STANDARDIZING RISK ASSESSMENT IN KUWAIT PUBLIC CONSTRUCTION PROJECTS

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Abstract - The construction industry is vital for any nation and an indicator of its development level. Therefore, the need to deliver large-scale complex projects rises which is associated with the obligation of employing project management (PM) firms to control the budget, quality, productivity, delivery time, and to manage resources in the most efficient ways. This research aimed to evaluate the performance of the PM firms in Kuwait's governmental construction projects and to develop criteria, guidelines, and recommendations for the selection of the best project management services within the government regulations and the administrative system. The research was carried out by conducting comprehensive semi-structured interviews with well-defined questions with top managers working for owners, PM, consulting, and contracting organizations. The data collected from the interviews along with the study of the Request for PM Proposal and Technical Proposal submitted by the PM led to identifying the problems in the existing system. These problems are: (1) misunderstanding of the services that should be provided by the PM, and (2) using rigid criteria lists to evaluate the PM proposals and performance for all project types. At the end of the research, a suggested list of recommendations was established in order to improve and optimize the PM performance in the governmental projects in the state of Kuwait. The results of this research are applicable, to large extent, to other developing countries, especially those in the Gulf Cooperation Council (GCC) since these countries share similar economic, political, governmental, geographical, technical, social and cultural characteristics..

Keywords - Project management, Construction management, selection criteria, evaluation criteria, Kuwait.

I. INTRODUCTION

In recent years, the rapid development in the governmental construction industry in the state of Kuwait raised the need to employ firms, especially American firms (including Turner, Bechtel and Parsons). Aiming to reduce cost, increase productivity, and improve quality in a more efficient way.

Despite the fact that the Government of Kuwait has been contracting with Project Management Firms for large scale projects for a while, these projects are still facing several problems. These problems could include time delays, cost overrun, and quality defects depending on each project case.

The Ministry of Public Work (MPW) stopped hiring PM firms to manage its projects mainly due to their disappointment in achieving better results in these projects.

II. PROBLEM STATEMENT

As the hiring of PM/CM firms had proven to be effective in many different countries and in many projects in the private sector in Kuwait, one could argue that the poor outcomes of the governmental projects in the State of Kuwait even with the hiring of PM/CM firms could be due to one of the following hypotheses:

Hypothesis 1 (H1): The currently used selecting criteria are the reason behind the failure of the PM/CM in the governmental projects in Kuwait.

The current PM/CM selecting criteria used by the governmental sectors in Kuwait might not be the best practice to select and hire the required PM/CM firms. Currently, the common practice in the governmental sectors in Kuwait in this regard is to assign a committee to shortlist PM/CM firms with previous experiences that are similar and compatible with the project needs. Then, the aforementioned committee would evaluate the firms' technical proposals based on a criteria form established by the Planning Ministry and give each proposal a score. The criteria form established by the Planning Ministry is, also, used to evaluate the designers and the contractors' technical proposals without taking into consideration the different nature of the provided services by the PM/CM firms.

Hypothesis 2 (H2): The currently used performance evaluation criteria are the reason behind the failure of the PM/CM in the governmental projects in Kuwait.

Throughout the project lifetime and after the project delivery, the performance of the PM/CM firm needs to be evaluated. This evaluation is essential to ensure the best performance and to keep the firm motivated to provide the owner with its best services quality. Also, this will ensure that the poorly performed firms are eliminated and excluded from future projects. In addition to that, the PM/CM performance evaluation could help in issuing lists for lessons learnt and the problems that should be avoided and dealt with in future projects.

At the present time, most of the governmental sectors in Kuwait are, also, using the performance evaluation

criteria established by the Planning Ministry. The evaluation is mostly carried every six months and if firm scores less than 60%, its contract will not be renewed and it will be excluded from any upcoming bids for the next two years. Again, these performance evaluation criteria are used for contractors, designers as well as for PM/CM firms.

Hypothesis 3 (H3): Lack of understanding of the nature of services provided by the PM/CM firms.
Some would argue that the PM/CM firms are not given the full authorities that are supposed to be assigned to it. Also, there are no well-defined liabilities undertaken by the PM/CM according to their contracts with the governmental sectors in Kuwait. This could be due to the fact of misunderstanding the nature and the type of services the PM/CM firms should provide; hence the inappropriate adoption of the PM/CM firms in the construction field in the State of Kuwait.

III. OBJECTIVES

As has been discussed previously, there has been several pitfalls in the governmental projects in Kuwait in the last few years. This research aims to pinpoint the reasons behind these pitfalls and the unsatisfying projects' outcomes despite hiring project and construction management firms to overcome such failures.
In order to pinpoint these obstacles; the constructed hypotheses in the previous section will be studied to highlight and identify the system's shortcomings in adopting and implementing the project management services in the governmental sector in Kuwait.
Also, two lists, PM/CM selection criteria and performance evaluation criteria, will be established and compared to the lists used by the governmental sectors in Kuwait. Along that, a recommendation list will be suggested at the end of this research based on the research results.

IV. RESEARCH METHODOLOGY

To achieve the objectives of this research, a methodology with several tasks had been established and carried on as illustrated below:

Task 1: Literature Review and Data Collection
Task 2: Semi-Structured Questionnaire
Task 3: Data Analysis and Results
Task 4: Recommendations

V. LITERATURE REVIEW

It had been noticed that the majority of the governmental mega projects in Kuwait where PMS are implemented are facing several problems. These problems vary depending on each project case and could include time delay, cost overrun, and quality defects. A study based on data collected in UAE [1] proved the positive influence of the performance of the project management firm on the project success. Also, it was found that both (1) the set PM key performance indicators and (2) the PM staff influence the project success significantly while PM policy and strategy were less significant.
Another study [2] indicated that even though hiring PM is valuable to the project success, its value depends on the culture and the adoption of the project manager within the organization.
A Korean study done by Lee et al. [3] developed a management performance evaluation model for construction firm. This study was carried on two stages; (1) Deriving key performance indicators and assigning weights to each, and (2) Applying the performance data collected from the field to the developed model. The main four classifications for the key indicators for this study were; (1) Finance, (2) Customer, (3) Internal business process, and (4) Learning and growth-related indicators. Surprisingly, the researchers concluded that the construction firms' first priority is the customer satisfaction. This conclusion might differ for the other parties involved in the project as each might have his own objectives and expectations.
In another study [4], they formulated four hypothesizes, three of them were regarding a) the effect of the manager's attention to the success criteria and b) the project's performance corresponding to these criteria according to: project type (H1), industry sector (H2) and the traits of the project manager (H3). The fourth hypothesis (H4) consider the relationship between the success criteria and the reported project success.

VI. DATA COLLECTION

There are several Kuwaiti governmental sectors that hired or still hiring PM/CM in its projects. For example, Kuwait University Building Program (KUBP) hires project and construction management for the huge new university city at Al-Shadadiya. Also, National Guard, Transportation sector of the Ministry of Public Work (MPW), Mega Projects sector of MPW, and Ministry of Awqaf and Islamic Affairs (MAIA) implemented the PM/CM approach in its projects.
Through interviewing the participants with the semi-structured questionnaire, 41.3% of them were satisfied with the performance of the PM/CM in the previous governmental projects and 60% of the owners' personnel were satisfied.
For this research, one of the main concerns was to study the criteria at which the PM/CMs' technical proposals were evaluated. Most of the governmental sectors are using the criteria list that was used by the Ministry of Planning (MP) as MP was the hiring entity before every sector was given the privilege to hire its

PM/CM -Table 1-. It should be mentioned at this point that the MP and all the governmental sector in Kuwait are using the same selecting criteria for contractors, designers, and PM/CM without considering the different nature of the services provided by each.

Table 1: Evaluation Criteria of Technical Proposals with Weights Issued by MP

No.	Evaluation Criteria	Weight
1	Project Comprehension and Work Schedule	35%
2	Staffing	25%
3	Curricula Vitae	30%
4	Consultant's Experience	10%

VII. QUESTIONNAIRE

Comprehensive structured interviews with well-prepared questions were held in order to have a clearer vision of the current PM/CM role and performance, the best selection criteria, and the best evaluation criteria based on the experience of the participants in this field in the governmental sector in the State of Kuwait. For the purpose of this study, the researcher sought to interview top experts in the construction field from different participants in the project life cycle; the contractors, designers, PM/CM, and the owners whom in this case are represented as the governmental sectors personnel.

The questionnaire is developed after a comprehensive study for the previously published researches, collecting documents submitted by the PM/CM or established by the governmental sector for the PM/CM, interviewing key personnel in the construction field whom are working as PM/CM or have dealt with PM/CM, and consulting academic advisors.

The questionnaire is divided into three main sections along with a fourth section to collect personal information about the participants.

The questions in section A of this questionnaire were directed to study the opinions regarding the project success indicators in general, investigate the current role of the PM/CM in the governmental construction projects in the State of Kuwait, opinions in the PM/CM selecting process and the evaluation of the PM/CM performance in the state of Kuwait, discuss the different methods of implementing and adopting the PM/CM services, and PM/CM alternative options. The questions were based on a deep literature review and research regarding; project success criteria, success factors, PM/CM role, and the current hiring process.

The questions in section B and section C were designed in order to get the participants' opinion on how important is each indicator as a key evaluation criterion in suggested lists for both; the PM/CM selection process and the PM/CM performance. The indicators in these suggested criteria lists were selected carefully after studying the different technical evaluation criteria, MPW technical evaluation sheet, and previous technical proposal request and technical proposal submitted by PM/CM firms. In addition to consulting engineers with long experience in preparing or evaluating this type of technical proposals.

Section D, as previously mentioned, is mainly to collect some basic personal information about each of the participants such as; their position title, organization, affiliation they work for, years of experience, and the number of projects they were assigned to as project manager (if any).

VIII. PRELIM DATA ANALYSIS

The first question was devoted to understanding how people from different affiliations in the construction field identify project success indicators. The participant was provided with a list of suggested success indicators to choose from and was allowed to add any indicators he/she saw fit.

In general, for a project to be handed within budget, time schedule, and the required quality were ranked, according to this questionnaire, as the highest three project success indicators with a sum of 45.4% of the total answers. Next came the owner satisfaction and the project compliance to the term of references (TOR) with 11.2% and 8.9%, respectively. After that came the end-user satisfaction and the adherence to the required standards of the safety measures with 7.5% for each - see Figure 1-.

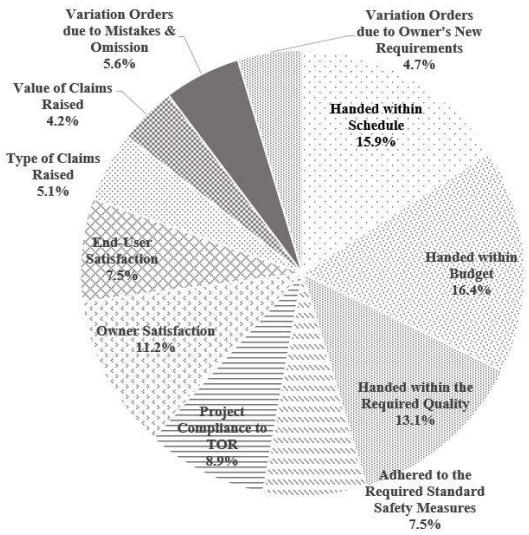


Fig.1 The Percentages that Each of the Project Success Indicators

When participants were asked about their opinion regarding the PM/CM current role in the governmental projects in Kuwait, 84.6% of them either agreed or strongly agreed that the governmental sector in Kuwait needs to hire PM/CM in their projects –see Figure 2-. Only 10.3% of the participants disagreed the sector needs to hiring PM/CM.

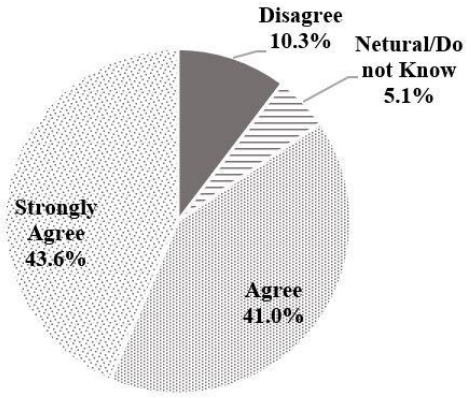


Fig.2 Governmental Sector in Kuwait Need to Hire PM/CM, according to Participants

The researchers also asked the participants if they would consider the stage of evaluating the PM/CM during the selecting process as an essential factor to the project success. Surprisingly, 18.4% of the participants strongly disagreed/disagreed that the evaluating stage is essential to the project success. While, 23.9% of them agreed to that and 57.6% strongly agreed. Analyzing the results based on the different affiliations of the participants, it was obvious that almost all of the participants from the owner and the PM/CM affiliations strongly agreed/agreed that the stage of evaluating the PM/CM during the selecting process is essential to the project success. On the other hand, one third of the designers and the contractors either strongly disagreed or disagreed with that suggestion. After that the participants were asked whether the PM/CM selecting process in the governmental sector in Kuwait is satisfying or not. In general, 35.4% of the participants did not know which might implement the fact that the process is not clear to them. And, 44.1% of them were either satisfied or strongly satisfied with the current PM/CM selecting process in the governmental sector in Kuwait.

IX. RECOMMENDATIONS AND FUTURE RESEARCH

After thoroughly studying the results and the analyzed data in this research, the reasons behind the unsatisfying results of hiring PM/CM are identified after proving the three hypotheses previously identified. These reasons behind the unsatisfying results of hiring PM/CM could be summarized in the following:

- Lack of understanding the type of services that should be provided by the PM/CM (H3). Hence; misevaluating their performance and only considering the actual working hours as a measure of PM/CM performance.

- Also, due to the misunderstanding of the nature of the services provided by the PM/CM; most of the Kuwaiti governmental sectors are adopting the PM/CM inappropriately. As the PM/CM is not given the full authorities that should be assigned to him or undertaken any liabilities that are supposed to hold him responsible.

- In addition to that, using the same criteria lists to evaluate the PM/CM technical proposals and performance for almost all the projects without considering the different nature of each project (H1 and H2) might be a reason behind this poor projects' outcomes.

This research fulfilled its objectives, however, other research topics immerged from it. Such topics are; (1) evaluating the current responsibility matrices used in the Kuwait governmental sectors projects, (2) updating the current PM/CM submittal forms and customizing it as per project type, (3) evaluating the relationship between the stakeholders and its influence on the project success in Kuwait, and (4) studying the art of financial and technical negotiation at early stages of a project and its impact.

X. SUMMARY AND CONCLUSION

This research aimed to evaluate the performance of the PM firms in Kuwait's governmental construction projects and to develop criteria, guidelines, and recommendations for the selection of the best project management services within the government regulations and the administrative system. The research was carried out by conducting comprehensive semi-structured interviews with well-defined questions with top managers working for owners, PM, consulting, and contracting organizations.

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