sajadi and Soleimani Damane, 2014). Therefore, the Balanced Scorecard (BSC) as a performance evaluation framework provides a context that is done with a comprehensive view to the organization's performance with a set of financial and non-financial measures (Milis and Mercken, 2004) and includes four important approaches: "financial performance" and "customer service" and "internal processes" and "learning and growth." The financial aspect tells us that the successful implementation of goals set in three other aspects will ultimately lead to what results and financial achievements. For the selection of goals and measures related to the customer's aspect, organizations must answer two critical questions. First, who are our customers? Secondly, what are our proposed values for them? In the internal processes, organizations must identify processes that, with their superiority, can continue to create value for their customers. When we determine the objectives and measures for customer aspects and internal processes, we immediately see the gap between the skills and capabilities of the staff and the current level of these skills and capabilities. Objectives of learning and growth should be determined in order to fill and cover these gaps and distances (Tabari and Arasteh, 2008). The framework of balanced score approach is in non-profit organizations such as the private sector. But with the difference that the mission of this organization to meet the needs of target customers (those who the organization believes they benefit services) can be achieved and with the proper functioning of internal processes achieve success that this achievement is supported with their intangible asset (growth and learning) and funding, although is not dominant, but explaining goals of stakeholders is important (Kaplan and Norton, 1996). Balanced Scorecard method has attracted a lot of attention by many listed companies in scientific and industrial communities (Barnabe and Busco, 2012) and can also be used in government agencies, universities and non-profit organizations. (Pietrzak, 2014). Educational organizations have also recognized the need to implement a performance evaluation system through a balanced scorecard (Pietrzak et al, 2015), and studies conducted by organizations and training centers indicators this issue. Alipour and Nasri (2017), in their research, determined the important aspects of evaluating the performance of universities in line with the perspective of higher education using a balanced scorecard approach and prioritizing the performance evaluation indicators of universities by fuzzy topsis method. Shariati and Afkhami Ardakani (2016) in their research identified and prioritized the indicators of performance evaluation of R & D centers based on a balanced scorecard approach. Following the original extraction of criteria from prestigious scientific sources and interviews with experts, finally, 20 criteria were refined that in ranking of four dimensions of the BSC model, the financial criterion was placed in the first priority and criteria of internal processes in the last priority. Asadi et al. (2014), in their research, presented a model for evaluating the performance of Shahid Sattari University of Science and Technology, which evaluated criteria and indicators based on a balanced scorecard approach through a semi-structured interview. Enayati et al. (2012) in their research

evaluated the performance of Islamic Azad University of Mashhad based on the Balanced Scorecard Approach in five areas (research, finance, growth and learning, customers and internal process). Vermezkar et al. (2016) in their research presented a new model for evaluating the performance of research centers with a balanced scorecard approach. Pietrzak et al. (2015) used the balanced score approach as a tool for measuring the performance of higher education centers. Yukse, and Coskun (2013) used balanced scorecard approach to Turkish schools and concluded that BSC is a performance management system and a strategic management tool for organizations and institutions, and help them to achieve goals. Hung and colleagues (2011) also identified and ranked the performance indicators of universities' educational centers based on the balanced scorecard approach and the network analysis process. The results of the research indicated that the learning and growth is as an influential factor on three other aspects, in addition to the fact that both internal and financial aspects play an important role in evaluating the performance of educational centers. A lot of attempts have been made to measure and evaluate the performance of educational institutions, and each of the researchers has dealt with different aspects of the performance of educational institutions. According to Madsen (2005), the performance of nonprofit schools and educational institutions should go towards a side that fit the needs of students, and since these schools look at parents and students with the customer's vision, then they need to meet the needs and interests and their values and facilities, and Crook (2006) in his research introduces one of the factors affecting the performance of schools as the facilities and infrastructure of schools. Bhunia et al. (2012) consider classroom conditions, the number of classes and the learning and educational environment as important factors. Ching and Rubin (2014) in their research also using the Fuzzy Delphi method identify 35 school performance indicators that according to experts' views, 5 indicators have had the highest score, which included "Students' Achievement: Learning performance in different areas of learning", "Parental satisfaction", "Physical fitness and physical mobility of students," "Reputation of school: Respect of community for school "and" School culture: Attention and care of school staff to students ". Rahmani (2013) studied the effectiveness of schools in Takestan city using the hybrid model of balanced scorecard and data analysis. 25 indicators with the highest score by experts were selected as the main and effective indicators in the performance of schools. Ghasemi et al. (2013) also evaluated non-profit higher education institutions with the help of balanced scorecard and multi-criteria decision making methods. The results of this study showed that the most important criteria in these institutions is the increase of income, reputation, acceptance rate in higher educational levels. According to the studies conducted by domestic and foreign researchers on the performance of educational institutions, in the present study, by reviewing the literature and the background of the research as well as referring to valid documents in the field of education, the criteria and indicators of performance evaluation of nonprofit educational institutions were extracted and refined and categorized in the form of 11 criteria and 63 indicators according to the quadratic aspects of the balanced scorecard approach and by applying the views of university professors and experts, and placed in the framework of the balanced scorecard model, which is presented in Table (1).

Table 1. Summary of the results of research literature in order to identify performance evaluation indicators of educational institutions

Perspective	Criteria	Indicators
Customer perspective	Student	Students' satisfaction from school parents
		Students' satisfaction from teaching method by teachers
		Students' satisfaction from extracurricular classes
		The proportion of educational programs with the characteristics and needs of students
		The frequency of students' assessment from the teachers and the classroom
		Students' leisure time per week
		Average of students
		Number of students accepted in June
	Society	School reputation: Community respect for school
		Parental satisfaction: Student parents' satisfaction from school
		Awards to school: School success in awarding prizes at district, provincial or higher levels
		The number of meetings and programs used to introduce students to the culture and customs of the community
		The percentage of students' participation in cultural and social activities
Internal process perspective	Improve educational and training processes	Number of continuous evaluations of learning-teaching
		Number of classes of students in the year
		Educational innovation: The degree of using varied and active teaching methods by teachers
		Number of initiatives in the preparation of new and supplementary teaching programs
		Number of educational programs per year to teach ethics and values
		Percentage of students active in cultural-artistic groups
		The number of extracurricular classes created for students
	Services	Continuous monitoring and evaluation of staff performance
		Performance evaluation of school affairs: Approval of assessment and evaluation criteria in evaluation of school activities

		Considering student population to the teacher
		Effective reporting in all parts of the school
		Considering discipline in school affairs and activities
		The degree of transparency and clarity of job description and staff job
		The number of articles published by teachers

	Scientific achievements	The quality of books and scientific journals for teachers and students
		Holding exhibition to present achievements and share greater experiences
		Preparing students for the scientific matches and Olympiad
		Number of books written and translated by teachers
		Percentage of inventions and initiative recorded by students
		Establish effective communication with reputable scientific and cultural centers
Learning and growth	Information capital	The amount of teachers and students' access to scientific resources and publications
		The ratio of books and scientific journals quantitatively to each student
		Teachers' access to information technology, appropriate methods in teaching-learning process
		Development and equipping of workshops and laboratories
	Organizational capital	The amount of management ability to diagnose program priorities
		The amount of management power in troubleshooting and identifying educational problems
		The level of participation of experts, staff, parents and students in the design and implementation of school programs and activities.
		The quality of the school's goal setting and school's program strategy
	Human capital	Creating the ground for creativity and innovation in the staff
		Teachers' awareness of the curriculum
		The number of classes and programs to guide and prepare teachers in teaching-learning
		Average education level of staff
		Average hours of in-service training for employees
		The level of job satisfaction of teachers in terms of the amount of income received

		The number of teachers with higher ranks (provincial or national)
		The degree of satisfaction of teachers and employees from welfare conditions
Financial	Budget	Budget allocated to extracurricular activities and in-school activities
		The budget allocated for curriculum and education services
		Budget related to research issues
		Budget related to training issues
		Development budget in year
	Facilities	The amount of sports facilities for each student
		Providing training packages and teaching aids
		Quality of classrooms, facilities and sanitary facilities in terms of facilities, safety and health
		The amount of facilities provided for the school curriculum
		Amount of facility renewal
		Space per capita for each student (sports ground, library, laboratory, prayer hall, class
	Productivity	Estimates of costs and their classification
		The proportion of student expenses with the amount of credits allocated per year
		Allocation of funds to units by considering income-toexpenditure ratio

## 2-Research method

The statistical population of this study consists of 30 experts, which included experts in educational management at public universities in Tehran, they were mainly professors of management and educational management, as well as experts in the field of performance of nonprofit schools in the Ministry of Education. Because the volume of the population of experts is low, there is no need for sampling, and the number of sample members equals the number of members of the population. The method of collecting information in this research was library and questionnaire and referring to documents. The library method included taking notes from books and internal and external publications in order to achieve the theoretical foundations and research background, and the questionnaire method is also described as a data collection tool.

First stage - Questionnaire of identification, screening and categorization of performance evaluation indicators of nonprofit educational institutions based on Balanced Scorecard Approach In this questionnaire after reviewing the literature and research background and considering the quadratic aspect of the balanced scorecard approach, criteria and indicators of the performance evaluation indicators of nonprofit educational institutions were identified, refined and categorized in the form of 11 criteria and 63 indicators by applying the university professors and placed in the

framework of the Balanced Scorecard model (Table 1) and provided to the experts in the form of a first-stage questionnaire. In this questionnaire, the categorization of indicators according to the quadratic aspects of the balanced scorecard model was also questioned by experts. Content validity method was used to determine the validity of the questionnaire. The questionnaire was prepared according to the literature and given to the university professors and the experts. After applying their comments, corrective actions were taken and the final questionnaire was prepared and the reliability of the questionnaire was confirmed by SPSS16.0 software and Cronbach's alpha coefficient and the coefficient was equal to 0.937, indicating a high reliability of the questionnaire. Of 30 people in the population of experts, they all responded to the questionnaire, all of which were capable of analyzing.

Second stage - Questionnaire of determining the causal relationships (DEMATEL method)

In this questionnaire, the screened indices were organized in the matrix in the previous stage and asked respondents to determine the impact of the right- side factors of the matrix on its high factors using the five-degree scale (0 to 4) so that without impact (0), very low impact (1), low impact (2), high impact (3), very high impact (4). The indexes located on the right and the top of the matrix are exactly the same and the comparisons of the elements are paired and the experts' judgment was only questioned for direct communication from elements with each other and 14 experts responded to this questionnaire. All have the ability to analyze.

Third stage - Paired Comparison Questionnaire of analytic network process (ANP)

The questionnaire of the analytic network process was prepared using the relations obtained by Dematel method. This questionnaire was provided by experts as paired comparisons. 13 experts from the population responded to this questionnaire, all of which were able to analyze and analysis was performed using Super Decisions 2.0.8 software.

### 3.Findings

According to the research process, the results of the research are presented by separating each step. 1-3-Identification, screening and classification of performance evaluation indicators by Balanced Scorecard Approach

At this stage, after identifying and categorizing the indicators, according to the data from the first stage questionnaire, using the average of the importance of the indicators with the opinion of the experts, 63 indicators were identified, 27 indicators whose average importance was above 3.5, were selected and placed in the framework of a balanced scorecard by judging experts that can be seen in Table (2).

Table 2: Extracting indicators of performance evaluation of nonprofit educational institutions with Balanced Scorecard Approach

Average view of experts	Indicators	Cod e	Criteria	Perspect ive
3.57	student satisfaction with teaching method	C1	Student Society	Customer
3.83	students' average	C2		
4.07	Student's parental satisfaction from school	C3		
4.2	The number of classes and programs to introduce students with the culture and the society	C4		

4.23	percentage of students' participation in cultural and social activities	C5		
3.87	Number of continuous evaluations of learning-learning	C6	Educational and training processes	Perspective of internal process
3.97	the degree to use diverse and active teaching method by teachers	C7		
3.83	Number of initiatives in the preparation of new and supplementary teaching programs	C8		
3.97	Number of educational programs per year to teach ethics and values	C9		
3.8	Percentage of active students in sports and artistic groups	C10		
4.1	Continuous monitoring and evaluation of staff performance	C11		
4.07	Performance evaluation of school affairs: Approval of evaluation criteria in the evaluation of School Activities	C12		Research achievements
4.17	The student population's compliance with the teacher	C13		
3.6	The number of exhibitions for presenting achievements and sharing of top experiences	C14		
3.83	The rate of effective communication with reputable scientific centers	C15		
4.07	Teachers' access to information technology, methods and tool appropriate with reaching learning process	C16	Information capital	Perspective of growth and learning
3.83	The development and equipping workshops and labs	C17		
3.87	the level of participation of experts, employees, parents and students in the design and implementation of programs and activities of school	C18	Organizational capital	Financial perspective
4.03	Teachers' awareness about the curriculum	C19	Human capital	
3.93	the number of classes and programs to guide and prepare teachers in teaching-learning	C20		
4.1	level of teachers' job satisfaction with welfare conditions	C21		
3.97	Budget allocated for programs and educational services	C22	Budget	Financial perspective
3.97	Budget related to research affairs	C23		
3.97	Budget related to training affairs	C24		
3.8	Sport facilities for each student	C25	Facilities	
3.73	The quality of classrooms, facilities of health, safety	C26		
3.63	Allocation of funds to units considering the income-toexpenditure ratio	C27	Productivity	

2-3. Determination of causal relationships of sub-criteria  
 At this stage, by a survey of experts through the questionnaire of DEMATEL method, the internal and external causal relationships if indicators identified in the previous stage were determined (Table 3).

Table 3: Effect and effectiveness of sub-criteria based on DEMATEL Method

Criteria	Influencing rank				Code of indicators
	R-J	R+J	J	R	
Effect	10	-0.49394	8.328541	4.411239	3.917302 C1
Effect	18	-0.4447	7.661975	4.053336	3.608638 C2
Effect	22	-1.43436	8.016751	4.725554	3.291197 C3
Effect	26	-0.88444	6.736494	3.810467	2.926026 C4
Effect	25	-0.86296	6.999151	3.931055	3.068096 C5
Cause	23	0.371647	6.114247	3.295842	C6
Cause	4	0.273982	8.317703	4.021861	4.29842 C7
Effect	11	-0.12071	7.946119	4.033414	3.912705 C8
Effect	14	-0.14139	7.727331	3.934362	3.792969 C9
Effect	24	-0.28316	6.719373	3.501268	3.218105 C10
Cause	20	0.637067	6.398211	2.880572	3.517639 C11
Cause	1	0.912653	8.463523	3.775435	4.688088 C12
Cause	15	0.425981	6.994013	3.284016	3.709997 C13
Effect	21	-0.3861	7.141742	3.763922	3.37782 C14
Cause	7	0.303323	7.847391	3.772034	4.075357 C15
Effect	17	-0.24362	7.490693	3.867156	3.623537 C16
Cause	6	0.315593	7.968335	3.826371	4.141964 C17
Cause	5	0.295602	8.141159	3.933778	4.218381 C18
Cause	16	0.340834	7.075235	3.367201	3.708034 C19
Cause	3	0.563813	8.138266	3.787227	4.35104 C20
Effect	9	-0.07893	8.06402	4.071474	3.992546 C21
Cause	2	0.472161	8.346666	3.937253	4.409414 C22
Cause	8	0.038592	8.034459	3.997934	4.036526 C23
Cause	12	0.404789	7.40889	3.502051	3.906839 C24
Effect	27	-0.44367	5.980993	3.212334	2.768659 C25
Cause	19	0.165638	6.959366	3.396864	3.562502 C26
Cause	13	0.296305	7.478782	3.591238	3.887544 C27

According to the results of the DEMATEL method, the most effective indicators, respectively, are the "performance evaluation of school affairs", "the budget for educational services", "the number of classes and programs to guide and prepare teachers in teaching-learning", "the degree to use diverse and active teaching method by teachers", and the indicators of "student satisfaction with teaching method", students' average," and the percentage of students' participation in religious, cultural and social activities "and" level of teachers' job satisfaction with welfare conditions as effective indicators.

### 3.3 Modeling the Analytic network process (ANP) to determine the weight and importance of each of the indicators

According to the complete communication matrix, which is the output of DEMATEL method, after identifying the relationships between the indices, the network of this problem is depicted in Super Decision software, as seen in Fig. 1. By identifying all interactions between the indices in the previous stage, a questionnaire of measuring the relative importance of the indicators based on the paired comparison according to the standard of analytic network process was developed and provided to the experts. The weight and importance of the indicators were determined that can be seen in Table (4).

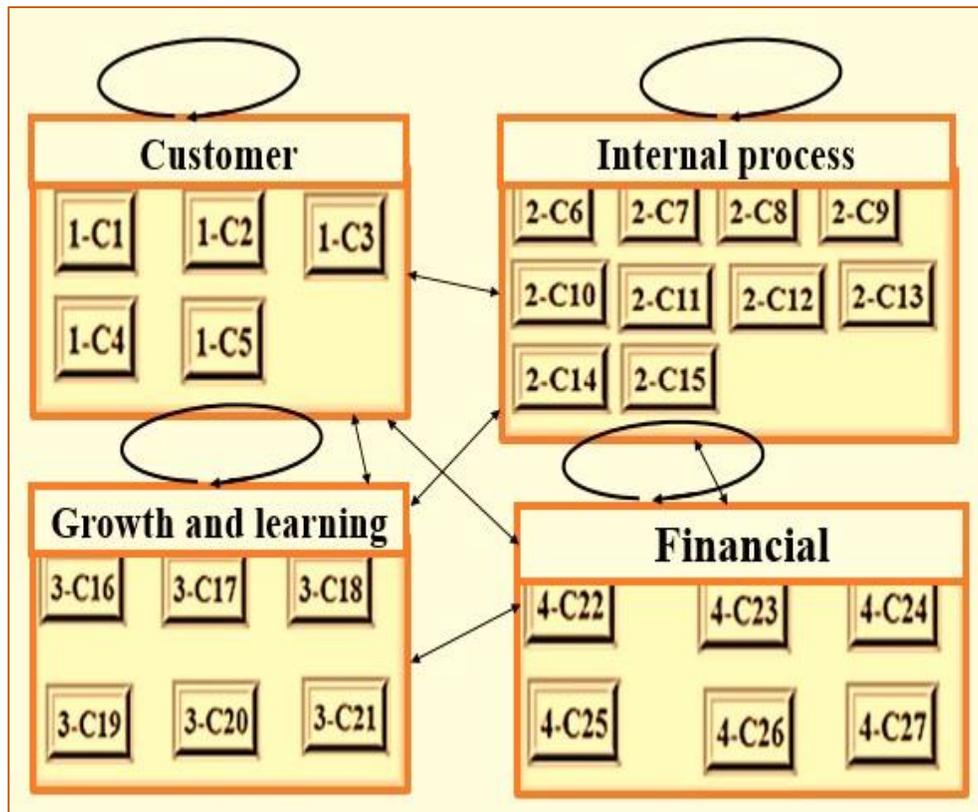


Figure 1. Model of analytic network process

It should be noted that the relationships between the indices within each cluster in the model of the analytic network process in Figure (1) are shown as internal or feedback, as well as external relationships with other clusters through the arrows.

Table 4 - Local and total weight and rank of sub-criteria

Total weight	Final indicators cluster	Final assigned weight each cluster	Rank assigned to each cluster	Weight of indicators	Code of normalized	
0.0543	8	0.041745	1	0.76878	C1	Customer 16
	13	0.005927	2	0.10915	C2	
	17	0.00266	4	0.04899	C3	
	24	0.000932	5	0.01716	C4	
	0.0030363	0.05591		C5		
0.340759	26	0.000075	9	0.00022	C6	Internal process
	2	0.154503	1	0.45341	C7	
	10	0.017258	4	0.05065	C8	
0.264616 and	22	0.001239	6	0.00364	C9	Growth learning 11
	25	0.000327	8	0.00096	C10	
	14	0.0042	6	0.01233	C11	
	5	0.115743	2	0.33966	C12	
	18	0.002215	7	0.0065	C13	
	12	0.00738	5	0.02166	C14	
	9	0.037819	3	0.11098	C15	
0.0075574	0.02856		C21			

0.34326 Financial

4	0.115831	2	0.34035	C23
15	0.003415	3	0.01003	C24
21	0.001343	5	0.00395	C25
23	0.001119	6	0.00329	C26
0.001837	4	0.0054	C27	

According to table (4), the most important indices among the total indices can be investigated and also observed the elements within each cluster, as well as specified the priority of the indices based on the weight in column of total weight. The results show that "the budget allocated for curriculum and educational services" is ranked first in terms of weight and importance among the total indicators, followed by it, the indicators of "innovation in education: The degree of using varied and active teaching methods "" the number of classes and programs to guide teachers and prepare them for teaching-learning, ""budget related to research affairs, ""performance evaluation of school affairs: approval of evaluation criteria and ranking in evaluating school activities "," the extent of participation of experts, staff, parents and students in the design and implementation of school programs and activities, "the extent of developing and equipping workshops and laboratories," the student's satisfaction from how teaching the subject "and" establishing effective communication with reputable scientific and cultural centers "as the most important indicators respectively have allocated the highest weight. The priority for other indicators is also shown in Table (4). Also, the total weight assigned to each of the four main dimensions of the balanced scorecard approach shows that the dimension of internal processes with a total weight of 0.340759 is ranked first. Thereafter, the financial dimension with a total weight of 0.340326 slightly different from the financial dimension is in the second priority, and finally, the growth and learning dimensions and customer, respectively, with the total weight of 0.264616 and 0.05433 are in the third and fourth rank, respectively.

**Conclusion**

The purpose of this study was to identify and prioritize the indicators of performance evaluation of nonprofit educational institutions. In order to consider the different dimensions in evaluating performance of these institutions, the balanced scorecard approach was based on a comprehensive set of criteria and indicators to consider the various aspects of the organization in the assessment and provide complete reports on the performance of educational institutions. Out of 63 identified indicators, 27 indicators that had the highest score by the view of experts were selected and their causal relationships with DEMATEL technique showed that the most effective indicators in terms of effectiveness are "performance evaluation of school affairs," "budget assigned for educational services," "the number of classes and programs to guide teachers and prepare them for teaching-learning," "the degree of using varied and active teaching methods by teachers," and indicators of student satisfaction with teaching method, students' average, and student participation rate in religious, cultural and social activities, and "teachers' satisfaction level of welfare conditions. After specifying all the interactions between the indicators, using the method of analytic network process, weight and importance of the indicators, it was specified that the results showed that the "budget allocated for educational services" is ranked first, in terms of weight and importance, followed by it, indicators of "the degree to use varied and active teaching method by teachers," the number of classes and programs to guide teachers and prepare them for teaching-learning, "the budget for research affairs"," performance evaluation of school affairs"," the level of participation of experts, employees, parents and students in the design and implementation of

programs and activities of school ", " The development and equipping workshops and labs", " students' satisfaction from how teaching method of subject" have allocated the highest weight. The high importance of the "budget for educational services" and "performance evaluation of school affairs" is aligned with the results of Uxel & Kasken's research (2013). Findings of the research also showed that in the balanced scorecard model, the dimensions of internal and financial processes (first and second priority) have allocated greater importance than the other two dimensions: learning and growth and customer (third and fourth priority) and such a result is not far from the mind, because the criteria in the dimension of internal processes in this research include educational and training processes, services and scientific achievements which is aligned with the school curriculum in the horizon of 1404 in the document on the fundamental transformation of education with progressive features, policies and priorities for communicating on the quality of education of schools, and on the other hand, in the financial dimension, with the criteria for providing facilities and budget, the context is provided to meet these goals. According to the results of the research, the perspective of internal processes with the criterion of educational and training and research processes plays an important role in the performance evaluation of educational institutions, which also the results of research by Hung et al. (2011) and Ahmadvand et al. (2011) confirm this subject.

Since "student satisfaction from how teaching method of subject" in the customer's perspective and "innovation in education by teachers" in terms of internal processes and "guiding teachers and preparing them in the teaching-learning process" in the perspective of growth and learning, and "budget allocated for programs and educational services in the financial perspective" allocated the first rank of importance, so it is suggested that in order to improve the performance in educational institutions and achieve the goals of the school as the mission's context and objectives of the education system, the necessary infrastructures, such as providing required budget for educational purposes, as well as directing teachers and preparing them for the learning-teaching process and increasing their skills in applying the various and active teaching methods as well as satisfaction of the students should be considered. Also, through performance evaluation indicators identified, performance in educational institutions should be evaluated.

#### **4. Resources**

1. Ahmadvand, Ali Mohammad and Tarbati, Amir and Pourreza, Nasser (2012). The conceptual model of performance management and strategy formulation using BSC and EFQM. "Two Quarterly Journal of Human Resource Management Researches at Imam Hossein University (AS), Year Fourth, Issue One, Spring and Summer 2012, pp. 86-55
2. Alipour, Alireza and Nasri, Faramarz (2017). Investigation and Analysis of Educational Performance Indices of University of Marine Sciences by BSC-TOPSIS, Journal of Marine Science Education, Summer 1999, No 6, Pages 60-45
3. Asadi, Ismail and Zakeri, Mohammad and Zeraati, Mohsen and Vosoughi Nyri, Abdollah (2014). The performance evaluation model of Shahid Sattari University of Aerospace Science and Technology based on Balanced Scorecard Technique, Quarterly Journal of Human Resources Studies, Vol. 4, No. 14, Winter 2014, pp. 177-151.

4. Barnabe, F., & Busco, C. (2102). The causal relationships between performance drivers and outcomes: reinforcing Balanced Scorecards' implementation through system dynamics models. *Journal of Accounting & Organizational Change*, 8(4), 828–838
5. Ching Shan Wu, Robin Jung-Cheng Chen (2014) "KPIs (Key Performance Indicators) in Taiwan Basic Education" *Journal of Modern Education Review*, 4)8(, 565–578
6. Cintron .R & Flaniken .F (2102). Performance Appraisal: A Supervision or Leadership Tool, *International Journal of Business and Social Science* Vol. 2 No. 01,31-22
7. Crook ,Jeffrey Ray.(2112). The Relationship between the Percentage of Students. Passing the Standards of Learning examinations and the Condition of the Educational Facilities in the High Schools in the Commonwealth of Virginia. . PhD Thesis. Virginia State University
8. Enayati, Gholamreza and Taheri Lari, Masoud and Jiani Rezaei, Hamed and Vajdi, Hamid Reza and Ghaffari, Hassan (2012). Evaluation of Performance of Islamic Azad University of Mashhad Branch Based on Balanced Scorecard, *Scientific Research Journal of Tomorrow's Management*, No 30, Spring 2012, p. 106-83
9. Evaluation indicators of the education system, approved by the 700th and 60th session of the Supreme Council of Education, (November 23, 2005), Tehran: Secretariat of the Supreme Council of Education (2007). 10. Felter, Mark (0224), "School Performance Reports" *Education Policy Analysis Archive*, Vol.2, NO 03, pp.00-01
11. Feyz, Davood and Sharifi, Navid (2009). Designing a Conceptual Model for the Assessment of the Islamic University Using the Balanced Scorecard Model (BSC), *the Journal of Culture at Islamic University* 42, No. 2, Summer 2009, pp. 46-27
12. Ghasemi, Ahmad Reza and Ahmadi, Seyyed Hossein (2012). "Evaluation of Higher Education Institutions with the help of Balanced Scorecard and Multi -Criteria Decision Making Methods", *Journal of Development of Education in Medical science*, V 6, No 10, Spring and winter 2013, p 38-499.
13. Ghorchian, Naderogoli and Ghafourian, Homa (2004). Providing a suitable model for performance indicators of educational managers, *Journal of Economics and Management, Science and Research Branch*, No. 62, Autumn 2004, pp. 32-17
14. Hemati, Borzou (2014), The role of school principals in realizing the goals of the document on the fundamental transformation in education, *International Management Conference*, Tehran, Mobin Cultural Ambassadors Institute, Pages 822-813
15. Hung-Yi Wu, Yi-Kuei Lin , Chi-Hsiang Chang.(2100)." Performance evaluation of extension education centers in universities based on the balanced scorecard" *Evaluation and Program Planning* 34 (2100) 31–81
16. Kaplan, R. S., & Norton D. P., (0222). *The Balanced Scorecard*. Harvard Business School Press, Boston, MA, USA. 18-28
17. Kaplan, Robert and Norton, David (2004). *Strategy-centered Organization*, Translation of Parviz Bakhtiari, Industrial Management Press, First Edition, 2004 p. 25
18. Madan Dar Arani (2013). Semantic Reconstruction of Stop of Non-Governmental Schools: An Underlying Analysis, *Journal of Management and Planning in Educational Systems*, Volume 6, Issue 11, Autumn and Winter 2013, pp. 110-88
19. Madsen, J. (2118). *Private and public school partnerships: sharing lessons about decentralization*. London: Falmer Press
20. Maleki, Mohammad Reza and Nasiripour, Ashkan and Hejazi, Ali and Kakhani, Mohammad Jamil (2009). *Comparative Study of Organizational Performance Measurement in Iran and*

- Developed Countries, Journal of Sabzevar University of Medical Sciences and Health Services, Vol. 16, No. 1, Spring 2009, pp. 49-43
21. Milis, K. and R. Mercken (2114). The use of the balanced scorecard for the evaluation of formation and communication technology projects. Vol 22, 21-81
  22. Naderi, Abolghasem and Hasani, Hojat and Sadeghi, Azam (2013). "Evaluation of School Efficiency Using Data Envelopment Analysis (Case Study of Shahrabak Secondary Schools)". Quarterly Journal of Education No. 115 pp. 32-9
  23. Negaresh, Hamid (2009) Pathology of Islamic Education in Secondary Schools of Qom Province and Management Strategies of Treating it, Cultural Management Magazine, No. 5, Autumn 2009, pp. 59-37.
  24. Nezhad Sajjadi, Seyyed Ahmad and Soleimani Damaneh, Jahangir (2014). Identification and Prioritization of Performance Evaluation Indicators of Iranian Sports Federations Using the AHP Model. Sports Management Studies, No. 23, June and August 2014, pp. 192-179
  25. Pietrzak, M. (2104). Using the strategy map as a strategic communication tool in higher education: A case study of Warsaw University of Life Sciences, Online Journal of Applied Knowledge Management, 2(2), 42-22.
  26. Pietrzak, M , Paliszkievicz, P, Klepacki, B (2108). The application of the balanced scorecard (BSC) in the higher education setting of a Polish university, Journal of Applied Knowledge Management Volume 3, Issue 0, (2108) , 080-028
  27. Rahmani, Abolfazl (2013). "Evaluation of School Performance with Hybrid model of Balanced Scorecard and Data Envelopment Analysis, Challenges and Solutions Management Conference", Shiraz, Jan. 2013
  28. Sarmat, Gholamali (2010). Comparison of the Performance of Governmental and Nongovernmental Girls' High School Management in Tehran, Scientific-Research Journal of Educational Management Researches, No. 2, Winter 2010, Second Year, Pages 116-97.
  29. Shahnazi, Ruhollah and Moazen Jamshidi, Homa and Akbari, Nematollah (2013) The role and position of knowledge-based economy on the formation of special areas of science and technology Case study of Iran's economy, technology growth, quarterly journal of parks and growth centers, No. 36 , Fall, 2013, pp. 10-2
  30. Shariati, Reza and Afkhami Ardakani, Mehdi (2016). Identification and Prioritization of Performance Evaluation Indicators of Research and Development Centers Based on the Balanced Scorecard Model, the Scientific Journal of the Exploration and Production of Oil and Gas, No. 137, October 2016
  31. Stiglitz, J. (2002). Public Policy for a Knowledge Economy, World Bank, Department for Trade and Industry and Center for Economic Policy Research London, U.K. January, 27(1999), 1-28
  32. Tabari, Mojtaba and Araste, Farzad (2008). "Balanced Scorecard Performance Evaluation". (Researcher), Management Quarterly, Vol. 5, No. 12, Winter 2008, pp. 20-12
  33. Varmazyar, M., Dehghanbaghi, M. & Afkhami, M. (2102). A novel hybrid MCDM model for performance evaluation of research and technology organizations based on BSC approach. Evaluation and Program Planning, 88, 28-004
  34. Wu, H. Y., Tzeng, G. H., & Chen, Y. H. (2112). A fuzzy MCDM approach for evaluating banking performance based on Balanced Scorecard. Expert Systems with Applications, 32(2009), 01038–01041.
  35. Yukse, H & Coskun, A (2103). Strategy focused schools : an implementation of the balanced scorecard in provision of educational services (2103). 4th International conference on new Horizons in educational.

36. Zahedi, Shams al-Sadat and Kheir Andish, Mehdi (2007). Explaining Structural Factors in the Knowledge-Based Economy; *Journal of Management Sciences of Iran*, No. 6, Summer 2007, Pages 69-49.
37. Zanjirdar, Majid and Talebi Farahani, Zarrin and Mousavi Basri, Moslem and Louni, Neda (2010). Comparison of Performance and Analytical Systems on Balanced Scorecard as a New Functional Measurement System, *Journal of Business Investigations*, No. 41, June and July 2010, pp. 46-35