

Glossary

Cause and effect:

A cause is the event that gives rise to the alleged delay. The effect is the alleged period of delay that the event causes. There must be a demonstrable link between the two.

Consultant:

The party who is in charge of the design of the project components and the Supervision of the contractor's work and ensures that the project is constructed in full compliance with the project documents.

Contractor:

A person, company or firm who holds a contract for carrying out the works and/or the supply of goods in connection with the project.

Completion date

The date calculated by which the project should finish, following careful estimating.

Critical activity

Any activity on a critical path. Most commonly determined by using the critical path method.

Date for completion

The date stated in the contract when practical completion is to be achieved.

Owner

The party legally responsible under the terms of a contract for financing the project.

Project Plan:

A formal, approved document used to guide both project execution and project control. The primary uses of the project plan are to document planning assumptions and decisions, to facilitate communication among stakeholders, and to document approved scope, cost, and schedule baselines.

References

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Appendices

A- Covering Letter sent with the questionnaire

B- Questionnaire.

Appendix - A. Covering Letter sent with the questionnaire

Dear Sir or Madam:

Subject: Survey

I am presently preparing a thesis on the delay of construction project completion as part of my Masters Degree course in Construction Management.

An important element of the thesis is to carry out a field survey to assess the causes of delays as actually experienced by the construction parties.

Enclosed please find a questionnaire, and based on your experience as a professional in the field of construction, I kindly request you to spare part of your valuable time to fill it in. Please note that your name and your company or department name will remain confidential as far as the results are concerned. The collected data will be statistically analyzed, and a conclusion will be finalized. If you wish, I shall be happy to provide you with the results of the study once finished.

Your assistance and cooperation will be highly appreciated

Thank you,

Eman Babiker Abdullah

Questionnaire

A comparative study of construction delay factors in Sudan and DUBAI (United Arab Emirates).

A part of the dissertation research for an M.Sc Project management study

The purpose of this study is to measure the frequency of occurrence, severity of impact and significance of delay factors in construction projects.

Please respond to the following questions either by ticking the appropriate box or by writing your answer in the space provided.

Please note:

The answers should be based on your experience in construction projects.

All information provided will be treated in the strictest confidence.

Section one Questions related to the respondent's experience.

1.1. What is the nature of your business?

☐ Contractor

☐ Consultant

☐ Client/ Client representative

☐ Other , please specify _____

1.2. What is the sector type you work for?

☐ Public

☐ Private

☐ Both

1.3. How long have you been dealing with construction projects?

☐ <5 years

☐ 5-10 years

☐ 10-15 years

☐ >15 years

1.4. What is your work area? (You may select more than one)

☐ Commercial construction

☐ Industrial construction

☐ Governmental construction

☐ Residential construction

☐ Other please specify.....

1.5 What is/are the size of project/s that have you participated in for the last year? (You might select more than one)

- ☐ Above USD 100,000,000 .00
- ☐ USD 50,000,000.00 to USD100,000,000.00
- ☐ USD 25,000,000.00 to USD 50,000,000.00
- ☐ Below USD 25,000,000.00

Section two Questions related to the contractual arrangements

2.1. What is/are the procurement method(s) that you have dealt with? (You may select more than one)

- ☐ Management contracting
- ☐ Traditional
- ☐ Design and build
- ☐ Other please specify.....

2.2. What is/are the tendering arrangement(s) that you have used? (You may select more than one)

- ☐ Negotiation
- ☐ Open tendering
- ☐ Selective tendering

☐ Two-stage selective tendering

☐ Serial or contentious please specify.....

Section three Questions related to the performance of project/s you
Have been involved in.

3.1. How many construction projects
(Approximately) have you participated in?
Please specify _____

3.2. Was one or more of them delayed?

☐ Yes

☐ No

If the answer to question 3.2 is NO please go to question 3.6

3.3. How many of them were delayed?

Please specify _____

3.4. What is the average delay time of the delayed project/s?

☐ Less than 10%

☐ 10 to 30 %

☐ 31 to 50 %

☐ 51 to 100%

☐ Over 100 % please specify _____

3.5. What is the average of delayed time that was let pass by Client/s?

☐ All the delayed time

- ☐ About 75% of delayed time
- ☐ About 50 % of delayed time
- ☐ About 25% of delayed time
- ☐ The Contractor paid the liquidated damages for all delayed time.

Who is the first responsible party for the delay?

- ☐ Contractor
- ☐ Consultant
- ☐ Client
- ☐ Others. Please specify _____

Section four Causes of delay

4.1. Rank / arrange the following causes of delay according to their frequency and severity weight. The range of weighting in the research survey scaled from 1 to 4, as shown below:

| Scale | Frequency | Severity |
|-------|--------------|---------------|
| 1 | Never | No effect |
| 2 | Occasionally | Fairly severe |
| 3 | Frequently | Severe |
| 4 | Constantly | Very severe |

Causes of delay attributed to contractor
Materials

| | <i>Frequency</i> | <i>Severity</i> |
|---|---|---|
| | <i>1 2 3 4</i> | <i>1 2 3 4</i> |
| 1-Shortage of required material | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 2- Delay in material delivery due to poor transportation and expediting arrangements. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 3-Changes in materials prices | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 4- Changes in materials specifications | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 5- Delay in placing Purchase Orders for long lead items. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 6- Delays due to the wrongly delivered material to site. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

Equipment

| | | |
|------------------------------------|---|---|
| 7- Shortage of required equipments | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
|------------------------------------|---|---|

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|--|---|---|
| 8- Failure of equipment | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 9- Inefficient equipment | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 10- Inadequate equipment used for the work | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

Manpower

| | | |
|---|---|---|
| 11- Shortage of manpower (skilled , semi-skilled , unskilled labour) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 12- low skill of manpower | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

Project Management

| | | |
|---|---|---|
| 13-Lack of motivation among Contractor's members | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 14- Shortage of Contractor 's administrative personnel | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 15-Shortage of technical professionals in the Contractor's organization. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 16- Poor communications by the Contractor with the parties involved in the project. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 17- Contractor's poor coordination with the parties involved in the project. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

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|---|---|---|
| 18- Slow processing of changed orders requested by the Client. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 19- High Restrictions to Project Manager limits of authorities. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 20- Delays in mobilization | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 19- Selection of unqualified sub Contractors | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 21- Poor management of subcontractor by Contractor | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 22- Poor implementation of HSE procedures and requirements within the Contractor's organization | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 23- Poor qualification of the Contractor's technical staff assigned to the project | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 24- Changes in the project organization chart throughout the project duration. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 25- Improper studies for the technical requirements of the Bidding documents by the Contractor during the bidding stage | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 26- Ineffective planning and scheduling of the project by the Contractor | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 27- Delays in the field survey by the Contractor | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 28- Ineffective control and monitoring of project progress by the Contractor | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 29- Poor cost control throughout the project duration. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

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| 30- Poor implantation of Quality Control requirements. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 31- Delays in the preparation of the Contractor submissions | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 32- Poor documentation control. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 33- Improper construction methods implemented by the Contractor. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

Project Finance

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|---|---|---|
| 34- Difficulties in financing the project by the Contractor | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 35- Cash flow deficiency faced by the Contractor | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

Causes of delay attributed to Consultant

| | | |
|--|---|---|
| 36- Poor qualification of the Consultant engineer's staff assigned to the project | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 37- Delay in the preparation of drawings | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 38- Delay in the approval of Contractor submissions by the Consultant | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 39- Poor communication between the Consultant engineer and the other parties involved in the project | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

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|---|---|---|
| 40-Poor coordination by the Consultant engineer with other parties involved | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 41- Delay in performing inspection and testing by the Consultant engineer | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 42- Slow response from the Consultant engineer to Contractor inquiries | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 43- Poor contract management | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

Causes of delay attributed to Client_

| | | |
|--|---|---|
| 44- Delay in hand over the site to the Contractor by the Client | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 45- Delay in the settlement of Contractor claims by the Client | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 46- Delay in issuing of change orders by the Client | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 47- Delay of progress payments by the Client | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 48- Poor coordination by the Client with the various parties during construction. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 49- Client's poor communication with the construction parties and the government authorities | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 50- Slow decision making by the Client's organization | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

| | | |
|--|---|---|
| 51- Excessive bureaucracy in the Client's administrations. | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
|--|---|---|

Early Planning and design

| | | |
|---|---|---|
| 52- Original Contract duration is too short | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 53- Change in the scope of the project | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 54- Ambiguities , mistakes ,and inconsistencies in specifications and drawings | | |
| 55- Subsurface site conditions materially differing from the Contractor documents | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

Causes of delay attributed to Government Regulations

| | | |
|--|---|---|
| 56- Difficulties in obtaining work permits | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 57 -Non stable government taxes policy | | |

Causes of delay attributed to External Factors

| | | |
|---|---|---|
| 58- Bad weather conditions on the job site | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 59- Effect of social and cultural conditions | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 60- Rise in the prices of materials | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 61- Effects of subsurface conditions (type of soil, utility lines , water table) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

4.2. Please write down the most important 5 causes of delay of construction Projects in your region? (See the causes of delay in section four)

1. _____
2. _____
3. _____
4. _____
5. _____

