

The Challenges and Reasons for Delaying Construction Projects in Libya

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Abstract: *Environmental, technological and social constrains have caused the delays in construction industries and these delays vary from country to country. The construction projects are becoming more complex and difficult to manage due to different reasons associated with globalization. This study is conducted to identify the reasons of delays in construction industry of Libya. The data was collected from survey of 300 respondents involved in management of construction projects including consultants, project managers and owners. The data about deferments consist of three reasons; project specific, external environment and human. For this purpose correlation and regression analysis was used to find the factor contributing to deferments. Among three factors human factor and project specific reasons are the most important factors that contribute towards deferments in construction industry of Libya.*

Keywords: Construction projects, challenges, deferments” reasons Libya

1. Introduction

The construction industry is subject to risk due to its complexities and technological advancements in this field. The construction industry require huge amount of capital, followed by large scale and volatility in projects (Mok, 2015) [15]. Due to nature of this industry and its complexity the construction projects are subject to deferments and different factors are causing these deferments. These deferments also differs from project to project and from country to country (Pintu *et al.*, 2011) [19].

The project management team is facing different problems in meeting requirements of the projects in order to complete the project on time (Hamzah *et al.*, 2011) [9]. The on time completion of the projects is one of the most important factor of project success and number of factors are contributing towards project success (Abbasi *et al.*, 2015; Masadeh *et al.*, 2015; Orozco *et al.*, 2015; Tarhini *et al.*, 2015) [1, 12, 18, 21]. In order to complete construction projects on time and within the limits a proper management is require in terms of project schedules, project costing, project estimation, project management and minimizing delays. There are number of parties involved in this process ranging from consultants, project managers and project team and owners or clients of the project (Doloi, 2012) [6]. These parties never like deferments in construction projects and

want to complete projects within the required time and estimated cost. This problem is usually present in traditional type of contracts and projects which lakes a proper strategic distribution of resources and lack of managerial skills from project manager’s point of view. The problem of delay is also present mainly in developing countries due to backwardness in technology and strategy implementation (Meng, 2012) [14]. The on time completion of projects and its proper management depends upon number of deferments and usually depends upon a proper methodology and engineering of the projects (Ochieng, 2010) [17]. Delays in construction projects are occur in the form of time over run or exceeding budgeted or estimated cost which are identified at the time of drafting the project (Kazaz, Ulubeyli, & Tuncbilekli, 2012) [10].

In real world, deferments are common practice in every project but the level of delays and reasons of deferments differ from project to project and from country to country. These reasons are also differ between developed countries and developing countries. The contribution of construction industry to the economic development of Libya is less as compare to other industries and sectors. It only contribute 2 - 3% in GDP of Libya. The construction industry is important in order to stimulate growth in industrial sector (Dong, 2013) [7].



Examples of late projects in Libya

2. Significance of the study

As construction projects are important to stimulate growth in industrial sector, there is need to identify reasons in developing countries that cause deferments and adversely affecting the construction industry and economic growth. According to report by General People's Committee 97 percent of ongoing projects are affecting by deferments and adversely affecting the growth of this sector. The objective of this study is to study analyses and evaluate the causes and effects of delay. Reasons

3. Literature Review

Gunduz (2016) [8] conducted a study to identify the factors contributing delays in construction projects. They identifies 83 reasons related to nine different categorize in Turkey. The identified 15 reasons are contributing towards deferments in construction industry of Turkey mainly inadequate contractor experience, poor project planning, inefficient site management, and frequent changes in project process and orders. Other researchers like Hamzah *et al.* (2012) also identified different reasons related to deferments in construction industry of Malaysia. They concluded that material delivery, labor productivity, inadequate decision making process, inadequate equipment's, and inflation are the most important reasons causing delays in projects. Among these reasons there are some non - recurrent reasons between different studies in Malaysia.

Samarghandi *et al.*, (2016) [20] presented a statistical model regarding factors contributing deferments in construction industry and classified into four categories related to owners, consultants, law and regulations and general defects. They concluded that most important and signfica reasons nt among these are budgeting and resource allocation defects. The other reasons include weak cash flows, inaccurate estimation in pricing and problems in bidding. The most important reason among consultant category is related to drafting of project and inaccuracies in documentation and their technicalities. The result suggest that delays are ranging from 5 to 6 months per year and the cost overrun is estimated around 16%.

Chai & Yusof, (2013) [4] identified that employer is responsible for delays in construction industry and these deferments are out of control many times like uncertain

weather and natural conditions. These delays can be classified as excusable or compensable deferments and usually depends upon the nature of the contract and riskiness of the project. Alhomadi *et al.*, (2011) [2], concluded that these deferments are affecting the reputation of the project manager and can be minimized by efficient and effective managerial skills. Kikwasi (2013) [11] conducted a study in Tanzania in order to find the reasons of deferments in construction industry. They conducted study on big projects in Tanzania and concluded that inflation, inaccurate material estimation and degree of complexity are the most critical actors in delays. Other reasons related to time over run are changes in design, inadequate labor allocation, poor planning, and shortage of resources.

Megha and Bhatt (2013) [13] identified the causes of delays in residential construction projects of Indian construction industry. They identified total 59 causes and have classified under 9 major groups. Total 50 respondents comprises of 20 developers, 17 contractors and 13 architects who participated in their field survey. Alias. *et al.*, (2014) [3] conducted a study to identify the extent of the relationship between project success reasons and project performance. They developed a conceptual framework by including five variables for project success; namely

Project Management Action, Project Procedures, Human Factors, External Issues and Project Related. Reasons

4. Methodology

4.1 Conceptual Framework 3.1.1Project Specific Reasons

The importance of project scope factors is echoed by other researchers (Chan, 2004) [5]. These factors include types of the project, its nature, size and complexity of the project.

H1: Project reasons are causing delays in construction projects

External Environment Reasons

Various researchers support "environment" as a reasons affecting the project success (Chan, 2004) [5] further described "environment" as all external influences on the construction process, including social, politica factors l.

These reasons include economic, social, political and physical environment.

H2: External environment is contributing towards deferrals in construction projects

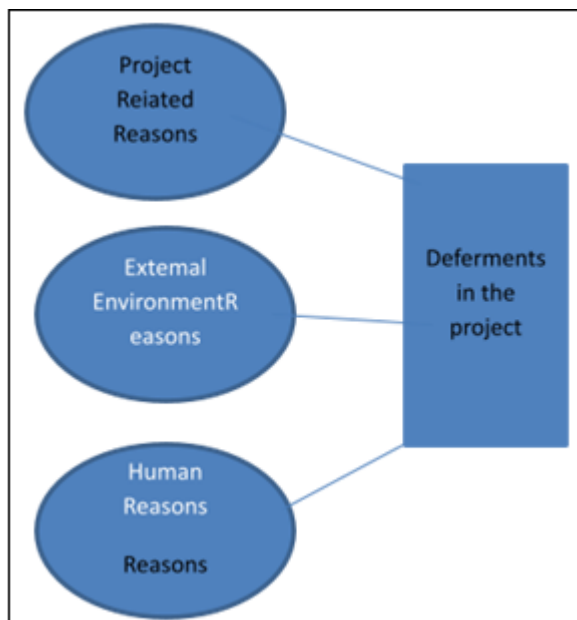


Figure 1: Conceptual framework

Human Reasons

(Chan, 2004) [5] defined project participants as the key players, including project manager, client, contractor, consultants, subcontractor, supplier, and manufacturers. These reasons include client specialization, client’s perception regarding cost reduction and high quality, and project team leader.

H3: human reasons are contributing deferrals in construction projects

Questionnaire Development and Distribution

We have developed questionnaire from the academic literature for data collection purpose and targeted at some contractors, clients and consultants in some projects in Libya. The questionnaire is divided into three parts, the first part is related to demographics of respondents and the second part is related to the reasons delaying construction projects. In third part include ranking of these according to frequency and importance by the respondents. The questionnaire was distributed among different consultants, project managers and owners of the projects, with a total number of 300 self-administered questionnaires. In order to perform statistical analysis to measure the reasons of delays in construction industry of Libya we used descriptive statistics, correlation analysis and regression analysis by using SPSS.

Table 1: Respondents

	Consultants	Project Managers	Owners
Respondents	90	135	75
Percentage	30%	45%	25%
Total	300 (100%)		

5. Analysis and Finding

Correlation Analysis

The degree to which two or more variables are linked with each other is measured using correlation coefficient

(Wherry, 2014) [22]. It determines the level of change in one variable in relation to the change in another variable. Negative and positive signs show the direction of the correlation and its range is between - 1 and +1. A value of ‘0’ shows that no relation exists between the two variable and closer the value of the coefficient between two variables to 1 or -1 higher is the strength of the relationship. Negative sign shows inverse relation and positive sign on the other hand shows a direct relationship between any two variables. Correlation summary is presented in table 2. The result indicates that there exist positive relationships between all the variables contributing toward delays in construction projects. Project related reasons, external environmental reasons and human reasons are all positively related with coefficient values of The variables are highly significant at 5% confidence interval.

Table 2: Correlation Analysis

	Project Related reasons	External Env. reasons	Hu reasons man
Project Related reasons	1		
External Env. reasons	.314**	1	
Human reasons	.670**	.546**	1

Ranking of Reasons

The one part of questionnaires was related to ranking of the reasons which consultants, Project Managers and Owners think are more important in deferring or occurring frequently. The results shows that the highest mean value is of Human Factor, which is an important causi reasons ng delays in the construction projects. The mean value of these reasons is 4.5 and on this basis the ranking is 1 for this variable. External environment is least important factor that contributes to the delays in construction projects having a mean value of 3.0 and ranked at 3.

Table 3: Ranking of reasons

Ranking	Mean Value	reasons
1	4.5	Human reasons
2	4.1	Project Related
3	3.0	External Env. reasons

Regression Analysis

In order to check the impact and degree of association between the variables that are related to deferrals in construction projects we conducted regression analysis. Regression analysis predicts the change that occurs in the dependent variable because of the independent variable or variables (Montgomery, 2015) [16]. The three different types of multiple regression analysis based on how the variables are entered for analysis are standard, stepwise and hierarchical multiple regression. We developed following regression model to check the relationship between delays and factors contributing to these deferrals.

Statistical Model

Factors of Delays = $\alpha_0 + \beta_1 PRF + \beta_2 EEF + \beta_3 HF + \epsilon$
 PRF = Project Related Reasons
 EEF = External Environment reasons
 HF = Human Reasons
 ϵ = Error term

Table 4: Regression Analysis

	Beta	T	P
(Constant)	.287	1.7	.076
Project Related reasons	.296	3.9	.005
External Env. reasons	.032	.34	.213
Human reasons	.223	2.7	.000

Dependent Variable: Delays in Construction projects

The result of regression analysis is presented in table 4. There exist a positive relationship between Delays in construction and project related reasons. The coefficient is .287 and a significance level of 0.23. The result of external environment is positively related but the result is not significant. The significance level is .23, the only variable in the study which is insignificant. The most significant and important variable is human factor which is highly significant at .000 and with a coefficient of .223. So the most important reasons that contributes to the delays in construction projects in Libya is human reasons. The overall goodness of fit (R - Squared) is 59%, showing the fit of the model.

6. Conclusion and Recommendations

In anticipation of the effect of globalization and the technological difference between developing and developed countries, it is necessary to identify the actual reasons of delay in order to reduce the impact of delay in any construction project. In construction projects, deferment could be defined as the time overrun beyond the date specified in a contract that the parties have agreed upon to deliver the project. There are number of parties involved in this process ranging from consultants, project managers and project team and owners or clients of the project. This study deals with identifying reasons causing delays in construction industry of Libya. The data about deferments consist of three reasons; project specific, external environment and human. For this purpose correlation and regression analysis was used to find the reasons contributing to delays. Among three reasons human factor and project specific reasons are the most important factors that contribute towards delays in construction industry of Libya.

As result shows that Human factor is major contributor towards deferments in construction industry of Libya there is need to overcome these reasons in order to complete projects on time without any additional cost, time and reputational loss. The human reasons include client specialization, client's perception regarding cost reduction and high quality, and project team leader. It is therefore recommended that project leader should be competent enough to complete the project on time and without overruns in terms of cost and time. Proper training programs can be effective in increasing skills to handle these crisis.

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