ISSN: 1687-1006 p
ISSN: 2682-3640 e

The Egyptian International Journal of Engineering Sciences and Technology

Vol. 37 (2022) 24–33

https://eijest.journals.ekb.eg/

Factors affecting construction project complexity.

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ARTICLE INFO

Keywords:

Project complexity, project management, Complexity assessment, Construction industry.

ABSTRACT

Construction projects have become more complex, and worries about the conception of project complexity have increased, thus project complexity has become a crucial factor in management of project that poses extra challenges to achieve project goals. Understanding complexity is of great importance to practitioners in the field of project management because of the differences related to making decisions and achieving goals that seem to relate to complex projects. Complexity affects project planning and control. It can influence the choice of an appropriate model for project organization, or it can even impact project results. Complexity can also affect project modeling, evaluation, and control, and time, cost, quality, and safety objectives. It is necessary to define the concept of complexity for construction projects, identify the factors that affect complexity. A number of methods have been used throughout the research process, interviews and questionnaires used to determine the project's complexity factors. The objectives of the research include the following: (1) Defining the complexity and characteristics of the project; (2) Determining the importance of the complexity factors which are affected by the complexity of the project and (3) ranking the complexity factors according to the degree of their influence on complexity. Hence the results of the research can help scholars and practitioners in the field of project management to understand the crucial factors of project complexity and develop an appropriate strategy for effectively managing the projects complexity.

1. Introduction

Today, the construction industry has experienced speedy progress in projects of rising size and complexity. Many construction projects are large-scale complex systems that are implemented in dynamic environments. Large scales, sophisticated technical processes, long lead times, huge numbers of people involved, diverse geographic locations and high performance pressures make these[a] projects more complex than ever [1].Thus, the success of the project in terms of cost, time, and quality is usually weak in the industry of construction [2-4]. Many studies have indicated that the ultimate success of a project depends largely on its complexity, which cannot be satisfactorily addressed by traditional project management methods [5].

1.1. Definition of project complexity

The complexity of projects does not have one definition that can be applied to a variety of projects. Baccarini [6] was the first to suggest a description of

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complexity of project as "made up of many diverse interlinked parts". Another definition has been given by Edmond [7] which is "The complexity of the project is the ownership of the model which makes it hard to formulate its general attitude". In a similar context, Sommer and Loch [8] define complexity as having "two dimensions: the size of the system (the number of influence variables) and the number of interactions between influence variables. Brockmann and Girmscheid [9] define the complexity of a project as a set of problems consisting of many parts with many potential interrelationships; most of which have significant consequences in the decision-making process that achieves the end result. Hass [10] described complexity as an arrangement that is complex or involves many interrelated elements that are difficult to understand or deal with.

A complex project exhibits several characteristics of a degree or degree of severity, which make it difficult to predict project outcomes or project management [11].

Complexity is a feature of the project, and the project can have complex implications [12]. However, there is still no generally accepted definition of project complexity. Recently, Mogens [13] defined project as "the interdependence of the elements that cause an emerging character of the project and limit management of project". There is a necessity for measuring the factors of complexity in order to control and manage the complexity of projects effectively. Many practitioners in the field of project management have tried to determine the value of each factor of complexity, and to determine the measures of these factors [14].

The overall objective of the study presented in the paper was to develop a methodology for fully exploring and evaluating the complexity of projects. This objective was achieved by achieving three specific objectives: (1) Defining the complexity and characteristics of the project; (2) Determining the importance of the complexity factors which are affected by the complexity of the project and (3)ranking the complexity factors according to the degree of their influence on complexity. The resulting assessment of complexity of project adds great value to the current body of knowledge for project managers and helps practitioners and project managers with project resource allocation to complex projects.

2. Literature review

2.1. Previous studies

The importance of complexity measurements in the analysis of projects has been studied and documented by several researchers, particularly in large scale construction projects [14]. Lebcir and Choudrie [15] introduced four drivers of complexity of project based on previous studies that include 1) infrastructure volume, 2) infrastructure connectivity, 3) infrastructure novelty, and 4) project uncertainty. The effect of these factors on the life cycle of project was modeled using the system dynamic method. The

Construction of the model has been validated through workshops in which various project teams of the organization involved. The USDA [16] has developed a method for assessing the complexity of the project. The users arrange fifteen complexity factors of complexity into a matrix ranging from one to five factors for each factor. Kim and Wilemon [17] present a model of complexity measures based on various sources of complexity for new product development.

Vidal et al. [18] have developed a method for measuring the level of complexity in a project using Delphi method and the Analytical Hierarchy Process (AHP) method. Based on an extensive review of the literature, the authors identified seventy possible complexity factors. Then, using the Delphi method, 18 key factors were selected as the most influential factors on the complexity of the project. Among the factors identified for the complexity of projects are: (number of stakeholders, diversity of information systems, location, and diversity of stakeholder interests, dependence on environment and specifications, availability of resources, interdependence of systems, objectives, processes, team communication, cultural diversity, and environmental complexity).

Remington et al. [11] talk about one critical aspects in project complexity which is relationship between size and budget. The authors provide ahistorical journey within project complexity and investigate characteristics which contributing to complexity. The findings of survey show that "goals, stakeholders, interfaces and dependencies, technology, management processes, work practices and time" are the most important factors contributing to project complexity. Sinha and Singh [19] proposed a framework for measuring project complexity by implementing an index. A model was developed by Wood and Ashton [20] in order to measure

complexity during the initial stages of project development.

Hass [10] introduced a framework for diagnosing the complexity elements present in a given project so that the project team can make appropriate complex management decisions. According to the literature review, a list of factors contributing to project complexity and their classification were identified Table (1).

Table (1): Complexity factors of complex construction projects

Category	No	Factors
people	1	Hard relationships between the parties of the project
	2	Having a large number of stakeholders in the project
	3	Problem with clients
	4	Poor channels of communication
	5	Poor decision making
	6	Poor use of information
	7	Number and diversity of teams involved and suppliers
	8	Technical knowledge of team
	9	Poorly defined project function
	10	Lack of leadership
	11	Lack of team cohesion
	12	Lack of coordination within the team
	13	Lack of agreement on objectives between stakeholders
	14	Experience and skill level of project manager
	15	Change orders
project characteristics	16	Large number of phases that make up the project
	17	Long time scale project
	18	High interdependencies between function of various tasks
	19	Rigidity of sequence between the various tasks within an operation
	20	Lack of clear and detailed drawings and specifications
	21	Interrelationship between activities in different overlapping parts
	22	Lack of uniformity due to continuous change in resource
	23	Effect of weather or climatic condition
	24	Lack of working drawings
	25	Lack of experienced local work force
	26	High cost
	27	High degree of overlap of design and construction
	28	Conducting and managing a project for the first time
	29	Technical design difficulties
	30	Variety of resource required

Table (1): Complexity factors of complex construction projects (Continued)

Category	No	Factors
process	31	Large number of critical path activities
	32	High amount of Mechanical &Electrical installation
	33	Performing a process for the first time
	34	Regulations to be observed
	35	Physically difficult function that requires simple or no equipment
	36	Technically complex function due to the evolution of the equipment
	37	The inherent difficulty of the building process
	38	Role that has no known procedure
	39	Lack of uniformity due to mechanical or other resource break down
	40	Unpredictable sub surface (e.g excavation in ancient city grounds)
	41	Undefined work in defined new structure
	42	Physically difficult role that requires the use of complex equipment
environment	43	Environmental influence-culture/social/legal environmental layer(e.g a similar project in a new location)
	44	Technical core environmental layer (e.g under ground construction chemical)
	45	Understanding the market condition
	46	Understanding the legal environment
	47	Economic situation

2.2. Analysis of influencing factors of project complexity

The complexity factors mentioned in the previous table (1) are analyzed from the point of view of the owner, contractor, and consultant. Identified complexity factors corresponding to the owner's perspective are (F1, F2, F3, F4, F5, F7, F10, F13, F14, F17, F26, F28, F30, F33, F34, F37, F41, F45, F46, and F47).Identified complexity factors corresponding to the contractor's perspective are (F7, F11, F12, F16, F17, F18, F19, F21, F22, F23, F24, F25, F26, F29, F30, F31, F32, F33, F35, F36, F37, F38, F39, F40, F41, and F42).

Identified complexity factors corresponding to the consultant's perspective are (F1, F4, F5, F6, F8, F9, F10, F14, F15, F20, F21, F24, F27, F28, F29, F30, F38, F39, F40, F41, F43, F44, and F46)
There are five stages of the project management cycle, include:

1. Initiation
2. Planning
3. Execution
4. Monitoring and control
5. Closure

-The first phase identifies and defines the goal of the project. The various factors covered in the initiation phase include (F1, F2, F3, F4, F5, F7, F9, F13, F17, F22, F26, and F30).

-Planning is the second step of the project management life cycle where you draw a big picture of the whole project. The various factors covered in the planning phase include (F6, F8, F10, F11, F12, F14, F15, F18, F27, and F34).

-The third phase, you can go ahead and execute the plan. The various factors covered in the execution phase include (F16, F18, F19, F20, F21, F22, F23, F24, F25, F27, F28, F29, F31, F32, F33, F35, F36, F37, F38, F39, F40, F41 , F42, and F44).

- The fourth phase of the cycle is monitoring and control. Monitoring allows you to see whether the project followed the plan and whether it was successfully completed on time or not.

- The last phase of a project management cycle is the closure of the project the various factors covered in the closure phase include (F43, F45, F46, and F47)

3. Research methodology

To explore the factors contributing to the project complexity, the following methodology, shown in Fig. (1).was used.
The research approach was conducted through four tasks.

- Task 1: Reviewing the definition of project complexity and concept of complexity and their types.
- Task 2: Identifying the initial project complexity factors from literature review.
- Task 3: Collecting data from expert practitioners through a survey questionnaire.
- Task 4: Analyzing the collected data Statistical methods were used to analyze the data to determine which factors are truly representative of project complexity.

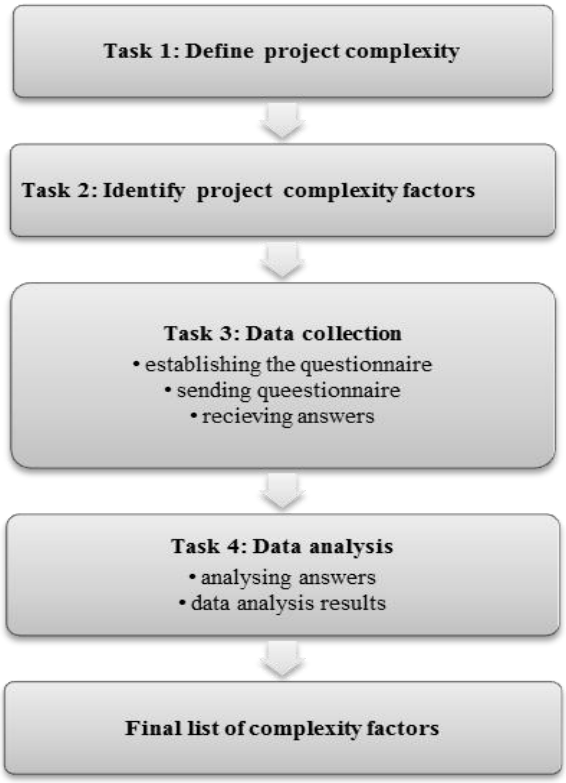

Fig.(1). Research approach

4. Data collection

Questionnaire surveys have been implemented from October 2019 to March 2020. But first the sample size, was determined According to Bartlett [21].the required sample size can be expressed as:

$$n = \frac{t^2 * s^2}{d^2}$$

Where:

- n: Sample size required.
- t: Statistic for confidence level (=1.96 when confidence level 95%).
- s: estimate of standard deviation = 1.167.
- d: acceptable margin of error for mean being estimated = 0.21.

In this study, the required sample size is 118.So a total of 118 questionnaires were handed out and 110 responses were received, so the recovery rate is 93.2%. After excluding 10 invalid questionnaires, 100 valid questionnaire were received thus the effective recovery rate was 84.7%.The questionnaire included 5 parts. In the first part, each respondent was asked about his name, company, experience and position.

In the other parts, the respondent was requested to rate the importance of the factors contributing project complexity. Personal meeting, phone discussion, google form and mailing were used to fill the questionnaire form. Tables 2 and 3 indicate some information about the respondents. The data from the study was analysed using the SPSS® software.

The reliability of the questionnaire was satisfactory by Cronbach's Alpha co-efficient of 0.897. This value means the accepted reliability and validity of the questionnaire data according to George and Mallery [22] classification.

Table (2): Information about Position of Respondents

Position	Number of respondents
Planning and cost engineer	8
Civil Engineer	18
Senior Engineer	11
Technical Office Engineer	12
Technical Office Manager	7
Planning Team Leader	10
Project Manager	16
Quality Manager	11
Contracts and Invoicing Manager	7
Total	100

Table (3): Information about Experience of Respondents

Years of Experience	Number of Respondents
Less than 10 Years	29
Between 10 and 20 Years	37
More Than 20 Years	34
Total	100

5. Analysis of Results

5.1 Data analysis

In order to calculate the relative importance weight of each factor at the project, the sum of Trimmed Mean (TM) for all factors and the sum of TM for the project category factors were calculated to get the weight of project complexity factors as expressed by Equations shown in the following steps. The results are shown in Table (4).

1) Get TM for all factors
2) Sum of TM for all factors= $\sum_{f=1}^{f} TM$
3) RIW = $\frac{TM}{\sum_{f=1}^{f} TM}$

Where;
TM: 5% trimmed mean.
F: Total number of factors affecting complexity.
RIW: Relative importance weight for factor at the project.

Table (4): Relative importance weights of main factors

Category	Factors	TM	RIW
people	F1- Hard relationships between the parties of the project	3.5632	0.023
	F2- Having a large number of stakeholders in the project	3.4368	0.022
	F3-problem with clients	3.3563	0.021
	F4-poor channels of communication	3.6897	0.023
	F5-poor decision making	3.8736	0.025
	F6-poor use of information	3.4023	0.022
	F7-number and diversity of teams involved and suppliers	2.7816	0.018
	F8-technical knowledge of team	3.4368	0.022
	F9-poorly defined project function	3.0805	0.020
	F10-lack of leadership	4.0000	0.025
	F11-lack of team cohesion	3.2989	0.021
	F12- lack of agreement on objectives between stakeholders	3.6897	0.023
	F13-lack of coordination within the team	3.5862	0.023
	F14-experience and skill level of project manager	4.0575	0.026
	F15-change orders	3.3678	0.021

Table (4): Relative importance weights of main factors (Continued)

Category	Factors	TM	RIW
project characteristics	F16-Large number of phases that make up the project	2.9655	0.019
	F17-Long time scale project	2.8851	0.018
	F18-High interdependencies between function of various tasks	3.0690	0.020
	F19-Rigidity of sequence between the various tasks within an operation	3.3448	0.021
	F20-Lack of clear and detailed drawings and specifications	3.7701	0.024
	F21-Interrelationship between activities in different overlapping parts	3.1839	0.020
	F22-Lack of uniformity due to continuous change in resource	3.2644	0.021
	F23-Effect of weather or climatic condition	2.8506	0.018
	F24-Lack of working drawings	3.2414	0.021
	F25-lack of experienced local work force	3.5172	0.022
	F26-High cost	3.3218	0.021
	F27-High degree of overlap of design and construction	3.1609	0.020
	F28-Conducting and managing a project for the first time	3.4483	0.022
	F29-Technical design difficulties	3.3793	0.021
	F30-Variety of resource required	3.0345	0.019
Process	F31- Large number of critical path activities	3.7241	0.024
	F32-High amount of Mechanical &Electrical installation	3.3448	0.021
	F33-Performing a process for the first time	3.5632	0.023
	F34-Regulations to be observed	3.1954	0.020
	F35-Physically difficult function that requires simple or no equipment	2.6667	0.017
	F36-Technically complex function due to the evolution of the equipment	2.9195	0.019
	F37-The inherent difficulty of the building process	2.7931	0.018
	F38-Role that has no known procedure	3.2442	0.021
	F39-Lack of uniformity due to mechanical or other resource break down	3.1724	0.020
	F40-Unpredictable sub surface (e.g excavation in ancient city grounds)	3.8621	0.025
	F41-Undefined work in defined new structure	3.5747	0.023
	F42-Physically difficult role that requires the use of complex equipment	3.3448	0.021
environment	F43-Environmental influence-culture/social/legal environmental layer	2.7701	0.018
	F44-Technical core environmental layer	3.5747	0.023
	F45-Understanding the market condition	3.4828	0.022
	F46-Understanding the legal environment	3.3563	0.021
	F47-Economic situation	3.7356	0.024
Total TM of all factors		157.38	

To calculate the Weight of each main factor related to its category, the relative importance weight (RIW) of each factor is calculated. The RIW for each factor at the project is calculated by dividing its TM value by the summation of TM values of all factors within its category. These values are shown in Tables (5) through (8). For each category, the relative importance weight (RIW) of the factors affecting project complexity is calculated as follows:

$$\text{RIW} = \frac{\text{TM of factor}}{\sum \text{TM for category}}$$

For ex, the RIW of factor F43 (in Table 8) is calculated as follows:

$\text{RIW} = \frac{2.7701}{16.92} = 0.164.$

Table (5): RIW for factors related to people

Category	Factors	TM	RIW
people	F1- Hard relationships between the parties of the project	3.5632	0.068
	F2- Having a large number of stakeholders in the project	3.4368	0.065
	F3-problem with clients	3.3563	0.064
	F4-poor channels of communication	3.6897	0.070
	F5-poor decision making	3.8736	0.074
	F6-poor use of information	3.4023	0.065
	F7-number and diversity of teams involved and suppliers	2.7816	0.053
	F8-technical knowledge of team	3.4368	0.065
	F9-poorly defined project function	3.0805	0.059
	F10-lack of leadership	4.0000	0.076
	F11-lack of team cohesion	3.2989	0.063
	F12- lack of agreement on objectives between stakeholders	3.6897	0.070
	F13-lack of coordination within the team	3.5862	0.068
	F14-experience and skill level of project manager	4.0575	0.077
	F15-change orders	3.3678	0.064
Total TM of all factors		52.62	

Table (6): RIW for factors related to project characteristics

Category	Factors	TM	RIW
project characteristics	F16-Large number of phases that make up the project	2.9655	0.061
	F17-Long time scale project	2.8851	0.060
	F18-High interdependencies between function of various tasks	3.0690	0.063
	F19-Rigidity of sequence between the various tasks within an operation	3.3448	0.069

Table (6): RIW for factors related to project characteristics (continued)

Category	Factors	TM	RIW
project characteristics	F20-Lack of clear and detailed drawings and specifications	3.7701	0.078
	F21-Interrelationship between activities in different overlapping parts	3.1839	0.066
	F22-Lack of uniformity due to continuous change in resource	3.2644	0.067
	F23-Effect of weather or climatic condition	2.8506	0.059
	F24-Lack of working drawings	3.2414	0.067
	F25-lack of experienced local work force	3.5172	0.073
	F26-High cost	3.3218	0.069
	F27-High degree of overlap of design and construction	3.1609	0.065
	F28-Conducting and managing a project for the first time	3.4483	0.071
	F29-Technical design difficulties	3.3793	0.070
	F30-Variety of resource required	3.0345	0.063
Total TM of all factors		48.44	

Table (7): RIW for factors related to process

Category	Factors	TM	RIW
process	F31- Large number of critical path activities	3.7241	0.095
	F32-High amount of Mechanical &Electrical installation	3.3448	0.085
	F33-Performing a process for the first time	3.5632	0.090
	F34-Regulations to be observed	3.1954	0.081
	F35-Physically difficult function that requires simple or no equipment	2.6667	0.068
	F36-Technically complex function due to the evolution of the equipment	2.9195	0.074
	F37-The inherent difficulty of the building process	2.7931	0.071
	F38-Role that has no known procedure	3.2442	0.082
	F39-Lack of uniformity due to mechanical or other resource break down	3.1724	0.081
	F40-Unpredictable sub surface (e.g excavation in ancient city grounds)	3.8621	0.098
	F41-Undefined work in defined new structure	3.5747	0.091
	F42-Physically difficult role that requires the use of complex equipment	3.3448	0.085
Total TM of all factors		39.40	

Table (8): RIW for factors related to environment

Category	Factor	TM	RIW
environment	F43-Environmental influence-culture/social/legal environmental layer	2.7701	0.164
	F44-Technical core environmental layer	3.5747	0.211
	F45-Understanding the market condition	3.4828	0.206
	F46-Understanding the legal environment	3.3563	0.198
	F47-Economic situation	3.7356	0.221
Total TM of all factors		16.92	

5.2. Result analysis

The weights the four categories and their factors were calculated. According to category weights, it found that; the relative importance of the factors related to people > the relative importance of the factors related to project characteristics > the relative importance of the factors related to process > the relative importance of the factors related to environment. According to the total weights, higher weight factors were chosen and 12 factors were therefore found to have the greatest impact on the complexity of the project. The most important factors are shown in table 9.

Table (9): The most important factors

Category	No	Factor
people	1	F5:Poor decision making
	2	F10:Lack of leadership
	3	F12:Lack of agreement on objectives between stakeholders
	4	F14:Experience and skill level of project manager
project characteristics	5	F20:Lack of clear and detailed drawings and specifications
	6	F25:lack of experienced local work force
	7	F28:Conducting and managing a project for the first time
process	8	F31: Large number of critical path activities
	9	F40:Unpredictable sub surface (e.g excavation in ancient city grounds)
	10	F41:Undefined work in defined new structure
environment	11	F44:Technical core environmental layer (e.g underground construction chemical)
	12	F47:Economic situation

5.3. Result discussion

From previous steps, the most complex factors have been identified and explained in table (9), but at this stage, these critical factors will be discussed.

- The first factor is (poor decision-making) It's about the project's stakeholder's different opinions and agendas that may lead to conflict and poor decision-making.
- The second factor is (Lack of leadership) It's about a lack of control over the situation and appropriate decisions by the project manager.
- The third factor is (Lack of agreement on objectives between stakeholders) It's about the stakeholders did not agree on the objectives of the project.
- The fourth factor is (Experience and skill level of project manager) It's about The project manager's experience and familiarity with the components of the project including stakeholders, company, project team, a similar type of project, country, etc.
- The fifth factor is (Lack of clear and detailed drawings and specifications) It's about Drawings and specifications not being clear and complete.
- The sixth factor is (lack of experienced local workforce) It's about The experience of the local project team is very weak and they lack familiarity with the components of the project
- The seventh factor is (Conducting and managing a project for the first time) It's about managing a project for the first time causes many problems due to a lack of experience
- The eighth-factor is (A Large number of critical path activities) It's about Projects that have a large number of dependent activities
- The ninth factor is (Unpredictable sub surface (e.g excavation in ancient city grounds)) It's about Projects that have high interaction with their environment
- The tenth factor is (Undefined work in defined new structure) It's about Unpredictable work in a defined new structure(e.g as in new work added to old buildings without record drawings)
- The factor eleven is (Technical core environmental layer (e.g underground construction chemical))It's about The presence of a chemical layer beneath the Earth's surface will affect the planning of the project
- The factor twelve is (Economic situation) It's about Economic conditions of the State surrounding the project in terms of price increases

6. Conclusion

The aim of this study was to identify, rank and weight the complexity of project factors, accordingly, the paper measured the key factors of the project complexity, using a survey questionnaire. This process included a quantitative approach. 47 factors of project complexity of complex construction projects were initially introduced from literature review. The potential factors were grouped into four categories. Through the analysis, 12 key complexity factors (those having the greatest impact on project complexity) were identified. Including:-

- Poor decision making
- Lack of leadership
- Lack of agreement on objectives between stakeholders
- Experience and skill level of project manager
- Lack of clear and detailed drawings and specifications
- Lack of experienced local work force
- Conducting and managing a project for the first time
- Large number of critical path activities
- Unpredictable sub surface (e.g excavation in ancient city grounds)
- Undefined work in defined new structure
- Technical core environmental layer (e.g underground construction chemical)
- Economic situation

The results of the study could serve as a basis for further study of the complexity of project. As well as provide guidelines to project managers to improve the management of complexity of complex construction projects.

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Questionnaire Survey form

Part A (Personal Information)								
Name : position:								
Years of experience: Telephone No:								
Company: E-mail:								
The following are 47 factors affect project complexity. Please, put "√" to evaluate the importance degree of these factors. (1= Very Low, 2= Low , 3= Moderate , 4= High , 5= Very High)								
	Category	No	Factors	1	2	3	4	5
PART B (Factors contributing to Project Complexity related to people)	people	1	Hard relationships between the parties of the project					
		2	Having a large number of stakeholders in the project					
		3	problem with clients					
		4	poor channels of communication					
		5	poor decision making					
		6	poor use of information					
		7	number and diversity of teams involved and suppliers					
		8	technical knowledge of team					
		9	poorly defined project function					
		10	lack of leadership					
		11	lack of team cohesion					
		12	lack of agreement on objectives between stakeholders					
		13	lack of coordination within the team					
		14	experience and skill level of project manager					
		15	change orders					
PART C (Factors contributing to Project Complexity related to project characteristics).	project characteristics	16	Large number of phases that make up the project					
		17	Long time scale project					
		18	High interdependencies between function of various tasks					
		19	Rigidity of sequence between the various tasks within an operation					
		20	Lack of clear and detailed drawings and specifications					
		21	Interrelationship between activities in different overlapping parts					
		22	Lack of uniformity due to continuous change in resource					
		23	Effect of weather or climatic condition					
		24	Lack of working drawings					
		25	lack of experienced local work force					
		26	High cost					

Questionnaire Survey form (continued)

	Category	No	Factors	1	2	3	4	5
		27	High degree of overlap of design and construction					
		28	Conducting and managing a project for the first time					
		29	Technical design difficulties					
PART D (Factors contributing to Project Complexity related to process)	process	30	Variety of resource required					
		31	Large number of critical path activities					
		32	High amount of Mechanical &Electrical installation					
		33	Performing a process for the first time					
		34	Regulations to be observed					
		35	Physically difficult function that requires simple or no equipment					
		36	Technically complex function due to the evolution of the equipment					
		37	The inherent difficulty of the building process					
		38	Role that has no known procedure					
		39	Lack of uniformity due to mechanical or other resource break down					
		40	Unpredictable sub surface (e.g excavation in ancient city grounds)					
		41	Undefined work in defined new structure					
		42	Physically difficult role that requires the use of complex equipment					
PART E (Factors related to	environment	43	Environmental influence-culture/social/legal environmental layer					
		44	Technical core environmental layer					
		45	Understanding the market condition					
		46	Understanding the legal environment					
		47	Economic situation					
others		1						
		2						
		3						
		4						