

Research Paper

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Assessing the role and significance of project selection by the contractors in the Saudi construction industry

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Abstract:

Introduction: Construction companies hold great significance in Saudi Arabia due to new developments taking place in the region. A project automatically turns out better if it has been selected based on the level of expertise and resources available to the construction company and vice versa.

Purpose: The study aims to investigate the importance of project selection by the contractors within the Saudi construction industry.

Methodology: The study has employed a quantitative research design to conduct a survey through the administration of questionnaire. A total of 46 employees from construction companies were selected. A questionnaire was distributed among maintenance contractors, contractors, and construction contractors.

Findings: The findings have shown that mostly organizations were unclassified or classified under the fifth category (projects valuing AED10,000,000 or lesser) (34.8%). Most of the respondents (94.4%) agreed that consideration of the project selection is important. Moreover, there is a positive correlation between the level of importance given to the project selection and the organizational size of the respondents. Success factors play an important role in the project selection phase.

Practical implications: Careful project selection is the first step toward the success of the construction company, so it needs to be carried out carefully.

Keywords: contractors, construction company, project selection, Saudi Arabia

1 Introduction

The construction companies gain their reputation from the timely and quality delivery of their project performance. The small- and medium-sized projects are the most troublesome projects concerning the industry's reputation. The association of clients varies with small- and medium-sized projects ultimately leads to conflicts (Parvan et al. 2015). However, larger projects, if dealt with professional aspects, may impose a positive impact on the industry's reputation. The small construction companies do not have strong organizational aspects and are inefficient to control and monitor the projects efficiently; therefore, they are likely to suffer more as compared to the big construction companies (Parvan et al. 2015). The contractors need to manage specific projects effectively as there is rapid growth in the client's demand, regulatory agencies, and increasing competition (Huang 2011).

The success of any project depends on the agreement done with the stakeholders that is also repeated at configuration review points until the project lasts. Turner (2004) recommends a collaborative working association between the project manager and the owner and considers the project as a partnership. The project manager should be empowered with the owner and receive guidance on how they think the project should be best achieved. This allows flexibility to the project manager to deal with unforeseen circumstances as they tend to achieve the best. The selection of an adequate construction project by the contractor tends to increase the chances of its successful completion (Banaitiene and Banaitis 2006). Moreover, it is important to select the project wisely to fulfill client goals effectively.

Project selection in the construction companies appears in the form of bid or no bid decision. The company will be obliged to fulfill the contractual obligations if the contractor bids for a project and then wins it. The project then becomes one of the contractor's projects that needs to be managed and aligned based on the company's strategy. The bid or no bid decision is sometimes referred to as the project selection decision, which is a critical decision.

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Decision-making at the earliest stages of construction projects involves a process of gathering information from disparate noisy sources. The anticipative contractors are aware of the importance of doing initial research related to factors affecting the bid or no bid decision (Wanous et al. 2000). These contractors evaluate the project completely before committing to a construction project. It is fundamental to build a bridge between the company strategies and their project selection decision in terms of the success and improvement of the construction company.

Kaiser et al. (2015) showed how Philipp Holzmann AG construction company, despite being the biggest construction company, filed for insolvency. It was due to the acceptance of risky projects by the company. The decision shows that the selection of the right projects serves for the success of project-based business models. The selection of projects by the contractors is conducted during tendering. The process of tendering provides differential choice to the company, which quotes the lowest price, along with a short construction cycle. A study conducted by Huang (2011) showed that acceptance of the project with the lowest price is a major cause of facing difficulties in completing the project.

The selection of projects is a serious business, and very often insufficient attention is given to whether a project idea has real value or the projects may be selected to satisfy the powerful players in the industry. The majority of the medium- and small-sized construction companies have difficulties in determining their workload (Parvan et al. 2015). Careless project selection leads to ineffective use of resources. Support of a project to satisfy short-term demand may lead to long-term invaluable work. This kind of decision by the company managers causes resource problems due to that the company recourses are tying up with these projects (Kaiser et al., 2015). Careless project selection leads to the ineffective use of resources. For instance, supporting a project to satisfy short-term demand often leads to long-term invaluable work causing resource problems. A construction company may no longer have the resources to pursue the projects if their resources are tied up in insignificant activities.

The project selection contributes to the contractor's practice performance. The bid or no bid decision and the percentage mark-up selection are very important as it influences on the long-term performance of the construction firm. Moreover, the improvement of the contractor's selection of the project gives significant benefits to the contraction industry and consequently to its client. The decision of selecting a project is complex and characterized as an unstructured process. Careful project selection is the first step toward the success of a construction company because failure to evaluate project profitability

and the heavy operating expenses are among the main reasons for the failure of appropriate project selection. It is important for the contractors to realize the significance of project evaluation before committing themselves to a project. In terms of success and improvement of the construction company, building a bridge between a company's strategies and its project selection decision seems to be fundamental. Therefore, the present study aims to assess the role of project selection by the contractors within the Saudi construction industry. The current study holds significance as it elaborates the crucial success factors essential to gain project success. Moreover, the study will help the researchers to develop a framework that addresses the existing problems.

2 Material and methods

A descriptive study design was applied based on a survey-based questionnaire. The core preference of this study was to assure that the study maximizes the opportunity to realize its aim and objectives. Hence, the study design was taken into consideration the research questions for determining the required data and how the data were examined. A random sampling technique was used to target contractors working in construction companies. A number of registered construction firms in Saudi Arabia is 19,302, as per the report of the Ministry of Commerce and Investment (Figure 1). Each member of the population has an equal opportunity of being selected. The members of the population selected were excluded from additional re-selection so that each member of the population was selected once only irrespective of replacement of the selected members of the population.

The questionnaire was distributed in Saudi Arabian constructors, where the mother language is Arabic. Therefore, it was optimum to write the questionnaire in Arabic and English. The questionnaire was distributed and collected through potential participants for carrying out the questionnaire distribution face-to-face to the targeted population in Saudi Arabia. Afterward, the nominated individuals were targeted from four major cities in Saudi Arabia: Riyadh, Jeddah, Makkah Almokarmah, and Almadina Almonawarah. The data were collected in 28 days. Out of 70 distributed questionnaires, only 46 questionnaires were received, which yields a response rate of 65.7% from the distributed questionnaires.

The questionnaire comprises two sections: the first section collects demographic details of the respondents including the organization classification, yearly turnover, and a number of yearly new contracts. The second section

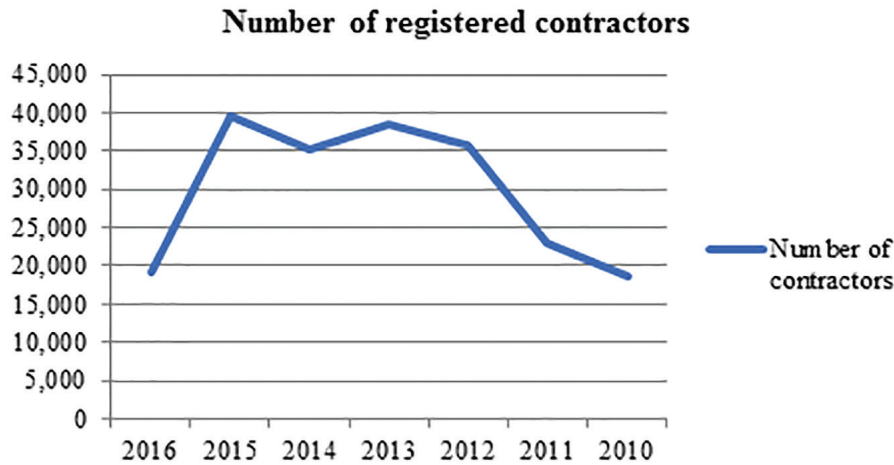


Fig. 1: Graph showing the number of registered contractors.

investigates the organization’s characteristics for assessing the role of project selection by the contractor for the success of the construction industry. The questionnaire is distributed among the Saudi construction contractors, maintenance contractors, and contractors who are associated with both construction and maintenance work.

The questionnaire comprises 72 success factors obtained from the literature review based on the importance of small construction companies in Saudi Arabia. The study has used a similar questionnaire proposed by Hutchings and Christofferson (2000) in the USA. However, the questionnaire was edited based on the suitability of the study’s objective and relevance for the construction industry in Saudi Arabia. A pilot study was conducted to investigate the accountability and answerability of the questionnaire. Professionals in the field of the construction industry were included in this pilot study, and questionnaires were distributed to two professionals in Saudi Arabia. The statistical package for social sciences is used to analyze the data through its frequency analysis function. Furthermore, a graphical representation is provided to illustrate the results more clearly. Descriptive statistics including frequencies and percentages were used to present the participant’s profile. Wilcoxon signed-rank test was used to rank the success factors related to the project selection. One-way ANOVA was used to find the differences based on project selection, contractor’s size, and contractor’s classification.

3 Results

The study has intended to rank the factors that assess the role and significance of project selection by the contractors

in Saudi construction industry. In addition, the organizational characteristics are shown in Table 1 in which the majority of the contractors were working in contracting organizations (78.3%). The findings have shown that mostly employees were working as unclassified (47.8%) or fifth category (projects valuing AED10,000,000 or lesser) (34.8%) contractors.

Table 2 shows the success factors that contribute effectively to the project selection. Among these factors, the findings have indicated that fair pricing or value, job selection or competitive pricing, product affordability or updated products, variety of products and client selection, income sources, and business were important success factors.

Table 3 shows that majority of the respondents (47.3%) claimed that the significance of project selection was very important, whereas one respondent (1.1%) indicated that the significance of project selection does not affect the project selection. A total of 29.7% of contractors responded that the significance of the project selection is important.

Table 4 examines whether the respondents from different types had different opinions on the level of importance given to the project selection stage. The results were significant regarding the respondents with differing types of classification status and differing sizes ($p = 0.025$, $p = 0.008$, respectively).

Table 5 shows statistical significance in different responses made between respondents on the size of contractor and importance level given to the project selection phase ($p = 0.008$). There exists a positive correlation between the level of importance given to the project selection stage and the organizational size of the respondents, which supports the view that the project selection stage is important to those investing in large projects.

Tab. 1: Demographics related to participants profile

	Frequency	Percentage
Organization's background		
Contracting	36	78.3
Maintenance	2	4.3
Contracting and maintenance	7	15.2
Classification		
Unclassified	22	47.8
Fifth category (projects valuing AED10,000,000 or lesser)	16	34.8
Under fifth category (projects with a value between AED 8,000,000 and AED30,000,000)	7	15.2
Respondents profile		
Financial	2	4.3
Admin	4	8.7
Engineer/Architect	12	26.1
Project manager	17	37.9
General manager	10	21.7
Age of the organization		
Less than 5 years	13	28.3
6–15 years	26	56.5
More than 16 years	6	13.0
Turnover		
Less than 1,000,000	20	43.5
From 1,000,001 to 5,000,000	21	45.7
More than 5,000,000	4	8.7
New contracts		
Less than three contractors	26	56.5
4–10 contractors	19	41.3

Tab. 3: Significance of project selection

	Frequency	Percent
No effect	1	1.1
Not important	4	4.4
Neutral	15	16.5
Important	27	29.7
Very important	43	47.3

Tab. 4: ANOVA test (importance of project selection * classification status)

	Sum of squares	Mean square	F	Sig.
Project selection	4.473	4.473	5.227	0.025
Classification status	75.316	0.856		
Total	79.789			

4 Discussion

The main findings of this study support the importance of considering the stage of project selection. It was found that most of the contractors practice the evaluation of the proposed project through negotiations with in-house experts. Relatively a few contractors made use of a decision aid to evaluate their potential projects. The respondents to the questionnaire survey emphasized the importance of considering the company's historical data records to help produce the bid decision.

Different contractors responded differently about the importance of project selection. Therefore, it can be claimed that there is a direct correlation between the level of importance given to the project selection stage and respondents' organizational size. This would support the view that contractors need a model or a decision aid to

Tab. 2: Factors related to project selection

Success factors	Very important	Important	Neutral	Not important	No effect	No. of responses	Rank
Fair pricing/Value	19	2	3	0	0	46	4.34
Job Selection/competitive Pricing	22	1	2	2	1	46	4.28
Product Affordability/updated Products	15	2	2	1	0	46	4.23
Variety of products	19	1	6	2	0	46	4.19
Client selection	26	1	2	3	4	46	4.13
Other income sources	12	2	8	3	0	46	3.95
Business	8	2	1	3	1	44	3.75
Location of building Lots	3	3	7	5	1	46	3.63

Tab. 5: ANOVA test (importance of project selection * contractor size)

	Sum of squares	Mean square	F	Sig.
Project selection	6.111	6.111	7.300	0.008
Contractor size	73.677	0.837		
Total	79.789			

help them become experts in making decision on the processes involved in project selection.

Several problems that are arising in the construction sector are complex and complicated and usually involve great subjectivities and uncertainties (Sheng 2018). Various investigations have been observed focusing mainly on the evaluation of influence of uncertainty on one aspect of the project concerning time, cost, and safety. Similarly, the findings of this study have confirmed the aforementioned statement by witnessing that competitive pricing and updated products are important factors that can lead to the success of project selection if considered appropriate.

Some investigators have also explored the risk management for the construction in terms of specific project phase that may include feasibility and conceptual phase (Mok et al., 2015; Eastman 2018). Construction projects comprise more inherent uncertainties because of the engagement of several contractors such as designers, owners, contractors, suppliers, and so on. Therefore, the findings of this study have considered client selection as one of the factors toward the selection of a construction project. This factor can lead positively or negatively toward the selection of a construction project. Previous studies have also witnessed such findings. For instance, client selection shows both positive and negative influence on the project goals such as cost, safety, quality, sustainability, and time (Ozcelik 2016; Oakland and Marosszeky 2017).

Construction projects are commenced in a dynamic and vibrant environment that may result in the situation of uncertainties because of additional interrelated parameters. Taylan et al. (2014) assessed the construction projects and the risk associated under uncertain situations. Similarly, the findings of this study indicated that the location of building or construction project should be appropriately selected as it can have a significant impact on the performance of stakeholders associated with it. Decisions that are specific and related to project selection are critical for the contractors of construction projects. These decisions may include both positive and negative points in cases where the projects are commenced through mechanism than trending. Generally, these decisions may be complex because of the

selection of a project associated with many different factors that may impact the results. Pekuri et al. (2015) evaluated the project selection in terms of business management to comprehend the role of business models, specifically in project selection. The outcomes suggested that the project selection is never guided by any business model, but it has been observed that the decision-making procedure is more dominant by short-term factors. These factors may include the profitability and the requirement of work. Therefore, the estimation mainly determines the type of projects that were considered by the companies regardless of competence.

Moreover, Asgari et al. (2016) illustrated the importance of competitive bidding while allocation projects in the construction market. The study highlighted several factors considered by the contractors while determining their mark-up. A model was developed to evaluate the mark-up related to the financial standing of the contractor. It is recommended to moderate the optimal policy to reduce both the need for work and project selection attitudes. Costantino et al. (2015) proposed an innovative advancement to assist the managers in assessing the construction projects during the phase. The requirement and complexity of the understandable approach to construction projects assist in looking for different procedures of the risk estimation. The estimation of risk at the planning phase not only makes rational investment but also manages projects during construction (Rejment and Dziadosz 2014).

The findings showed that competitive and affordable selection of a project is another important factor that leads to the success of project selection. This aspect is the third-ranked success factors that help contractors in selecting a project. Construction organizations are facing several challenges in terms of choosing the most appropriate option from several impending construction projects (Walker 2015). Construction companies are incapable of simultaneously undertaking several projects because of limited or restricted resources (Oakland and Marosszeky 2017). These companies must choose to make investments in the projects that are most beneficial and feasible to the business. The selection of construction projects is complicated because it involves several decision-making criteria. The finding of the present study is supported by the findings of the previous study (Lin and Yang 2016). The study has found factors that are considered important for the project selection: resources, financial risk, profit, management capacity, and technical capabilities. These factors may assist to evaluate the criteria that may assist the construction companies in choosing the premium projects (Lin and Yang 2016).

Different studies have provided different insights and methods to assist the managers in assessing project

selection in construction management projects. It has been found significant to employ an appropriate strategy to attain the probable outcomes positively. The Saudi Arabian construction industry has contributed to the development of the economy over the past decades because of increased oil revenue. The construction industry is contributing 40% to the Kingdom's economy (Ikediashi et al. 2014). Olaniran (2015) assessed the impact of cost-based contractors on the performance of a construction project because selecting contractors is entirely based on mentioned prices that may cause unsatisfactory performance in the construction projects.

The study has a few limitations as it only considered the region of Saudi Arabia, particularly Jeddah. Such that, to develop generalized results, the researchers need to include other regions as well. The study has demonstrated the importance of project selection in the success of the construction business. A project needs to be more concerned in terms of its performance that significantly affects the small contractors' reputation either positively or negatively. The results have depicted that careful selection of project is the first step toward the success of a construction company; therefore, it should not be carried out carelessly. Lack of managerial experience in expanding operations is found to be a significant reason for business failure. Companies lack the capability to select an appropriate project due to their failure to evaluate project profitability and the heavy operating expenses. The project's risk and the capacity to resolve problems encountered by the project team appear to be major elements in the evaluation of a project's success. The findings have presented the information and knowledge to the construction professionals regarding the inherent influence of choosing the contractors within the industry. The study has made distinct and strong arguments regarding the issues linked with the selection of contractors of construction projects based on cost.

5 Conclusion

The pattern followed to select new projects to explain how much of an organization's current awareness can be used in a project. An organization probably has the needed competence for delivery, and the project will be successful if the new projects are effectively organized with previous projects and fit in the current business models. On the contrary, the project will not deliver efficient outcomes if short-sighted factors control competence in decision-making. More appropriate decision-making will allow

managers for developing procedures for particular business models and different types of project, which will help in achieving the objective to reduce the wasted resources and amount of variation. Well-managed and designed procedures are essential productivity drivers, which will improve the financial performance of a company and competitiveness, and boost customer satisfaction if the advantages are emphasized respectively in prices.

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