

THE IMPACT OF CRITICAL SUCCESS FACTORS OF PROJECT MANAGEMENT ON ORGANIZATIONAL PERFORMANCE: APPLIED STUDY ON CONSTRUCTION COMPANIES IN JORDAN

Nedal Al-khayyat student master degree
Peter the Great St. Petersburg Polytechnic University

Hussein Alghannami student master degree
Peter the Great St. Petersburg Polytechnic University

Dana Al-khayyat master degree
Al-Balqa' Applied University, Amman, Jordan

Abstract

Purpose : The purpose of this paper is to discuss the impact of critical success factors of project management on organizational performance on construction companies in Jordan, and the study discussed mainly “what is the impact of critical success factors of project management (external, Institutional, Project management, Project manager and client related factors) on organizational performance three main directions, construction time, construction cost and construction quality, on construction companies in Jordan.”

Design/methodology/approach: The quantitative approach used which represented by questionnaire, the sample would be project members from construction companies in Jordan. This research aims to collect a sample size about (150) Simple random Sample as the targeted sample need to exposed to construction project. A questionnaire will used to collect feedback from the potential respondents.

Finding: The result put the impact of critical success factors of project management on organizational performance that effect on Jordanian construction companies.

Research limitations/implications: The research limits to Jordanian construction companies in specific.

The study doesn't covers all CSFs, but primary focuses on identifying a CSFs that have impact on organization performance in construction companies in Jordan, Also this research based on projects executed in Jordan. Therefore; this research uses references only from Jordanian construction companies officially registered in Jordanian contracting

association.

Construction projects vary based on size or even application of the construction, thus; CSFs may vary from project to another.

In order to provide findings, the study consist from construction companies across province of the country, in order to do that, the researcher spent a lot of time to traveling across the country and even between companies offices and job sites.

Keyword: Jordan, Critical success factors, Project management, Organizational performance

Paper type: Research paper

Introduction

The construction industry is one of the most important sectors that have a great influence on Jordanian economy, it describes as complex, unstable and risky sector, and it is for sure a very dynamic industry and a great driving force for national economic growth.

As one of the national main employment based Jordan Chamber of Industry “construction industry in 2017 employed (6381) employee, that’s beside a total of 53.4 million Jordanian dinner export”, however; construction companies face a lot of obstacles not limited to the open market competition but exceeding it to the unstable political and economic situations in the importing markets (mostly Iraq and Syria), so and to have a competitive edge, the need of a proper planning and operation excellence is becoming a priority to sustain, the purpose of perfectly determining critical success factors (CSFs) is very helpful for performance enhancement.

Literature review:

The project management can be have many definitions regarding to the type of project, organizations, and employees, Project management as a term seems to first appear in 1953, arising in the US defense-aerospace sector (Johnson, 2006).

Understanding effective project management techniques helps organizations carry out large-scale projects on time, on budget and with minimal disruption to the rest of the business (Harbour, 2016).

It was Daniel in 1961 who first coined the term 'success factors' in management literature. In his study, he came up with a set of industry-related CSFs that are claimed to be relevant for any company in a particular industry (Amberg et al, 2005).

On the other hand the term "critical success factors" in the project management parlance was first used by Rockart which implies those factors that are capable of predicting the success of projects (Saqib, et al, 2008), success factors first came to the surface within the field of project management in the 1960s when studies with the aim of identifying the best practice of project management were carried out. These studies were financed by governments to investigate the poor success of publicly funded projects (Morris et al, 2010), related to literature that describe critical success factors we must mention the impact Rockart has had on the subject, Rockart describes that "critical success factors thus are, for any business, the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization. They are the few key areas where "things must go right" for the business to flourish. If results in these areas are not adequate, the organization's efforts for the period will be less than desired" (Rockart, 1979).

To apply the CSF method and to use CSFs as an analysis tool, it is important to understand how they relate to the organization's strategic drivers and competitive environment (Caralli, 2004).

Critical success factors are the elements of the business that drive it or are the factors that must be achieved if the company's overall goals are to be attained. The focus groups and the in-depth interviews highlighted a number of critical success factors for their businesses, some of which reflect existing research (Bergin, 2002, Flanagan, 2005, Phillips & Louvieris, 2005, Olsen et al, 2005, O'Donoghue & Luby, 2006, Kandampully, 2006, Kobjoll, 2007).

Performance management, measurement and critical success factors are intrinsically intertwined. When discussing this relationship, (Kellen, 2003) and (Flanagan, 2005) argue that critical success factors need to be identified in order to provide focus for performance management and measurement. (Haktanir & Harris, 2005) support their views and have highlighted the discernible link between critical success factors, industry context and performance measurement.

(Haktanir & Harris, 2005) support their views and have highlighted the discernible link between critical success factors, industry context and performance measurement. For example, performance measurement frameworks and their associated performance

measures provide the information needed to inform and support the critical success factors of the organization (Detta Melia, 2015).

Once identified important general variables and assumed the relationship between them, a general Hypothesis is generated and tested, which is stated as follows:

HO1: There is no impact of CSFs of project management at statistical significant ($0 \leq 0.05$) on organizational performance on construction companies in Jordan.

External factors are those factors affecting the success of construction projects, which are mostly beyond the control of the management team (Gudienė et al, 2013).

These factors include political, economic and social factors (Belassi & Tukel, 1996).

Political factors concern political stability and government intervention in providing both incentives and enabling environments for public housing development (Chen et al, 2012).

(Pugh, 2001) argues that failure on the capability of government will affect the success of overall housing sector development. Economic factors such taxes, competitiveness, credit, interest rate, inflation. These include a stable macroeconomic environment, availability of credit facilities, low interest rates and long repayment periods (Gudienė et al, 2013).

Based on above the following sub-hypothesis generated and tested:

HO11: There is no Impact of external factors at statistical significant ($0 \leq 0.05$) on organizational performance on construction companies in Jordan.

Institutional factors are the regulations and standards which rule the construction business and can be classified into two main sectors: first the general regulations which are mostly given by government, related engineering association, global and regional standards institutional and other official sources, and second specific regulations issued by in charge consultant/developer, these specific regulations generally generated from general regulations taking into consideration construction application and special cases.

So the second sub-hypothesis generated and tested:

HO12: There is no Impact of institutional factors at statistical significant ($0 \leq 0.05$) on organizational performance on construction

companies in Jordan.

Project management action is a key for project success (Hubbard, 1990) suggested that by using the management tools, the project managers would be able to plan and execute their construction projects to maximize the project's chances of success. Then, the variables in project management include adequate communication, control mechanisms, feedback capabilities, troubleshooting, coordination effectiveness, decision making effectiveness, monitoring, project organization structure, plan and schedule followed, and related previous management experience (Belout, 1998, Chua et al, 1999, Walker and Vines 2000).

Project manager is the most important factors for project success; in fact the manager play big rule for project success or fail, Project manager as a one of key force affecting project performance is also analyzed from the success factor point of view. Particularly project manager's experience, commitment, competence and authority were discussed as factors influencing project success (Chua et al, 1999).

(Chua et al, 1999) defined project participants as the key players, including project manager, client, contractor, consultants, subcontractor, supplier, and manufacturers.

(Walker, 1995) considered influence of client and client's representative as a significant factor on construction time performance.

The client-related factors concerned with client characteristics, client type and experience, knowledge of construction project organization, project financing, client confidence in the construction team, owner's construction sophistication, well-defined scope, owner's risk aversion, client project management (Chan, 1997).

Regarding to above the following hypothesis put :

HO13: There is no Impact of project management factors at statistical significant ($0 \leq 0.05$) on organizational performance on construction companies in Jordan.

HO14: There is no Impact of project manager factors at statistical significant ($0 \leq 0.05$) on organizational performance on construction companies in Jordan.

HO15: There is no Impact of client related factors at statistical

significant ($0 \leq 0.05$) on organizational performance on construction companies in Jordan.

After literature review the researcher saw that only few previous studies discussed the CSFs to improve the performance of construction organizations in Jordan, and fewer studies succeeded to correctly identify the CSFs. On the other hand, many other studies tried to identify the “critical failure factors”.

Method and procedures

The study based on theoretical framework including general knowledge in CSFs and performance; in Addition, a number of literature reviews were conducted to represent other researches methodology and results.

Quantitative approach used and represented by questionnaire, the population of this study represented by employees which working in construction companies specialized in the construction field in the Jordan and officially registered with the Committee of classification of Jordan construction contractor association until 5/10/2018.

The sample would be project members from construction companies in Jordan. This research aims to collect a sample size about (150) Simple random Sample as the targeted sample need to exposed to construction project. A questionnaire will used to collect feedback from the potential respondents.

The study sample was mainly Simple random Sample, as the researcher tried to collect the needed information from selected employees who work in construction project (150) questionnaires distributed of which (142) questionnaires retrieved, however five questionnaires were excluded due to missing data this left (137) analyze questionnaires which represent 94% response rate.

A set of (43) question developed depending on the variables defined in the research model to identify the areas of strength and weakness, the approved questionnaire (English Version) attached in Appendices (A).

The researcher asked the respondents to indicate their level of agreement on a 5- point scale ranging from strongly disagree (1) to strongly agree (5).

Three main parts of the questionnaire designed, the first part related to general information including (5) areas like company size, educational level and experiences, etc. The second part consists of (24) items, distributed into (5) areas related to independent variable

which are CSFs. The third part consists of (14) items, distributed into (3) areas with relation to the independent variable which is organizational performance.

Results

The research used SPSS to analysis to questionnaire component, Averages were distributed to members of the study sample responses as follows:

1. High degree of approval: include items that got the mean greater than (4.10)
2. The degree of approval medium: It includes a set items which ranged mean to the calculation of (2.69-4.02)
3. Low degree of approval: include items that group got less than mean (1.68), Where the researcher have used the length category of Likert scale: $(5-1)/3=1.33$

After data analysis and hypothesis testing of data collected through questionnaires, the results obtained are discussed in the below points:

1. The independent variable (CSFs) obtained (3.90) mean, which relies in the medium range, as the five drivers of CSFS obtained medium means with highest mean (3.96) for project management factors but still in the medium range.

This result agrees with case study conducted by (Neringa Gudienė, Audrius Banaitis, Nerija Banaitienė, Jorge Lopes, 2013) which developed a conceptual critical success factors model for construction projects.

2. The dependent variable (Organizational performance) also obtained a medium mean of (4.00), as all drivers got close results ranging from lowest of (3.98) for Construction cost to the highest of (4.02) for construction quality driver.

This result agrees with case study conducted by (Sarfo Mensah, 2007) which improve the effect of project management practices on building project performance

3. There were a medium means for the (External factors) as it got (3.82), all items selected to measure the external factors obtained a medium means ranged (3.68-3.91).

4. The (Institutional factors) got medium approval with mean (3.91), all items suggested to measure cost driver obtained medium results. Expect fourth and fifth items (All departments do the job with team separate & organization conduct a customer satisfaction surveys) obtained a high degree.

5. The third factor (Project management) which obtained a medium

approval (3.96), as all drivers got close results ranging from lowest of (3.89) for "Organization management conduct a project management latest theories" and highest (4.02) for "Organization committed to implement quality assurance procedure in their operation" .

This partially agrees with study case for (de Melo Moura, 2016) who provided a detailed analysis to Critical success factors for project management.

6. The (Project manager factors) received a medium approval as it got (3.93) mean, as all drivers got close results in medium rang.

7. The (Client related factors) got medium approval with mean (3.85) .All items suggested to measure Client related factors obtained medium results. Expect fourth item (Organization always pay big attention for received (claims, suggestion)) obtained a high degree.

8. The (Construction cost) driver obtained a medium approval with a mean (4.00), the items measuring this driver obtained also medium means except "Organization committed to deliver project as per requirement from the first time" obtained high degree.

This shows the most of chosen sample doesn't prefer to late in their project but the organization must committed to deliver project as per requirement from the first time

This agree with (Chan, 2001) who conclude that cost, time and quality are the three basic and most important performance indicators in construction projects

9. The (Construction time) driver obtained a medium approval with a mean (4.03), all items measuring this driver obtained also medium means from lowest (3.00) to highest (4.02).

10. The (Construction quality) driver obtained a medium approval with a mean (4.01), the items measuring this driver obtained also medium means except first item "Organization execute project to tender specification " obtained high degree with mean (4.04).

11. All measured CSFs factors (External factors, Intuitional factors, Project management factors, Project manager factors, Client related factors) have a direct impact on the dependent variable (organizational performance), as the value of $F=13.68$ which is statistically significant at the level less or equal to (0.05).

This result supports the research model developed to this study.

12. The factor related to external factors, have a direct impact on organizational performance, as the value of $F=17.02$ statistically significant at the level less or equal to (0.05).

13. The factor related to institutional factors, have a direct impact on

organizational performance, as the value of $F=18.03$ statistically significant at the level less or equal to (0.05).

14. The factor related to project management factors, have a direct impact on organizational performance, as the value of $F=26.175$ statistically significant at the level less or equal to (0.05).

15. The factor related to project manager factors, have a direct impact on organizational performance, as the value of $F=24.126$ statistically significant at the level less or equal to (0.05).

16. The factor related to client related factors, have a direct impact on organizational performance, as the value of $F=21.175$ statistically significant at the level less or equal to (0.05).

17. The results of R^2 show that 14.3% of the occurring variance organizational performance belongs to the critical success factors.

18. The results of R^2 show that 8.4% of the occurring variance organizational performance belongs to the external factors.

19. The results of R^2 show that 10.2% of the occurring variance organizational performance belongs to the institutional factors.

20. The results of R^2 show that 17.6% of the occurring variance organizational performance belongs to the project management factors.

21. The results of R^2 show that 16% of the occurring variance organizational performance belongs to the project manager factors.

22. The results of R^2 show that 12.9% of the occurring variance organizational performance belongs to the client related factors.

Conclusion and recommendation

Depending on the results obtained, it concluded that the impact of critical success factors of project management on organizational performance. Beside this main conclusion, some additive conclusions could be presented as follows:

There is impact of external factors on organizational performance on construction companies in Jordan, and external environment (Legal, Social & Economic) also should be considered.

There is impact of institutional factors on organizational performance on construction companies in Jordan.

There is impact of project management factors on organizational performance on construction companies in Jordan, and it was even selected (by population sample) as the highest factor level of impact, and this highlight the importance of project management and how it is considered a main requirement for any project success.

There is impact of project manager factors on organizational performance on construction companies in Jordan, and it was noticed that population sample don't clearly differentiate between project management & project manager factors, and this require more focus on improvements of project team knowledge and stand on the differences and related to project management and project manager factors.

There is impact of client related factors on organizational performance on construction companies in Jordan, and more emphasize on client satisfaction should be considered as it is one of the most important factor on project success measurement.

It is highly recommended to enhance the awareness of the organization employees about the critical success factors and the importance of these critical success factors optimization for the organization.

Customer/end user satisfaction should be highly considered, project should be delivered to customer/end user with compliance to his requirement on all aspects (Specification, Quality, Time, Etc.....)

Project team (engineers level and above) have to be qualified by trainings and continues education to understand the managerial and biz. Concepts connected to their role and job.

Constructions Staff is needed to be trained about construction time especially deliver and avoided material waste time.

At the end we suggest is to cover much wider success factors for study (Contractor related factors, Team members related factors), and to expand for bigger population sample to include bigger number of organizations, third suggestion is study the impact of the factors on other directions (Environmental performance, Green building, etc..).

References

arson E.(1995), 'Project partnering: results of study of 280 construction projects.' Journal of Management in Engineering vol. 11, issue 2, p. 30-35

Carl Vansteenbrugge(2014),The use of Performance Measurement systems to realize strategic alignment within the business architecture.

Department of statistic, Sub-sector (construction), Based on the input-output tables Jordan, (2017), www.dos.gov.jo

Feyyaz YIildiz, Mustafa Hotimlz(2011), Construction of Multi-

Dimensional Performance Measurement Model in Business Organizations: An Empirical Study, Journal of Economic and Social Studies.

Gray (2014), Doing Research in the Real World, 3th Edition, University of Greenwich, UK, pp 21.

Jordan Chamber of Industry, The Construction Industry Sectors(2018), www.jci.org.jo

Robert B.carton, (2004),Measuring organizational performance.

Sumesh Sudheer Babu , Dr.Sudhakar(2015), Critical Success Factors Influencing Performance of Construction Projects .

Zwikael,O.& Globerson, S (2006), From Critical Success Factors to Critical Success Processes, International Journal of Production Research, vol. 44, no. 17, pp. 3433-3449.