

Study of Determining Financial and Operational Performance Appraisal (PA) Indices in Public Institutions

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Abstract

PA systems can be significantly helpful for flexibility of plans, aims, and missions of organizations in the present dynamic world by presenting appropriate models. Therefore, to identify PA and measurement indices as well as apply models appropriate to the status quo of organizations seem necessary. Accordingly, the present study is to investigate PA models available and performable in Iran and the world and to develop and identify financial and operational PA indices in the public sector and municipalities. To determine financial and operational PA models in the public institutions, elites' ideas were extracted via the Delphi method. Then, their ideas were tested via the Fuzzy-AHP. Investigations indicated that the use of the two Balanced Scorecard Model and Organizational Excellence Model outside the country and particularly in Iranian organizations (including private and public ones) enjoy higher and more acceptable uses. Therefore, the researcher decided to organize her research based those two models. The results indicated mixing these two models both at the dimension of financial performance and the dimension of operational performance with this difference that the indices of each model were investigated and developed in terms of the type and nature of investigated organizations.

Key words: PA, Appraisal indices, Financial and operational performance, Public organizations

INTRODUCTION AND STATEMENT OF THE PROBLEM

As for as organizations exert their efforts and need their presence at the national and global fields, they should know that they should follow the principle of constitutions improvement in their own activities. This principle is not followed unless the field of accessing and fulfilling that principle can be possible with the improvement in performance management. This improvement can be created by considering necessary feedbacks from the internal and external environments, analyzing weaknesses and strengths as well as threats and opportunities, accountability

and attraction of customers' satisfaction by creating and applying PA systems with appropriate models. PA systems with appropriate models can help significantly plans, aims, and missions of organizations in the present dynamic world. Therefore, identifying PA and measurement indices as well as applying models with appropriate to the organizational status quo seems necessary. PA is one of the main instruments in management for realizing aims, strategies, and planning in organization. In public sector organizations such as municipalities, designing and establishing the PA and control systems can result in guiding managers appropriately in the line of realizing aims, efficiency, and efficacy of activities as well as responding properly shareholders and citizens. Each organization severely requires the appraisal system for knowing the degree of acceptability and quality of its own activities particularly in complicated environments. In addition, the lack of the appraisal and control system means the lack of relationship with the internal and external environments of the organization. The consequences of this issue is senility and finally the death of the organization (Adeli, 2005, p. 125).

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The society and public institutions in each country are two integral parts related to each other and a lot of performance concerns appear in each urban public system and in individuals' public life. Reforming public institutions and enhancing their performance and management is not possible without considering the status of the appraisal system and performance enhancement. Investigating models conventional in the field of PA of organizations in the world indicates the necessity of paying attention to the performance, efficiency, and efficacy of this performance and paying attention to the effects of organizations especially in public institutions such as the urban system and municipalities. In addition to the necessity of paying attention to appropriate PA, paying attention to the system in which both appraisal is conducted appropriately and the results obtained from the appraisal are properly effective, which is one of the most important necessities of effectiveness of organizations' PA particularly public institutions (Lustaus *et al.* 2006).

Research Objectives

Main objective:

To determine financial and operational PA indices

Particular objectives:

1. To identify financial and operational PA indices
2. To measure financial and operational PA indices
3. To rank financial and operational PA indices
4. To design the model of financial and operational PA indices

Defining Organizational PA

There are different definitions presented for PA. Some define it as follows:

It is a systematic effort for knowing to what extent government services can fulfil people's needs. It can also be defined as the ability of the government for realizing what is necessary (Halachmi, 1999). Some others define it as measuring performances in executive systems in a systematic and principled framework, and scientific management concepts for realizing aims and organizational tasks in the form of executive plans (Hangoft, 2000, p. 23).

Principles of Performance Management

Principles should be considered as the basis for performance management. These principles are as follows:

1. To solve each problem, a certain answer can be found;
2. Values of something are more beyond its profitability;
3. Performance management is a kind of basic process for business;
4. To pay special attention to the power obtained from information exchanges (Iranzadeh & Barghi, 2009, p. 36).

Results of PA

1. By considering the degree of advancement for determined objectives, it can be identified whether the developed policies have been successfully performed or not?
2. By measuring the expected organizational results as well as assessing and measuring the degree of satisfaction of the staff and customers, it can be identified whether policies have been appropriately developed or not?
3. Assessing and measuring performance provide the possibility of identifying grounds to which management have more attentions and help to identify opportunities and limitations.
4. PA causes the creation of information for management in their decision making because a large part of information necessary for management decision making are provided via the PA system (Tavalaei, 2007).

Process of PA

Each process includes a set of activities and measures with its particular, logical, and purposive sequence. In the process of PA, each model which is selected follows the following sequence of activities and measures:

1. Developing related indices, dimensions, and axes and determining their measuring unit. Objectives determine the path of organizations for achieving aims and objectives.
2. Determining the weight of each index in terms of their significance and the highest scores;
3. Standardization and determination of the favorable state of each index;
4. Declaring expectations and indices for "the appraised";
5. Appraising and measuring via comparing the actual performance of the end of the evaluation period by favorable pre-determined standardization;
6. Extraction and analysis of the results.

Aims of organizational PA

Now, both private and public types of PA are important in the world. Therefore, it is the time to know why PA is vital (Blackman, 2012, p. 35).

In the study of Farmer (2004) conducted on 147 private and public organizations in England, the cases shown in Table 1 were considered as aims of applying PA (the right part of the table). Generally, aims of PA can be summarized as follows:

- To strengthen the sense of planning, accountability, participation, transparency practices
- To identify the strengths and weaknesses of functions
- Continuous development, promotion and improvement of performances.

Table 1: Some of the methods of municipal PA in some cities of the world

Row	Title	Appraisal model
1	Local government and municipality of Ontario, Canada	Benchmarking and comparing performance
2	Charlotte municipality	Balanced Scorecard BSC
3	Seattle municipality	Balanced Scorecard BSC
4	The Philippines municipalities	Logical model
5	England municipalities	Balanced Scorecard BSC
6	Australia municipalities	Balanced Scorecard BSC
7	Finland municipalities	Balanced Scorecard BSC

In general, the final aim of PA can be considered as improvement in organizational efficacy.

Models of PA

1. EFQM
2. Balanced Scorecard System
3. TQM model
4. BPR model
5. Malcolm Baldrige Award
6. Performance pyramid (1991)
7. Stakeholder analysis (2001)
8. Circular frame and staple (2000)
9. Analytic hierarchy process (AHP) Model.

Methods of PA for Local Governments and Municipalities

Scoring indices developed for developmental plans for providing sufficient data about the mode of performance and plans for decision makers is the definition of Municipal performance measurement (MPM). Municipalities themselves use a vast range of PA system for different ranges of services such as police, fire, construction, waste, water and wastewater, local and inter-city transport, health and social services.

Municipalities show their performances with a range of particular methods. These methods include Balanced Scorecard Model and the Logical and Modeling Model. These approaches help municipalities for developing frameworks usable for organizations and selecting criteria.

The Logical Model of PA in Local Governments and Municipalities

The logical model is a main and basic instrument in management which is based on results. This model is a planning and designing model effective on revealing the logic of performance or the theory of performance during a process. For municipal performance, logic is as follows: municipalities use resources for providing services and goods supplying benefits of each area.

Municipal PA Using the Optimal Benchmarking Method

Optimal benchmarking performance is the third method for defining municipal performance. Municipalities usually

compare their current performance with past ones or pre-determined aims. Some municipalities compare also their performance with those of municipalities in local governments and their own countries, or with international standards of performance in a certain service (Neely & Walters, 2008).

In the following table, some methods used in some cities of the world are presented.

A Summary of Literature

Row	Authors/year	Subject and results
1	Ghazanfarian, Jafari & Rohani (2011)	"Assessment instrument of business intelligence from enterprise systems" indicated that models and techniques of investigation and appraisal of intelligence of enterprise systems can be effective on improving the support of decision making
2	Faraji (2012)	Performance appraisal based on the EFQM Excellence Model in sports organizations indicated that for using the EFQM for PA in sports organizations, it seems that this model can be used for megacities as well
3	Karimi (2006)	"Performance appraisal" which investigated indices and models of PA in different organizations
4	Varinejad & Imani (2008)	"BSC in the performance of Tehran Municipality" used the model of data envelopment analysis and extracting 25 indices in the form of 4 models of BSC in Tehran Municipality. The results caused the determination of the distance between the status quo and the ideal situation of performance of Tehran Municipality
5	Mohammad Pourzandi & Eghdamian (2007)	Rooting and assessing performance of firms and organizations under Tehran Municipality using data envelopment analysis
6	Ehsanifar & Ehsanifar (2005)	"Presenting the strategic model of municipal PA by mixing the BSC and AFQM in Districts 3 and 18 of Tehran Municipality" which indicated that in case of mixing the two models, an appropriate framework can be created for municipal PA

Research Methodology

Regarding the type of the research, the research is applied, and in terms of its nature, the research employs a survey study method. Moreover, regarding the issue that the research model and the criteria extracted from the theoretical framework, experts' ideas are investigated and finally confirmed. Therefore, the research method is based on the Delphi method.

The Delphi method is a process for obtaining group knowledge with a structure for predicting the future, helping decision making during survey rounds, collecting data, and finally group consensus (Ahmadi et al. 2008). In fact, the aim of this method is collecting and summarizing experts' ideas in relation with policy making and considered events in the future for achieving a consensus (Babajani, 2013).

Population and the Sample

Regarding the issue that in the present study the two working models including the Delphi model and getting managers' ideas were used; therefore, the population of the study includes all elites and experts of public institutions and municipalities as well as faculty members of universities. Furthermore, in the dimension in which it is supposed that managers' ideas be used, all middle-ranked and senior managers of public institutions and municipalities were selected with regard to the research subject and the population.

Main groups of the research for selecting the members of the Delphi group are as follows. In terms of four main characteristics of knowledge and experiences in the issue; tendency, sufficient number for participation, and having effective communication skills, a number of 25 participants were selected as the Delphi group via the purposive sampling method.

- a. Senior and middle managers as well as experts of public institutions and municipalities;
- b. Faculty members of Accounting, Financial Management Departments of universities and higher education institutes as well as managers and experts of research centers in Iran;
- c. Managers of organizations and companies;
- d. Experts and specialists with scientific, research, and experimental records regarding the issues of financial and operation PA.

To do the research, firstly models used in Iran and the world for financial and operational PA in public institutions, local governments, and municipalities were investigated and finally, after attentive statistical investigations, the questionnaires completed by experts were analyzed and the most appropriate method of financial and operational PA was selected. Accordingly, AHP and SEM were selected for data analysis.

Data Analysis

Indices which had the highest level of significance with regard to analyzing the questionnaire were identified and the other indices were removed. Regarding the issue that scoring ranges from 1 to 9, the criterion or the hypothetical mean was taken as 5. After calculating mean scores for each

indices based on the following formula, those lower than 5 were removed, but those bigger or equal 5 were considered as indices accepted by elites.

$$\text{Mean scores of indices} = \frac{\text{total scores of each for all participants}}{\text{number of participants}}$$

In the next stage, the list of indices accepted by elites were sent to the elite group in order that they could be aware of the results and if they had any idea, they declared. In concluding the received cases from the second questionnaire, the following cases were declared as the strengths of financial and operational PA by the elites. All mentioned indices are presented in Table 3.

- a. Components of financial performance
 1. Budget: regarding the issue that public institutions and municipalities work with state budget in one way or another.
 2. Companies and resources: because one of the main corrupting activities in public organizations is the issue of methods of supplying their resources and outsourcing contracts.
- b. Components of operational performance
 1. Customer: customers or clients are one of the capitals of organizations and all operations in organizations are for servicing them.
 2. Internal business processes: can make organizations capable and effective.
 3. Growth and learning: in the age of information and communication, the issues of learning and teaching of the staff and development in their skills are vital.
 4. Leadership: leaders are like brains in bodies who can play the role of guiding organizational activities.
 5. Policies and strategies: draw paths and statuses of organizations in the future.
 6. The staff: are executives of rules and regulations and can play significant roles in improving organizational performance.
 7. Information systems: have particular statuses in modern organizations in playing roles and accessing organizational aims.
 8. Processes: revising and reengineering processes in the performance of public organizations can have great roles.
 9. Results of the staff: the staff's motivation and

Table 3: Prioritization of financial performance

W1	W2
0.7044	0.2956

spirit result in results with high performance or their weaknesses in organizations.

- Results of the society: public institutions and municipalities have great roles in protecting the society and improving the conditions of living in the society.

After doing this process and using paired comparison tables, the 12 criteria (2 criteria for financial performance and 10 criteria for operational performance) as well as their indices were measured, and the data obtained from those tables was abased on the selection of the best option from among different options.

INFERENCE ANALYSIS OF THE DATA

Ranking Variables of Financial Performance

After that paired comparison tables was constructed with a fuzzy triangular numbers, a big ratio of indices were calculated compared to each other via the EA. Accordingly, the non-normalized weight (w^*) of each index was obtained. Non-normalized weights, normalized weights, and normal weights (W) were obtained. This process was stated in all rankings available in the present study.

The way of calculating rankings are stated as follows:

	L	M	U
S1	12.000	10.000	12.000
S2	7.000	5.900	12.754

Row	Criterion	Weight	Priority
1	State budget	0.7044	1
2	Companies and resources	0.2956	2

Regarding the above table and the main obtained weight, state budget and companies and resources had the highest and lowest significance in the group.

Ranking Variables of Operational Performance

Regarding the above table and considering the main obtained weight, information systems, customer, policy and strategy, community benefits, staff, internal business processes,

learning and learning, processes, staff and leadership had the highest and lowest significance in the group respectively.

Table of Paired Comparison

Regarding the above table, it can be observed that with regard to the main obtained weight, indices have the highest and lowest significance in the group.

CONCLUSION

To determine indices of financial and operational PA in public institutions, elites' ideas were used via the Delphi method. Then, the criteria considered by elites were tested by the Fuzzy-AHP.

- After investigations and obtaining elites' ideas about the strengths, components of financial performance were extracted as follows

Budget
Companies and resources
Components of operational performance

With regard to the results obtained for ranking financial performance variables and considering the main obtained weight, state budget and companies and resources had the highest and lowest significance in the group.

- After investigations and obtaining elites' ideas about the strengths, components of operational performance were extracted as follows

Table 6: Prioritizing operational performance

Row	Criterion	Weight	Priority
1	Customer	0.1805	2
2	Internal processes of business	0.0922	6
3	Growth and learning	0.0611	7
4	Leadership	0.000	10
5	Policies and strategies	0.1665	3
6	The staff	0.1148	5
7	Information systems	0.2115	1
8	Processes	0.0438	8
9	Results of the staff	0.000	9
10	Results of the society	0.1296	4

	L	M	U
S1	12.000	10.000	12.000
S2	7.000	5.900	12.754
S3	8.000	7.800	10.600
S4	10.000	9.000	9.000
S5	8.000	10.000	10.000
S6	6.000	8.000	12.000
S7	8.000	11.000	10.000
S8	9.000	9.000	10.000
S9	5.000	8.000	9.000
S10	11.000	10.000	8.000
w1	w2	w3	w4
0.1805	0.0922	0.0611	0.0000

Dimension	Component	Index	Weight	Priority	
Financial	State budget	Having relevance of the volume of activities with budget (current and constructive)	0.2113	1	
		Optimal utilization of equipment and administrative facilities and buildings	0.1095	5	
		Favorable efficiency and productivity with regard to the existing human forces	0.1042	6	
		The relevance of the number of the staff with the degree of providing services	0.0852	7	
			0.1501	3	
		Development of activities in line with the program and preset	0.1285	4	
		Organizations' share in employment	0.2113	2	
		Companies and resources	The use of financial resources to support policy and strategy, programs and long-term goals and short-term	0.013488	2
			Formulation and implementation of processes and financial strategies	0.0134	3
			Evaluation and analysis of investments in tangible and intangible assets	0.01	6
			Risk management for financial resources	0.001618	14
			Buildings, equipment and materials are managed	0.017059	1
			The use of assets (buildings, equipment and materials) to support the organization's policy and program	0	15
			Asset management organization (maintenance and useful) to improve their performance in the lifecycle	0.003259	12
			Optimization of the inventory management of materials	0.010618	5
			Adjustment of utility assets with developed activities	0.005424	10
	Reducing and recycling wastes		0.003594	11	
	To buy the original sources		0	16	
	Determining the appropriate method of buying		0.009794	7	
	Holding tenders		0.006753	9	
	evaluation of participants in the tender		0.012441	4	
	Holding auctions		0.002576	13	
	Assessment of the participants in auctions		0	17	
	Operational	Customer	Measurement and management of assets deleterious effect on employees, customers and the environment.	0.007624	8
			Obtaining permanent feedbacks from clients	0.1623	3
			Customers' confidence in the organization	0.1388	5
			Providing updated services for customers	0.2338	2
			The staff's good behavior	0.2458	1
			Physical characteristics of the units and offices	0.1501	4
			The number of customers' complaints	0.0692	6
			Properly informing the society about rules and regulations of the subject	0.000	7
			Internal process of business	Planning with the aim of providing new services for customers	0.1060
Sufficient attention to the efficiency of exchanges				0.0393	6
Performance measurement of units with the rate of customers' complaints				0.2575	1
Designing and Creating logical processes in an organization to improve performance				0.000	8
Considering the amount of information of the employees as a measure of organizational performance goals				0.0799	7
Proper use of the survey system				0.1493	3
Performing appraisal systems of the staff at all levels of the organization				0.2575	2
Continuous improvement in the average wait time of customers in queue for providing services				0.1104	4
Growth and learning		Enjoyment of the staff with high levels of professional skills		0.013488	15
		The suitability of education of staff for provide services		0.1060	9
		The rate of employee absenteeism		0.0393	13
		In-service professional training courses		0.2575	1
		Considering the issue of research and development in organization		0.000	12
		Consideration of processes for presenting suggestions on the part of clients		0.0799	11
		The staff's job satisfaction		0.1491	7
		Ratio of displacement of the staff		0.2574	2
		The level of employees' loyalty or desire to stay in organizations	0.005434	16	
		The number of proposals received from employees	0.003594	17	
		Effectiveness and efficiency of the staff	0.000	18	
		Ratio of freedom of action in performing the duties of the staff	0.0241	14	
		Physical and psychological environments in order to perform the duties of the staff	0.1072	8	
		Organizational position commensurate with education and job skills	0.1761	5	
		Job security of the staff in the organization	0.957	10	

(Contd...)

(Continued)

Dimension	Component	Index	Weight	Priority
		The desirability of financial incentives (bonuses and overtime, etc.)	0.1904	4
		Developing the culture of teamwork in the organization	0.1594	6
		Quality of services provided	0.2472	3
	Leadership	Developing mission, vision and values of the organization by leaders	0.0241	7
		Leaders support of the improvement and learning activities	0.1072	5
		Motivating and encouraging leaders to empower the staff (submitting authority to the staff)	0.1761	3
		Motivating and encouraging leaders to creativity and innovation in organizations	0.0957	6
		Emphasis on the design and implementation of processes for measuring, monitoring and improving key results in the organization	0.1904	2
		Establishing leaders' sessions with the clients and representatives of the society for better understanding of their needs and expectations as well as more accountability	0.1594	4
	Policy and strategy	Promotion of the mission, vision, values, policies, and strategies, programs and long-term goals and short-term of employees	0.2472	1
		Policy and strategy is based on national and local rules	0.1763	3
		Policy and strategy is based on collected information for defining the scope of organizational activities for now and future	0.1551	4
		Creating organizational policies based on information about needs and expectations of the staff	0.0431	6
		Creating organizational policies on the basis of information about the needs and expectations of customers and stakeholders	0.1247	5
		Policy and strategy is based on analysis of the effects of new technologies	0.2040	2
		Creating policies and strategies based on data from the research, learning and benchmarking activities	0.2970	1
	The staff	Compatibility with enterprise policy of Human Resource Programs	0.1874	1
		Ensuring justice in all conditions of employment	0.1874	1
		The use of innovative approaches in organizations to improve job procedures	0.1874	1
		To identify, classify and coordinate knowledge of workers with the needs of organizations	0.0923	3
		Developing programs to help training and developing the staff capabilities to ensure compliance with current and future needed capabilities	0.000	5
		Ongoing assessment of the staff	0.0944	2
		Considering the facilities and utilities for employees	0.0711	4
	Information systems	Identifying and replacing worn-out technology	0.4017	1
		Adoption and implementation of knowledge management	0.5983	2
	Processes	Systematic design of processes and managing them	0.3278	1
		Process improvement when necessary	0.1826	4
		Design and development of services based on customer needs and expectations	0.2570	2
		Services and products are submitted and supported	0.2326	3
		Customer relationship management system implementation	0.000	5
	Results of the staff	Appropriate evaluation and reward systems	0.1412	4
		Learning opportunities and development skills, knowledge	0.1397	5
		The staff's satisfaction with facilities and services	0.2298	1
		The staff's satisfaction with their wage and benefits	0.0955	6
		The staff's satisfaction with the relations among colleagues	0.1987	2
		The staff's satisfaction with environmental conditions, health and work safety	0.1951	3
	Results of the society	Transparency of information related to community	0.000	4
		The role of organizations in scientific and professional grounds	0.256	2
		The activities of the organization in order to conserve and protect public resources	0.1243	3
		Activities of the organization on the basis of environmental indicators	0.6107	1

Customer
Internal business processes
Growth and learning
Leadership
Policies and strategies

The staff
Information systems
Processes
Results of the staff
Results of the society

Regarding the main obtained weight, information systems, customer, policy and strategy, community benefits, staff, internal business processes, learning and learning, processes, staff and leadership had the highest and lowest significance in the group respectively.

The present study tried to firstly developed and identified components and indices of financial and operational PA in public institutions and municipalities based on the study and investigation of models of existing and performable PA at the level of the country and the world. Investigations indicated that the use of the two Balanced Scorecard Model and Organizational Excellence Model outside the country and particularly in Iranian organizations (including private and public ones) enjoy higher and more acceptable uses. Therefore, the researcher decided to organize her research based those two models. The results indicated mixing these two models both at the dimension of financial performance and the dimension of operational performance with this difference that the indices of each model were investigated and developed in terms of the type and nature of investigated organizations.

Ehsanifard (2011) and Shahin et al. (2013) investigated whether those two models with different origins can have commonalities and be mixed with each other in spite of their differences? The results confirmed the possibility of mixing and merging those models. In addition, they indicated a positive effect in executing and assessing organizational strategies and performance. The results obtained from the present study are consistent with the results of these two studies. The reason for this consistency can be high similarity of organizations of the public sector in terms of nature and duties whether inside or outside the country in each time.

Sanaei (2013), Barakpour et al. (2012), Mousavi (2015), and Abtahi et al. (2012) concluded that paying attention to citizens' satisfaction in providing services can be a main criterion for public institutions and municipalities in operational PA. In addition, Mundes et al. (2013) concluded that the increase in the staff's motivation can help organizations in achieving strategic aims and have appropriate PA over time.

Mousavi (2015) concluded that leadership, the staff, and processes can be considered as criteria for PA of municipalities and public organizations other than the issue of customer orientation.

Abtahi et al. (2012) concluded that paying attention to resources and technology along with citizen-orientation can have significant roles in appropriate financial and operational PA municipalities and public organizations.

Marsousi (2003) took paying attention to incomes and costs in presenting better services and finally more optimal PA. He concluded that paying attention to the financial dimension of organizations can be suitable in PA.

Accordingly, the following applied suggestions can be presented according to the findings:

1. Designing a comprehensive system of performance evaluation according to environmental conditions;
2. Improving the budgeting system and the moving to activity-based budgeting and budget performance
3. Formulation and implementation of a comprehensive strategic plan and operational evaluation system based on financial indices;
4. Investigating and updating financial and operational indices periodically;
5. Providing grounds for improving consumption and applying effective resources;
6. The use of a comprehensive performance management system to replace the existing assessment models;
7. Realizing the motto of respecting clients by cultural improvement and the process of organizational responsibility for enhancing organizational performance;
8. Designing and presenting a comprehensive information system in organizations can result in improving performance and facilitate the process of PA.

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