

THE IMPACT OF PROJECT CAPABILITY ON CONSTRUCTION PROJECT DEVELOPMENT IN THE UNITED ARAB EMIRATES

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ABSTRACT

Investigating factors that boost project development helps to create an integrated construct that improves the expected outcome of the project. This study provided insights for an effective project development model linked to the project capability. This insight suggested a conceptual framework that stands on the role of project value was integrated into construction project development. The current study has used the quantitative research approach. In the quantitative approach, the researchers used the questionnaire to collect the primary data from the research respondents. The population of the study was the staffs who work in unlisted construction companies in UAE and the samples were 382 respondents. The findings of this research have confirmed that there is a positive and significant relationship between project capability and construction project development in the United Arab Emirates. In construction, permits, salaries, materials, equipment, and capabilities needed for projects are often traded between a variety of financial sources, suppliers, and capabilities. From the initial bidding process to project closure, the management is responsible for tracking and monitoring all costs and capabilities, especially as it relates to initial budgets for the purpose of creating good development for the construction projects.

Keywords: Project Development, Constructions, Infrastructure, Economic Diversification

INTRODUCTION

The UAE considers the construction sector as a major hub for the development of other vital sectors. It is considered as one of the most attractive sectors for investment and business, and it has a prominent contribution to real GDP in which during the period between 2008 and 2017, the GDP was about 10%. Furthermore, with the added value on average, it averaged about \$32.8 billion in the last decade, according to a report by the Dubai Chamber of Commerce and Industry released last December. The UAE is betting on a pivotal economic boom in the next few years, especially since the development initiatives and its capabilities for technical and technological development stimulate the construction sector by attracting investments, as it is the first base in the business of investors. According to a report published by the Market Mirror website, the construction industry rebounded remarkably in 2018, registering a real growth of 4.2%. The report expected that the sector will continue to recover during the period of 2019 to 2023, given the low deficit budget, and the increased investors' confidence in the state's economy, especially in housing, energy, infrastructure, and construction projects.

The country's attitudes towards economic diversification, increasing crude oil production, and efforts to stimulate investments in the construction industry in the transport, energy and infrastructure sectors within the framework of various programs and strategies, have contributed to the growth of the industrial construction market. The UAE government has established the targeted 2030 Industrial Development Strategy to increase the industrial production capacity to develop infrastructure, facilities, and construction that can contribute to enhanced productivity and more job opportunities. The country is joining the Global Building and Construction Alliance, which falls under the Paris Climate Agreement and is sponsored by

the United Nations Secretariat in December last year. It is one of the areas of interest from a sustainable perspective, taking into account the environmental conditions and climate challenges as well as strengthening international partnerships that reduce the consequences of climate change, and continue to develop the construction sector with minimal carbon emissions.

The Ministry of Infrastructure Development in the UAE is also developing innovative solutions for sustainable buildings and green roads, as well as establishing a number of clean energy initiatives in building and road projects. These are done to achieve the goals of the national plan for climate adaptation and the themes of the national agenda for Emirates Vision 2021, “which focuses within the axis of” a sustainable environment and an integrated infrastructure “to ensure the achievement of sustainable development of society and increase the efficiency of resources” without affecting the environment negatively and limits the impact of climate change and protects the urban environment.

In line with the warnings from experts in term of protecting the construction sector from stagnation and pushing it towards development and growth, the UAE has worked to find innovative ideas that advance the sector. This is done by stimulating start-ups to adopt innovation and technology technologies in this sector to bring about change in the industry. Building and construction sector deals with minimal profit margins improve living standards and overcome some challenges such as increasing population density and energy consumption. Throughout the life cycle of these projects, innovative ideas and innovation focus on the adoption of smart and digital technologies in cities and buildings. It ensures capability conservation and sustainability, as well as enhances affordability with the help of technology.

In 2013, Abu Dhabi Government determined to subsidize AED330 billion for real developments throughout the following ten years by concentrating on social development especially human services, education, accommodation, and strategic transport projects (Kerr, 2013). In Dubai, the extension of existing conurbation proceeds and construction stays endured through different projects, including the finishing of the Downtown Dubai and Business Bay projects. Additionally, work is proposed in and around Dubai’s second significant air terminal (Maktoum International) and simultaneously, so does the current declaration of construction of Mohammed bin Rashid City. This will be an extensive blended development including housing retail outlets, workmanship offices, and the “Shopping Centre of the World”, which is intended to be the world’s biggest shopping centre (Kerr et al., 2013).

Various problems and difficulties afflicting the construction industry in particular; low performance and lack the competitive advantage in all grades of the construction company, income behind the back and lack of money foresight, deficient supervision within the specialized and administrative level, inadequate project plans on the part of the advisers, impotent commitment with administrative and legal partners still to be found (AlAmeri, 2020). Designers and construction companies are struggling with both internal and external failures that greatly affect profit and development. A part of the important concerns within an internal point of view is the provision and use of stages of innovation to improve the levels of productivity, linkage and ease of different groups and experts and the selection of board procedures that emphasize the pillars central strategic administration in particular; Strategic arrangement, strategic decision and strategic use (Johnson & Babu, 2020). The topic of this research attempts to address the absence of strategic guidance within the structures of construction companies in UAE. It considers the difficulties encountered by temporary workers, particularly defenceless administrative efficiencies and a weak way of dealing with the use of strategic management trials within the integral mission of construction companies, in order to contemplate the impact of management trials strategic in the private construction companies in UAE. Examining these impacts can drive more informed board structures and become aware of compelling practices that can support the presence of building elements that convey quality and resonate with global practices now and for the long term.

The aim of this study is to find out the impact of project capability on construction project development in the United Arab Emirates. This research will provide a comprehensive

literature review of the research variables. The following sections will show the methodology used in this research, as well as the tests and examinations used in the study. This paper will also discuss the findings of this research and include a conclusion for this research.

LITERATURE REVIEW

Capability has multiple meanings and several categories. In general, capability is the ability to perform a certain task to achieve a certain outcome. There are capability theories in different field of studies such as dynamic capability, organisational capability, capability management, and business capability. The main concern for this section is to literately identify what capability is (Vandaie & Zaheer, 2014).

Capability is an element, staff or process that can produce or cut steps. It is a synergy through which individual skills can be transferred and abuse can be linked (Ivens, 2017). The relevant investigation of the ability is not about “who knows how” but it is about “how can it complete what it has to complete?” and “how is the effort to get to, move or apply the capabilities needed?” TRIZ, a Russian frame of critical thinking of imagination, was until this stage, a negative state of ability. It is a neat arrangement of standards in the light of design permits (Yang, 2016). To an easy to understand process (ability), taking advantage of these standards is just starting to develop (Zaefarian, 2017).

Capability, traditional or dynamic, can manage condition resistance to achieve attractive results. It is a special goal of an organisation, inspiration, or strategy. Capacities are not adequately amplified by the work of a generation because they are what the organisation can achieve rather than what it is currently creating. Capability, to some extent, demonstrates learning, regulatory assets, and history of the organisation. They are unrestricted from specific purposes or items. For example, the ability to make machines fuelled by small internal combustion engines can show themselves in assembling cars, detachable engines (ship), or tractors and yard cutters (Teece, 2014).

Dynamic capability management of other organisational exercises allows for creating unparalleled benefits by creating and delivering elements and separation departments that address new and existing markets where requested. It enables the company to coordinate, form and reconfigure internal and external assets to continue management in constantly moving business positions. Strong dynamic capabilities enable the company not only to create better than the item of writing, but rather an excellent estimation of the buyer’s expectations and the arrival it produces for the investor and different partners (Teece, 2014). In any case, solid dynamic capabilities alone will not have a competitive advantage. Hard assets and great strategies are also necessary. In this way, the dynamic quality of the assembly determines the speed and degree that the company’s eccentric assets can be adjusted and rearranged with a reliable corporate strategy (Teece, 2014).

Organisational capabilities are characterised as a firm’s ability to convey its assets, unmistakable or impalpable, and to play out an undertaking or action to enhance performance (Karna, 2016). Helfat & Peteraf (2015) characterised the organisational capability as “the capacity of an organisation which is a planned arrangement of assignments, using organisational assets in order to achieve a specific final product.” Organisational capacities are basic to the capacity of firms, and are especially useful for organisational issues.

RESEARCH MODEL AND HYPOTHESES

Capability management is a way to deal with the management of an organisation, ordinarily a business organisation or firm, in the light of the “theory of the firm” which includes gathering of abilities that might be practiced to procure incomes in the commercial centre and contend with different firms in the business. Capability management is concerned with the

supply of abilities inside the firm to guarantee its position in the business and its continuous benefit and survival (Pundziene & Teece, 2016).

Before the rise of capability management, the overwhelming theory clarifying the presence and competitive position of firms, in view of Ricardian financial aspects, was the Resource Based View of the Firm (RBVF) (Lin & Wu, 2014). The central proposition of this theory is that organisations get their gainfulness from their control of assets and are in rivalry to secure control of assets. The best-known work of the RBVF is that of one of its key originators is business analyst Edith Penrose. Capability management can be viewed as both an augmentation and contrasting option to the RBVF which affirms that controlling the physical assets is not the reason for firm benefit, but organisations are similar to people and contend based on their capacity to make and use information. So, firms do not contend based on the control of assets but rather based on predominant know-how. This know-how is installed in the capacities of the firm to do things that are viewed as significant (in and by the market) (Wißotzki, 2017).

The construction of complex elements and frameworks requires the preparation and management of a wide range of capabilities. These requirements can be found within the control or responsibility circle for one endeavour. This study examines the innovation models of companies in the field of training, design and construction, who build and benefit from structures and frameworks. It focuses on the idea of training where the capabilities of a specialised contact centre and business forms within the control department of what it calls project-based, benefiting the improved companies. Business forms are exercises within the organisation or framing “paste”, which connects the various parts of a project-based company. The urgent issue here is not about the performance of the project, but rather on the performance of businesses that are contracting with others in project transfer (Beng et al., 2017).

Capability is investigated with respect to the transport and input components that connect the company’s specialised capabilities to the capabilities of the various projects with which the company cooperates, thus taking into account the ultimate goal of establishing one-off projects. A resource-based approach is taken to deal with the company, following the work of former Penrose & Penrose (2009). Innovation management is examined in relation to the organisation of specialised capabilities of companies with relevant forms of business. This is linked to the forms of projects, where the capabilities of specialised companies are built in relation to the specialised capabilities of different companies. However, these types of exercises require specific abilities and resources that differ from those in the most stable generation, arranged in any elements and departments that are widely established standards.

Construction management is a construction project in which the Construction Manager (CMr), who has been deputy from a construction ordered, makes overall adjustments in a neutral manner and smoothly works towards its intended purpose. The CM method is a project implementation method established in the United States, and the CMr (Construction Manager) who specialises in management works together with the client and the designer to prevent project delays and budget overruns. It is a system to manage the whole. Hence this research proposes the following hypothesis.

H1 There is a positive and significant relationship between project capability and construction project development in the United Arab Emirates.

Based on the above arguments this research proposes the following conceptual framework:

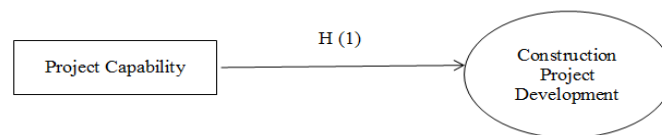


FIGURE 1
RESEARCH CONCEPTUAL MODEL

METHODOLOGY

The current research has employed the quantitative research approach because it is a type of research that presents facts and events in an observable, measurable, and numerically expressible manner by objectifying them. The aim is to measure the social behaviors of individuals objectively through observation, experiment, and test and to explain them with numerical data.

A quantitative survey was conducted which was used as a method of collecting data for this research. A quantitative survey ideal for use in a cross-sectional study like this, where data is collected just once from the research population. There is generally one kind of survey that is used which is the quantitative survey (questionnaire) (Sileyew, 2019).

For this study, the population is the staff who works in the unlisted construction companies in UAE. According to the National Economic Register (2018), the total number of unlisted construction companies operating in the UAE is 11,676. The researcher chose a sample of 382 individuals. The reason why 382 respondents were chosen is because of the recommendation of researchers like Miles, et al., (2014), who claimed that for the number of variables in this study, a sample of more than 250 respondents is required to ensure statistical power and to ensure that the sample will be statistically strong. The random sampling technique involved a sample chosen based on the random of the respondents, which was used in the current study. The SPSS was used in the study for testing the relationships between the independent variables and the dependent variable.

DATA ANALYSIS AND RESULTS

For the purpose of achieving the research objective, the descriptive statistics analysis was employed to clarify the respondent's profile, also the assigned factors of the research, the descriptive analysis shows the mean, and standard deviation. Before proceeding to the inferential tests, explanatory tests were used; the purpose of conducting the explanatory test is to examine the respondents profile, reliability and validity of the used model, several tests such as normality test, reliability test, and convergent validity. And finally, the correlation test was employed.

Respondents Profile

The profiles of respondents are tests that are used to make sure that all the respondents were selected randomly. This test was also used to identify the background of the respondents. For this reason, the profiles of respondents contained five criteria, which are gender, age, education level, income level, and experience, and company.

Table 1 shows the respondent's profiles for those participating in the study. As shown in the table 1, the first category was gender and it was shown that the majority of participants were male, with a percentage of 74.3% and n=283 participants. Meanwhile, the female category was only 25.7% of the total participants and n=99 participants.

The second category was age, and in this study, the majority of participants were from the 26 to 30 years old category with a percentage of 32.2% and n=123 participants. Also, the 17 to 25 years old category recorded a percentage of 15.8% with n=60 participants. Next, the 31 to

35 years old category has recorded a 17.1 % with n=65. The lowest percentage recorded was the 36 to 40 years old category with only 10.5% which was n=40. Finally, the above 40 years old category recorded 24.3 % and n=94, which was the second-highest in the age category.

The third category was the respondents' educational level. In this category, the findings showed that there were only three types of qualifications among the respondents, which were diploma, bachelor, and master's degree. The bachelor's degree category recorded the highest percentage, 64.5%, and n=246. The diploma category recorded 22.4% and n=85 and finally, the master category recorded a percentage of 13.2% and n=51.

The fourth category was the income level. In this category, the findings showed that the majority of the respondents were in the category of above USD 1001 (85.5%, n=328). The category of USD 751 to USD 1,000 recorded a percentage of 10.5% with n=40. Finally, the category of USD 500 to USD 750 recorded a percentage of 3.9% with n=14.

The fifth and last category was the experience. In this category, the findings of the research revealed that there were only two groups of experience by year among all respondents, which were 4 to 6 years and 7 to 9 years. The 4 to 6 years group's percentage was 40.1% (n=153). And, the 7 to 9 years group had a percentage of 59.9% with n=229.

The last category was the company that the sample is working at. This category had four companies, which are oil and gas filed facilities building contracting, main roads, streets and related works contracting, bridges contracting, and all kinds of building projects contracting. The samples who are working at oil and gas filed facilities building contracting were 78 representing 20.6%. The samples who are working at main roads, streets, and related works contracting were 98 representing 25.7%. The samples who are working at bridge contracting were 50 representing 13.2%. The samples who are working at all kinds of building projects contracting were 156 representing 40.5%. It is confirmed that most of the participants were from all kinds of building projects contracting.

Category	Frequency	%	Category	Frequency	%
Gender			Education level		
Male	283	74.3	Diploma	85	22.4
Female	99	25.7	Bachelor	246	64.5
Age			Master	51	13.2
17-25 years	60	15.8	Income level (USD)		
26-30 years	123	32.2	500 - 750	14	3.9
31- 35 years	65	17.1	751- 1,000	40	10.5
36- 40 years	40	10.5	1,001 and above	328	85.5
>40 years	94	24.3	Experience (Yr)		
			4 to 6	153	40.1
			7 to 9	229	59.9
Company					
Oil and gas filed facilities building contracting				78	20.6
Main roads, streets and related works contracting				98	25.7
Bridges contracting				50	13.2
All kind of building projects contracting				156	40.5

Normality Test

The normality test is used to ensure whether all data meet the normality assumption and to make sure all variables in the proposed model were examined. Firstly, it was used to measure

the influences that can happen due to the sample size. For this, two main tests were used, which were the Skewness and kurtosis tests.

The Skewness and kurtosis tests for each variable were employed to assess the normality. It is argued that data is considered to be normal if the Skewness value is between -2 to +2 and the kurtosis value is between -7 to +7 (Hair et al., 2010; Kline, 1998).

According to the following table 2, the variables (project capability and construction project development) had an acceptable range of Skewness and Kurtosis values, where the Skewness values were ranged between 0.165 and 0.572. In the same line, the Kurtosis values were ranged between -1.411 and 0.364.

Constructs	Skewness	Kurtosis Statistic
Project Capability	0.165	-1.411
Construction Project Development	0.572	0.364

Construct Reliability

The construct reliability test has been used in the study for the purpose of finding out the variables' items' internal consistency. This test has used two main factors to determine the internal consistency, which is Cronbach alpha and composite reliability, these two factors should be greater than 0.7 to be acceptable. The following conclusion was drawn based on the results from the following table 3:

- Project capability items have shown great internal consistency with Cronbach alpha and composite reliability=0.796 and 0.893 respectively.
- Construction project development items has shown great internal consistency with Cronbach alpha and composite reliability=0.809 and 0.910 respectively.

For the purpose of making sure that the data is reliable and valid, convergent validity is another test to ensure the validity of the data. This test uses the Average Variance Extracted (AVE) values. According to (Hair et al., 2017), the AVE should be greater than 0.5. Based on the following table 3, the variables (project capability and construction project development) have got acceptable AVE values, which was 0.611 and 0.789 respectively.

Constructs	Cronbach's alpha (>0.7)	Composite Reliability (>0.7)	Average Variance Extracted (AVE) (>0.5)
Project Capability	0.796	0.893	0.611
Construction Project Development	0.809	0.91	0.789

Descriptive Statistics

The descriptive analysis, as the name implies, consists of describing the key trends in the existing data and observing situations that lead to new facts. This analysis is based on one or several research questions and does not have hypotheses. In addition, it includes the collection of related data, then organizes, tabulates, and describes the results.

A basic descriptive analysis involves calculating the simple measures of composition and distribution of variables. Depending on the type of data, they can be proportions, rates, ratios, or averages. In addition, when necessary, as in the case of surveys, association measures between variables can be used to decide whether the observed differences between women and men are statistically significant or not.

According to the following table 4, the minimum measurement scale was 1, while the maximum measurement scale was 5. The mean scores for the variables (project capability and construction project development)=3.2452 and 3.6598 respectively. These results confirm that the majority of respondents were in average agreement with the items stated in the questionnaire. Also, these results also confirm the essential role of the independent variable on the breaking monopolies in the retail industry. Furthermore, the standard deviations for the variable were 1.06886 and 0.73181 respectively.

	N	Minimum	Maximum	Mean	Std. Deviation
PC	382	1	5	3.2452	1.06886
CPD	382	1	5	3.6598	0.73181

PC: project capability; CPD: construction project development

Direct Effect Test

The direct effect test is the most important test in the study. It is also called the correlation test. The correlation between two variables is concluded by a correlation coefficient, whose value oscillates between -1 and +1. If the correlation coefficient is towards +1, it indicates a positive relationship between the variables and -1 indicates a negative relationship between the two variables. This test aims to identify the type of relationship between the independent variable (project capability) and the dependent variable (construction project development). The following conclusion was drawn based on the results on the following table 5:

- There is a positive and significant relationship between project capability and construction project development in the United Arab Emirates with $r=0.071$, $t\text{-value}=2.778$, and a significant level of 0.036.

Hypothesis	Relationship	Std Beta	Std Error	t-value	p-value	Decision
H1	PC ->CPD	0.071	0.133	2.778	0.036	Supported

DISCUSSION AND IMPLICATIONS

The discussion section is the last step in the process of the findings. This section presents the results that are related to the research hypothesis and compare them with the results and findings of the previous studies. The most important result of this research can be seen in the result of the direct effect test, which was that there is a positive and significant relationship between project capability and construction project development in the United Arab Emirates with $r=0.071$, $t\text{-value}=2.778$, and a significant level of 0.036.

This result is supported by the previous studies, capability management is a way to deal with the management of an organisation, ordinarily a business organisation or firm, in the light of the “theory of the firm” which includes gathering of abilities that might be practiced to procure incomes in the commercial centre and contend with different firms in the business. Capability management is concerned with the supply of abilities inside the firm to guarantee its position in the business and its continuous benefit and survival (Pundziene & Teece, 2016).

Before the rise of capability management, the overwhelming theory clarifying the presence and competitive position of firms, in view of Ricardian financial aspects, was the Resource Based View of the Firm (RBVF) (Lin & Wu, 2014). The central proposition of this

theory is that organisations get their gainfulness from their control of assets and are in rivalry to secure control of assets. The best-known work of the RBVF is that of one of its key originators is business analyst Edith Penrose. Capability management can be viewed as both an augmentation and contrasting option to the RBVF which affirms that controlling the physical assets is not the reason for firm benefit, but organisations are similar to people and contend based on their capacity to make and use information. So, firms do not contend based on the control of assets but rather based on predominant know-how. This know-how is installed in the capacities of the firm to do things that are viewed as significant (in and by the market) (Wiłotzki, 2017). The construction of complex elements and frameworks requires the preparation and management of a wide range of capabilities. These requirements can be found within the control or responsibility circle for one endeavour. This study examines the innovation models of companies in the field of training, design and construction, who build and benefit from structures and frameworks. It focuses on the idea of training where the capabilities of a specialised contact centre and business forms within the control department of what it calls project-based, benefiting the improved companies. Business forms are exercises within the organisation or framing “paste”, which connects the various parts of a project-based company. The urgent issue here is not about the performance of the project, but rather on the performance of businesses that are contracting with others in project transfer (Beng et al., 2017).

CONCLUSION

Investigating factors that boost project development helps to create an integrated construct that improves the expected outcome of the project. This study provided insights for an effective project development model linked to the project capability. This insight suggested a conceptual framework that stands on the role of project value was integrated into construction project development. The current study has used the quantitative research approach. In the quantitative approach, the researchers used the questionnaire to collect the primary data from the research respondents. The population of the study was the staff who works in unlisted construction companies in UAE. According to the National Economic Register (2018), the total unlisted construction companies operating in the UAE were 11,676 and the samples were 382 respondents. This study found that there are positive and significant relationships between the project capability and construction project development in the United Arab Emirates. In construction, permits, salaries, materials, equipment, and capabilities needed for projects are often traded between a variety of financial sources, suppliers, and capabilities. From the initial bidding process to project closure, the management is responsible for tracking and monitoring all costs and capabilities, especially as it relates to initial budgets for the purpose of creating good development for the construction projects.

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