

Predictors and Consequence of Project Success in UAE: A Model Development

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<p>Article history Submitted: 1 December, 2021 Revised: 09 December, 2021 Accepted: 17 December, 2021</p>	<p>Abstract Project success is critical for the economic growth of countries. The rate of project success in developing countries is lower than developed nations. Based on the resource-based view, this study proposes that there are two critical determinants of project success which include the project characteristic (management support, employee commitment, training and development) and project manager experience as moderator. The project success is expected to affect the organizational performance of construction companies in UAE. Further testing of the proposed model will be conducted in future studies along with other variables and countries</p>
<p>Keywords: <i>Project Success, Construction project, UAE, Resource based view</i></p>	

1. Introduction

Project success is an important for the economy and the development of any country. Among the project, construction is vital and supportive to other economic activities. This is because construction is involved in all economic aspects from education, to health, public and private infrastructure, and investment [1]–[5]. For this reason, researchers tend to study the project success as it helps in improve the project effectiveness and completeness [6], [7]. Nevertheless, the project success is limited and there is high rate of project failure especially in the public construction projects [8]–[12].

The effect of project failure is not limited to the project itself, but it is extended to all economic indicators and sectors. The gross domestic product, employment, and revenue are affected by the project’s failure [13]. Thus, the project success is essential but yet it is subjective, and it depends on the evaluators of this success as well as the criteria of assessment. Research evaluates the project success based on what known as the “Iron Triangle” which includes the compliance with time, cost, and quality [14]–[17].

Successful projects were the center of attention of researchers. Several authors have used different lines of research to identify the variables or conditions that lead to successful projects. Among these lines of research, the greatest number of publications is related to critical success factors [4], [18]–[25] and project management maturity models [14], [26]–[28]. The current business environment shares the general assumption that the adoption of project management methodologies driven by international bodies of knowledge (BOKs) and the achievement of maturity in this field result in improvement of both organizational performance and project performance [15].

Since previous studies only focused on the CSF, few have examined the consequence of project success. In United Arab Emirates (UAE), the country is known by conducting Mega Project such as the tallest building in the world and other well-known projects such as the Palm Island. However, at the medium level, there is a need to ensure that the public project in the country is successful. Against this background, few studies have examined the predictors and consequences of project success in UAE. In addition, the majority of previous studies was conducted in developed countries such as United Kingdom (UK), Norway, US, France, Germany, and Australia and focused more on factors that reflect the situation in these countries [29], [30] while in emerging economies such as UAE, few of the previous studies was conducted on this country. Furthermore the success rate of projects in developing countries is very low at 20% [31], [32].

Success rate of projects in developing countries is 20% [31]–[33] and few studies examined this issues in these countries. The literature of project success is dominated by exploratory studies that aims to identify the factors that affect project success using method of exploratory factor analysis. Confirmatory approach has been used by few studies in the literature and there is a need to move from the exploratory to the confirmatory approach using established theories such as resource-based view and other organizational theories in the literature [34].

Previous studies lacks in term of identifying the consequence of successful project on the organizational performance of companies. Balanced Scorecard (BSC) can be used to identify the degree to which the success of project can affect several

aspects of the organizational performance. However, few have done confirmatory approach to find the causality of the success factors on the project or the organizational performance [34]–[36].

Accordingly, the purpose of this study is to develop a framework of the predictors and the consequence of project success in UAE. The study aims to develop a framework that can be used by the decision makers in UAE to enhance the quality of project and ensure high success rate of the public domain projects. The next section discusses the literature and proposes conceptual framework as well as the proposed hypotheses, and conclusion.

2. Literature Review

2.1 Project Success

The construction industry is dynamic in nature and the concept of project success is subjective in nature. Success means different thing for different stakeholders. Nevertheless, the majority of the literature is on the opinion that success is to deliver the project on time within the specified cost and quality. [37] refers to project success as stated in terms of meeting three objectives: 1) completed on time, 2) completed within budget, and 3) completed at the desired level of quality. Project success is defined as achieving results much better than expected or normally observed in terms of cost, schedule, quality, safety, and participant satisfaction ([38]. Shenhar et al. [39] describe success as “gaining advantage, superiority, victory, accomplishment, achievement, and added value. In other words, it is to achieve advantage and accomplish the project based on the criteria that was set prior to starting the project.

Construction projects involve high-risk undertakings, and for a project to be successfully implemented in today’s business environment, resources (people, equipment, materials), time (task durations, critical path), money (costs, profits, contingencies), and scope (project size, goals requirements) must be managed effectively to stay competitive and profitable in the market [40]. These factors can be achieved through adequate planning and having a good project control system in place to ensure that the project is implemented effectively. Driven by a desire to improve project success, understanding the attributes of success becomes very crucial to improving construction efficiency, safety, productivity, and saving money and time [41].

Researchers have derived many factors to understand the project success. Most of the studies conducted a literature review and refined the factors to come up with a set of factors that are expected to affect the project success. For example, early works on CSFs can be traced back to [42] who chose factors that predict success. These factors were then tested on 16 projects and the results showed excellent correlation between project success and achievement of the factors. They suggest that there are four CSFs namely a comprehensive facility team, teamwork-boosting policy, sufficient of experience in handling various aspects of facilities, and information optimization in the planning and design stage. They mentioned that success on a project means that certain expectations for a given participant were met, whether owner, planner, engineer, contractor, or operator. These expectations may be different for each participant. Another pioneer work in project management and critical success factors is the work of [22] who consider the term success as subjective; they mention that there are many stakeholders involved in a project like user, owner, contractor, and project manager. The perception of project success may differ from one stakeholder to another. For instance, a project might be successful for user, but the same project is a failure for the contractor.

Other researchers measured the success of the project or the performance using the three criteria of time, cost, and quality. For example, [43] seek to distinguish the CSFs of project success according to the project objectives of budget, schedule, and quality. The analytic hierarchy process (AHP) is adopted to determine the relative importance of success-related factors. 67 success-related factors are considered. These factors are grouped under four main project aspects, namely, project characteristics, contractual arrangements, project participants, and interactive processes in the hierarchical model for project success. Using a questionnaire of experts with 20 years of experiences, the findings indicated that project manager competency is needed for achieving the trio objectives.

Cooke-Davies [44] conducts a study to find the real success factors of project success and has used 70 large multinational and national organizations. The author explains the project success as effectiveness of the project in achieving the objectives and project management success as efficiency of the project in regards with cost, time, and quality. [45] in their literature review, study have chosen seven frameworks and concluded that project success as an abstract concept, determining whether a project is successful is subjective, and extremely complex. However, [46] classified success factor under two main categories, one being hard, and objectives, tangible and measurable while the other soft, subjective, intangible and less measurable. These authors also considered attainment of goals such as satisfaction, effective communication, and relationship factors critical to project success between project participants and absence of conflicts are considered a sign of project success.

Recent studies on project success included factors related to technology and knowledge management. For example a study by [29] in Germany explored the literature to identify 490 factors. Using factor analysis, the result showed that 41 success factors could be considered as success factors that include re-use knowledge, qualified project manager, composition of project team, domain-specific, competence in technology and technology management, and standardization are among the most important factor. More studies related the success to the newly developed concept such as knowledge management. For example, [35] in UK identified 18 factors to be included for project success. These factors are

communication effectiveness and effective information dissemination, conducive environment, production information simplicity and explicitness, in addition to skilled workers' participation in knowledge transfer and sharing.

It can be seen that researchers have followed similar exploratory approach to first review the literature and identify the factors that affect the project success then refine the factors using tools such as factors analysis and group the factors into categories such as project related factors, external factor and so on.

According to [47] the project success criteria mainly concentrated on three parameters; time, cost and quality of projects, described as the "iron triangle". A construction project is being successful if it achieves the stakeholder's requirements, individually and collectively. A stakeholder is an individual or group, inside or outside the construction project, which has a stake in, or can influence, the construction performance. [48] suggest that there are two levels of construction project success, the macro level and the micro level. The macro level deals with the effectiveness part of the project that is achieving the overall objectives of the project and is mainly concerned with the clients and user. The micro level deals with the efficiency part of the project following the traditional view of "iron triangle" (the iron triangle project success criteria mainly concentrated on three parameters; time, cost and quality of projects) and is concerned with the contractors and consultants. A construction project involves several stakeholders, processes, stages, and phases of work and needs a lot of input from both public as well as private sectors for successful completion.

[49] surveyed staff involved in projects representing contractor and client organizations in the UK. The study shows that client puts more emphasis on the need of other stakeholders whilst contractor puts more emphasis on project cost and duration. [50] depicts an empirical study on Swedish construction clients' views on project success that shows, the most important success factors have been identified as the user's participation, commitment to the project, high standard of quality consideration between the construction workforce and team working. The most important characteristics for systems for measuring performance are simplicity and credible results.

Traditional success criteria (time, cost, and quality) are inadequate to align with the long-term success of the company. In contrast, [51] through a survey of 40 medium and large Portuguese companies several factors were identified which are currently considered in the evaluation of project success, as found in the literature review. The results show that the traditional factors, often referred to as the "Atkinson elements triangle" (cost, time and quality), are still the most relevant for evaluating the success of a project, but others, such as customer involvement and acceptance, have gained importance in recent years. [15] investigate the project success in Brazil using data collected from 336 which was tested using logistic regression. Project success criteria are the cost, time, and quality. The results show that project management maturity is significantly related to all vertices of the iron triangle (time, cost and technical performance) dimensions of success. However, it is not related to the customer satisfaction dimension.

In this study, it is assumed that if a project's completion time exceeded its due date, or expenses overran the budget, or outcomes did not satisfy a company's predetermined performance criteria, the project was assumed to be a failure. This research adopts the traditional criteria view of project success where the project is considered successful if it is delivered on agreed time, cost, and quality. This is because these criteria are still valid to give clear picture at least in Iraq about the project success. The delivery on time was one of the most important criteria. In addition, the quality is also important since the projects are public, and they are designed to serve citizens for long time. Lastly, the cost is a major factor in the success of the project since the government is accountable in front of the taxpayers.

A summary of important reviewed studies is given in Table 1. The table shows the name of the authors and the year in which the article published. It also shows the country and the focus of the articles as well as the independent variable (IV) and the dependent variable (DV). The mediator and moderator are also extracted as well as the method and the data analysis technique and finally a brief summary of the findings.

Table 1: Summary of Reviewed Studies

Authors/ Years	Country	Description	I.V	D.V	Mediator/ moderator	Method/ sample	Software	Result
[52]	Malaysia	Success factor	Conceptual	Success factor (CSFs)	N/A	Literature review	Literature review	There are important project related factors and human related factors that are considered as the CSF.
[38]	UK	Contractor attribute to project success	Nine factors were categorized	Project success	N/A	Factor analysis and regression analysis of 164 respondents	SPSS	There are specific factors that are filtered based on factor analysis and expected to affect the project success.
[53]	Hungary	Success	Exploratory	Success factors and	n/a	Questionnaire survey	Correlation	Distinguish the success factors that represent relationship

				success criteria				orientation and task focus.
[29]	Germany	Success factor	Exploratory study where 490 factors obtained and refined	Success factor	N/A	Standardized online survey	SPSS factor analysis	41 success factors could be used for engineering project.
[54]	Hong Kong	Success Factor	Factor related to Public-private partnerships (PPP)	Critical success factors (CSFs)	N/A	Case study, questionnaire survey and mixed methods	Literature review study	PPP are important, and government have to increase this type of partnership to bridge the infrastructure gaps in countries.
[55]	South Africa	CSF of Construction PM	37 factors were identified and grouped into six groups.	CSF	N/A	60 respondents using questionnaire	Factor loading using AMOS	There are factors such as the strategic and technical and project related factors are the CSF.
[30]	UK	CSF from many stakeholders' perspective	Exploratory	CSF	N/A	Thematic analysis.	N/A	There are emerging factors that can be considered as CSF:
[36]	Norway	Problems of defining CSF	Six problems are identified	CSF	N/A	155 questionnaires.	SPSS correlation analysis.	The problem is related to several stakeholders.

Based on the above review, this study proposed that the success of a project is mainly affected by the project characteristics as well as the project manager characteristics. The literature suggested that project related factors are the most important factors that can affect the project success [55]. These factors include management support [23]; [15], employee’s commitment [50]; [56], and employee training and development [23] [14]. The experience of manager is proposed as a moderator between project related factors and the project success. Figure 1 shows the conceptual framework of this study. Organizational performance is one of the dependent variables and it is widely researched in the context of management [57]–[64].

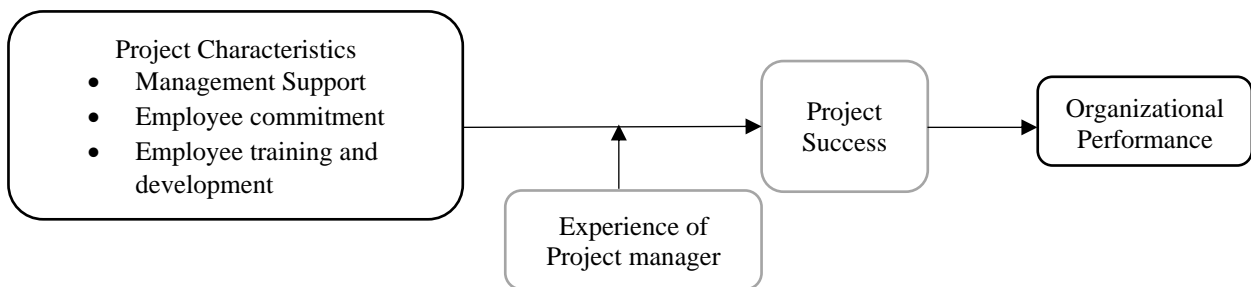


Figure 1: Conceptual Framework

Therefore, the first main proposition suggests that there is a positive effect of project characteristics on the project success of construction project in UAE.

Proposition 1: Project success affects the project success of construction project in UAE.

The sub proposition that is part of the project characteristic is the management support and this expected to have a significant direct effect on the project success. In line with this proposition, previous studies indicated that management support is critical for project success [21] [23]. Therefore, the first sub proposition is proposed as follows:

Proposition 1a: Management support has a positive impact on the project success of construction project in UAE.

The second sub proposition predicted that the effect of employee commitment on project success is positive. The proposition is supported by previous studies that have examined the employee commitment and its impact on project outcome [24] [65] [50]. Accordingly, it is proposed:

Proposition 1b: Employee commitment affects positively the project success of construction project in UAE.

The third sub proposition expects that the effect of employee training and development on project success to be positive. This proposition is in line with previous literature [66] [23] [14] [67] [4]. The following proposition is assumed:

Proposition 1c: Employee training and development affect the project success of construction project in UAE.

The study also proposed that the project success will lead to positive impact on the organizational performance of construction companies in UAE.

Proposition 2: Project success affect the organizational performance of construction companies in UAE.

The experience of the project manager is a critical factor to be considered as shown in several studies. This study proposed that managers with high experience will have an impact as a moderator between the project characteristics and the project success. This proposition is supported by relevant literature [68] [69] [38] [70].

Proposition 3: Experience of managers moderate the effect of project characteristics on project success.

3. Research Methodology

This study will be a quantitative in nature. It divided into five phases. In the first phase, the literature is reviewed to understand the important predictors of project success. This is followed by expert evaluation and exploratory factor analysis to refine the factors in the second phase. The third phase is to develop a conceptual framework based on the identified predictors and examine their relatedness to the project success and the consequence of project success. In the fourth phase, data will be collected from site manager, project manager, engineers to understand the predictors and the consequence. The last fifth phase includes the data analysis.

The population of this study is the constructions companies in UAE. In particular, employees working for these companies are included as the target respondents. The purposive sampling will be deployed to choose only those who have the required information. The data will be collected using a questionnaire. The questionnaire will be adopted from previous studies and a pilot study will be conducted prior to data collection. The data will be analyzed using Smart Partial Least Square. The analysis will include the assessment of measurement model and structural model which eventually end by testing the hypotheses of this study and presenting the findings and the recommendations to decision makers.

4. Discussion

Project success has become a critical criteria to assess the economic growth in all countries. The success of project in developing countries is less than in the developed one and there is a need for more studies in non-western context. Therefore, conducting a study on project success and in particular in the UAE has several implications and contribution to the theories and practices. This study enriches the body of knowledge related to the success of project. The literature on project success is dominated by exploratory studies and there is a need to implement theories such as RBV in understanding the project success and performance [34]. It has been also noted that empirical work to investigate project management practices in developing countries is relatively less than developed countries [71]. Thus, this study contributes to the literature by conducting confirmatory study and using theories such as Resource Based View to support the success project and performance of companies. The study also contributes to the literature by examining the project success in public sector.

This study is also significant because it contributes to the nation, business companies, and citizens. To the nation, the study provides the factors that affect the project success so that the decision makers can use the findings of this study to reduce the wastage of public fund in failure project. The saved fund can be used in other projects that can bring prosperity to the nation. To business companies, knowing these factors significantly reduces the delay and additional operational costs resulted from the delay in completing the projects on the specified time, cost, and quality. To citizens, this study is important because it leads to better project in term of quality and cost, and it reduces the delay time so that citizens can enjoy the utilization of public facilities such as schools and universities or hospital instead of crowding at those operational ones.

5. Conclusion

This study aimed to develop a framework that can be used by decision makers in UAE to improve the project success and performance. Based on the resource-based view, this study proposed that the project characteristics and the project managers experience are critical determinant of project success. This paper is a conceptual paper and as a way forward, the conceptual framework of this study will be examined in future work. Future researchers are suggested to include other emerging variables such as the knowledge management and its impact on project success. In particular, the knowledge sharing among sub-ordinate and managerial level could help in explaining the project success in developing countries.

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