

Evaluating the performance of contracting companies in two dimensions of internal affairs and growth and learning (case study: Shiraz municipality)

Fatemeh Rabet

Financial Expert at District 1 Municipality of Shiraz

Abstract

Contractors play an important role in success or failure of projects. Therefore, organizations always use scientific strategies for investigation of the performance and selection of the contractors. The present study is an applied research with a descriptive survey method, using questionnaires of which validity and reliability are inspected by Cronbach alpha coefficient. Statistical population of the study includes all the expert employees of the contract's Technical Assistance and Urban Development department of Shiraz municipality who were 85 with a sampling census. Results of the study were analyzed using one-sample T-test with SPSS. It was concluded that there is a significant difference between performance of Shiraz municipality, and the favorable state in dimensions of internal affairs, growth and learning. So, regarding the findings of the study, it is essential to consider and inspect the contractors' performance on Shiraz municipality and choosing them based on some criteria.

Keywords: performance evaluation, contracting companies, internal affairs, growth and learning, Shiraz municipality

Introduction

Choosing contractors is a complicated issue that depends on many criteria. Most of the time, these criteria are not certain and accurate enough to choose the best options. Also, the number of the criteria is often different and there is a complicated relationship between high-level criteria and the lower-level ones (Feng et al, 2010).

Choosing the contractor is the most important issue in projects and their performance (Gholipour et al, 2014).

It is vital to measure the performance and management in today's competitive world of business that deals with shortage of resources and many companies try to improve their efficiency and performance (Kádárová et al, 2015).

Process of performance evaluation, identification and application of the key criteria of performance is essential for organizations because it provides useful and important information for measuring the progress rate of that organization (Rabbani et al, 2014).

By performance evaluation we understand that how much distant is the company from the standard criteria and the favorable status. It also leads to identification of the strengths and weaknesses of the organization's plans, which in turn, helps us plan based on pre-determined standards (Mehralhasani & Barfe, 2015).

Management of contractors evaluation and selection is an essential part of the building process because contractors are one of the basic elements of civil projects and the key factor of changing resources into final product. Regarding the fact that a huge part of the civil projects budget is assigned to executive operations, every project needs a proper contractor that has the ability to perform the project in certain time and with the pre-determined resources with the favorable quality (Asghari zadeh & Nasrollahi, 2008).

Performance evaluation, identification and application of key criteria of the performance, are vital for the organizations because they provide important information for measuring the organizations' progress measurement. They also provide an abundant amount of organizational data for measuring the organization progress and help decision making about complex subjects (Rabani et al, 2014).

Nowadays, most organizations use innovative methods for their performance evaluation because traditional ones had some unsuccessful results especially for the reason that they paid too much attention to financial dimensions of the projects. Balanced scorecard is a management technique and a performance evaluation system that provides a clear landscape for managers in identification of weaknesses and strengths of the organization activities. Balanced scorecard method is one of the most useful 15 management tools that is a low-error effective way among different managers of 22 countries of the world (Bakhtiary, 2004).

This strategy combines financial and non-financial criteria from point of view of customer, growth and learning, financial and internal processes to evaluate the performance (Sachin et al, 2010).

As a result, based on the fact that contractors play an important role in municipality projects, it is claimed that the most important decision of Shiraz municipality (as the employer) is to choose the best contractors for every building project. Selection process of contractors is a risky job for employers including Shiraz municipality. Therefore, employers try to reduce this risk. One of the ways of risk reduction is to evaluate contractors with a scientific method based on Shiraz municipality favorable criteria. Results of this study can be used in identification of Shiraz municipality contractors evaluation, and management of this organization will be able to choose and evaluate contractors based on proper criteria and reduce the project risk and increase the efficiency of the organization.

Literature Review

Mohamadzade, Yazdan panah and Akbari (2016) studied the evaluation and selection process of Contractors operating port terminals using multi-criteria decision making techniques (hierarchical analysis) and concluded that applicants' financial and company properties, resources investment capacity, equipment and systems, plus facilities operational plans are the most important criteria in contractors evaluation and ranking them.

Rashvand et al (2016) studied the contractors' pre-qualification and concluded that evaluating contractors' qualification before project execution influences the quality and duration of the project completion. As a result, criteria such as management ability, technical abilities, financial capacities, sanitary and safety are the most vital factors.

Ng and Skitmore (2015) studied the contractors' evaluation with balanced scorecard and one-sample T-test methods and concluded that contractors of which score of workprogress, safety, environment, communication, resource control, employees' wage payment and commitment are less than 4 and higher than 4, have respectively the weakest and the strongest performance. All contractors in their study had a weak performance.

Setiawan et al (2015) studied contractors activities in 19 chief managers in Indonesia and concluded that a high level of competition among contractors is an important challenge for them. Also, quality analysis of contractors will lead to a better understanding about projects efficiency and many of them do not have an acceptable performance.

Hypothesis of the study

- 1- There is a significant difference between Shiraz municipality contractors efficiency (regarding the internal affairs) and the favorable condition.
- 2- There is a significant difference between Shiraz municipality contractors efficiency (regarding the growth and learning subjects) and the favorable condition.

Method

Regarding the purpose of the study, this is a survey – descriptive applied research that used questionnaires. All experts of Technical Assistance and Urban Development department of Shiraz municipality in 2016 included in this research. Sampling was performed by census method and finally, 85 employees entered the sample (53 regional experts, and 32 Technical Assistance and Urban Development). Cronbach alpha coefficient was used to test the validity and reliability of the questionnaires which were reliable highly (alpha Cronbach coefficient: 0.967). data were analyzed with SPSS software.

Findings of the study

Hypothesis test

Normality of the variables

In order to inspect normality of the variables, we used Kolmogorov-Smirnov test of which results are shown in table 1.

Table 1: Normality of the variables

Variable test	Kolmogorov-Smirnov		
	Statistic	Significance level	Number

Internal affairs dimension	0.748	0.630	85
Growth and learning dimension	0.627	0.827	85

Table one shows that significance level of internal affairs, growth and learning, customer and finances is higher than 5% so the distribution of the variables in the study is normal.

Hypothesis one: There is a significant difference between Shiraz municipality contractors efficiency (regarding the internal affairs) and the favorable condition.

In order to check this hypothesis, we used one-sample T-test of which data are represented in table 2.

Table 2: inspecting the efficiency of contractors regarding the internal affairs dimension with one-sample T-test

Variable	Mean	Statistic	Freedom degree	Significance
Internal affair dimension	3.17	-3.562	84	0.006

Data of table 2 shows that significance level is less than 5% so, There is a significant difference between Shiraz municipality contractors efficiency (regarding the internal affairs) and the favorable condition; and the hypothesis is confirmed.

Hypothesis #2: There is a significant difference between Shiraz municipality contractors efficiency (regarding the growth and learning subjects) and the favorable condition.

In order to check this hypothesis, we used one-sample T-test of which data are represented in table 3.

Table 3: inspecting the efficiency of contractors regarding the growth and learning with one-sample T-test

Variable	Mean	Statistic	Freedom degree	Significance
Internal affair dimension	2.64	-4.992	84	0.001

Data of table 3 shows that significance level is less than 5% so, There is a significant difference between Shiraz municipality contractors efficiency (regarding the growth and learning dimension) and the favorable condition; and the hypothesis is confirmed.

Conclusion and recommendations

Findings of the study showed that there is a significant difference between performance of Shiraz municipality contractors (regarding the internal affairs) with favorable status. In this study, questionnaire options were categorized in five degrees (from "very much" to "very little" with minimum of 1 and

maximum of 5). And number 4 and higher was chosen as the favorable mean based on Shiraz municipality experts ideas and NG & Skitmore (2015) studies. Average of scores was compared with this rate. Criteria of rejection or confirmation was significance level (sig.(2-tailed)) from 0.05. based on the statistical hypothesis, H0 was negative and the study hypothesis (H1) was considered as positive. All significance rates were 0.05 for this hypothesis. So, H0 is rejected and H1 is confirmed.

Performance evaluation and generally, performance management is a process with which we can obtain useful information about how to effectively do the jobs and strengthen the positive efficiency and removing the improper and unnecessary performances. Balanced scorecard is a tool for measuring the performance. Regarding the internal affairs dimension, Shiraz municipality has considered the following criteria: having an integrated planning system and project control, standards, technical specifications, executive plans of the previous projects, compliance with current rules of environment, insurance, quality control system: using price list and predicted time plans, safety rules of the workshop, job experiences in municipality projects, number of expert and professional human force, education level of the personnel, available equipment and machinery and equipments maintenance. Findings showed that contractors do not have a favorable performance with the average score of 3.17. this finding is in line with results of NG & Skitmore (2015), Nahavandi & Nowroozi (2010), Javari eskandari & falah fard (2015).

Findings of the study based on one-sample T-test showed that there is a significant difference between Shiraz municipality contractors and the favorable status (regarding the growth and learning dimension). In this study, questionnaire options were categorized in five degrees (from "very much" to "very little" with minimum of 1 and maximum of 5). And number 4 and higher was chosen as the favorable mean based on Shiraz municipality experts ideas and NG & Skitmore (2015) studies. Average of scores was compared with this rate. Criteria of rejection or confirmation was significance level (sig.(2-tailed)) from 0.05. Based on the statistical hypothesis, H0 was negative and the study hypothesis (H1) was considered as positive. All significance rates were 0.05 for this hypothesis. So, H0 is rejected and H1 is confirmed.

Balanced scorecard is able to help us find out the relationship between favorable status of growth and learning. A company with the ability of innovation, improvement and learning can have a higher performance than others in finding the customers and continuously improve the executive performance. Criteria of Shiraz municipality experts for this category were : creativity and innovation in previous projects, innovation in designing the products, number of new services, increasing the employees' skills, continuous education of the employees, papers presented in seminars, congress, and specialized magazines, technical and studies advances, ability to answer and fulfill the expectations and non-expected issues; and also, expectations of the municipality including : providing the safety licenses from Department of Labor and Social Welfare. Results showed an average of 2.64 that represents a low performance among contractors. This findings corresponds with findings of NG & Skitmore (2015), Nahavandi & Nowroozi (2011), Jafari & falahfard (2015).

The following issues are recommended based on the results of the present study:

- 1- Municipality should provide a questionnaire including all investigation criteria for the selection of the contractors
- 2- Regarding the fact that Shiraz municipality contractors are not in a standard condition regarding the growth and learning issue, it is recommended that some infrastructures and cooperation systems must be implemented between municipality and the contractors in different geographical regions, and also actions such as the following should be done in order to improve the level of growth and learning among contractors: web-based seminars, experience-exchange meetings,

relating managers and the key personnel of different organizations who are involved in the projects.

- 3- It is also recommended that the observation and evaluation and its applications must be defined clearly in the selection process of Shiraz municipality selection of contractors.

References

- Bakhtiyari, P., (2004), In translation Strategy-oriented organization, Kaplan RS, Norton DP, Tehran: publication of Industrial Management organization.
- Feng, Ch., Wu, P., Chia, K., (2010) ,A hybrid fuzzy integral decision-making model for locating manufacturing centers in China: A case study, *European Journal of Operational Research*, 200, 63–73.
- Gholipour, R ., Jandaghi, Gh., Rajaei, R.,(2014), Contractor selection in MCDM context using fuzzy AHP, *Iranian Journal of Management Studies (IJMS)*, 7, (1), 151-173.
- Jafari eskandari, Meysam; Falahfard, Abbas; (2015), investigating the performance of contracting companies at Southern Pars energy special economic region in critical situations, oil and gas extraction journal, 121, 30-38.
- Kádárová, J ., Durkáčová ,M ., Teplická ,K., Kádár, G.,(2015), The Proposal of an Innovative Integrated BSC – DEA Model , *Procedia Economics and Finance* , 23, 1503 – 1508.
- Mehralhoseini, M; Barfe, T; (2015), investigation of Kerman hospitals performance using balanced scorecard, *Sabzevar medical university*, 2nd vol., #3, 461-471.
- Mohamadzade, M; Yazdanpanah, A; Akbari, A; (2016), providing a model for investigation and selection of the best contractor for Contractors operating port terminals using multi-criteria decision making techniques (hierarchical analysis), *maritime transportation journal*, 2nd year, #2, 48-53.
- Nahavandi, Nasim; NOwroozi, Ashraf (2011), investigation of contractors using fuzzy multi-criteria methods having dependent and independent relations (case study: RAJA railroad company contractors), *transportation journal*, No. 3, 303-321.
- Nasrolahi, Mahdi, (2015), using F-PROMETHEE for investigation and ranking of civil projects contractors (case study: Maskan Mehr project of Hashtgerd new city), *industrial management journal*, Vol. 7, No. 1, 175-188.
- Ng, T., Skitmore, M., (2015), Developing a framework for subcontractor appraisal using a balanced scorecard, *Journal of Civil Engineering and Management*, 20, (2), 149-158.
- rabbani, a., zamani, m., yazdani, A., (2014), Proposing a new integrated model based on sustainability balanced scorecard(SBSC) and MCDM approaches by using linguistic variables for the performance evaluation of oil producing companies, *Expert Systems with Applications*, 41, 7316–7327.
- Rashvand, P., Abd Majid, M ., Pinto, J., (2016), Contractor management performance evaluation model at prequalification stage, *Expert Systems with Applications*, 1-15.
- Sachin , K., Patil, R., Kant, A., (2016), Evaluating the impact of Knowledge Management adoption on Supply Chain performance by BSC-FANP approach: An empirical case, n Press, Corrected Proof, Available online .
- Setiawan, H., Erdogana, B., Ogunlana, S., (2015), Competitive aggressiveness of contractors: A study of Indonesia, *Procedia Engineering*, 125, 68 – 74