

EFFECTIVE CRITERIA FOR SELECTING DELAY ANALYSIS METHODOLOGIES FOR CONSTRUCTION PROJECT IN ABU DHABI

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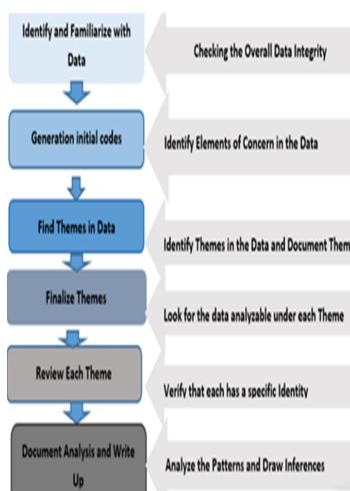
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Abstract

This paper examines the effective criteria to determine the capable delay analysis methodologies by the contractors for the construction's claim in Abu Dhabi. The previous research was argued that 50% of the construction projects in UAE encounter delays and are not completed on time. Selecting the delay analysis methodology is a significant part of the claim process. Numerous delay analysis techniques used in the UAE, and constitute several factors. Thus, the selection practice is more significant to identify the delays. Contractor's analyst consumed exaggerated time and effort to show their right using delay analysis methodologies (DAMs) and submit this as an extension of time claim, demanding to make the most of their benefits. The aim of this study contains exploring the selection of the delay analysis methodologies by the contractors for the construction's claim in Abu Dhabi. In this regard, five case studies were selected on the basis that they represent examples for application of the delay analysis methods and techniques for the residential building. The respondents were selected from five projects and the interviews were held with the Contractor of each project. The collected Qualitative Data was analysed manually by using Thematic Analysis. The study found that the effective criteria for determining the delay analysis methodologies lie in its acceptance in court and as per contractual requirements. Furthermore, the factors influence the selection of the effective criteria for determining the delay analysis methodologies are the acceptance of the selected delay analysis method /technique, realistic results and accuracy of the delay analysis method /technique. However, the findings from this study become more important, if more studies are conducted to extend the exploring of the different delay analysis methodologies used by the contractors for the construction's claim for wide range of projects in Abu Dhabi.

Keywords: Claim, Delay Analysis method, Extension of Time, Thematic Analysis

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1.0 INTRODUCTION

Delay analysis is a process to work out the respective delay to determine the delay liabilities of the client and the Contractor [1]. The type of the delay would affect the chosen of the delay analysis methods and techniques [2]. Society of Construction Law (SCL) Protocol and the Association for the Advancement of Cost Engineering International (AACEI) guidance provide regulations on the factors, which support in deciding on which techniques and methods are suitable under given conditions. The first factor is to be considered when determining the

effective criteria for selecting delay analysis methodologies is the complexity of the delay analysis methods. Complex means necessitating effort, cost and time. A sample of this having a delay analysis, cost more than the whole claim value [2]. Also, [3] mentioned that usually, all methods appear to be simple in theory, but they are difficult in practice. The second factor is the level of the details required for the analysis. The major factor for the choice on the proper level of detail for the delay are the accessibility of the records, time and resources obtainable to accomplish the analysis [2]. The third factor for determining the effective criteria for selecting delay analysis methodologies is the availability of resources including time,

cost and effort. A sample of this having a delay analysis, cost exceeds the total claim value or failing to accomplish the delay analysis because of the lack of records [4]. This study was carried out throughout analyzing the information of five case studies and interviewing the pertinent delay analysts and planners.

2.0 LITERATURE REVIEW

This literature addresses the different criteria for selecting delay analysis methodologies used by the Contractors in Abu Dhabi and other countries. These existing methods contribute to examine the criteria for determining the effective delay analysis methodologies. On this regard, the study addressed the existing theoretical and empirical processes in SCL Protocol and the AACEI guidance. SCL Protocol and the AACEI (Association for the Advancement of Cost Engineering International) guidance provide regulations on the factors, which support in deciding on which techniques and methods are suitable under given conditions. The factors enclosed within both documents are alike (as shown in Table1). However, the AACEI gives two extra factors (forum for resolution and legal or technical requirements) according to USA case law and the knowledge and experience of USA Courts with the obtainable techniques and software [5] and [6].

DAMSA is a simple method for chosen of the appropriate delay analysis methodologies. DAMSA used for any construction contract and it considered the AACEI guidance and computation of suitability scores of DAM (Delay Analysis Method) by [7]. DAMSA as shown in Table 1 provides more understanding of the foundation for the selection of the delay analysis. DAMSA deals also with the specified methods for delay analysis as per the contract requirements [8]. According to [5, 8], the factors for the selection of the delay analysis methodology in DAMSA are a combination of the previous factors for the selection of the delay analysis methodology in SCL protocol and AACEI guidelines as shown in Table 1.

Table 1 Factors for the Selection of the Delay Analysis Methodology in DAMSA, SCL protocol and AACEI guidelines

No	Selection Factor in DAMSA	Selection Factors in SCL Protocol	Selection Factors in AACEI Guidance
1	Record availability	Related conditions of contract	Requirements for contract
2	Baseline programme availability	the status of the causative events of delay	Objective of delay analysis
3	Nature of Baseline programme	Value of the claim	Availability and reliability of data
4	Updated programmes availability	Time obtainable	Claim's size
5	Applicable legislation	Availability of records	Difficulty of the claim
6	Form of contract	Availability of the programme information	Available cost for delay analysis
7	Dispute resolution forum	Skill level for the analyst and knowledge about the project	Available time for delay analysis

Based on the previous studies published by [9, 10, 11, 12] the findings were addressed to summarize the current criteria for the Selection of Delay Analysis Methodologies in UAE as showed in Table 2.

Table 2 Current Criteria for The Selection of Delay Analysis Methodologies in UAE

No	Reference	Findings
1	[9]	According to the UAE Civil Procedure's Code, dispute in any construction project could be solved by adapting the regular resolution process: mediation, negotiation, arbitration or litigation. Most of the claims (77.1%) in the UAE are determined adapting negotiation; just (4.9%) of claims were determined adapting litigation.
2	[10]	Numerous delay analysis techniques used in the UAE, and with the participation of several factors, the selection practice be more significant to identify the delays. Contractors give a lot to the analyst to show their right using delay analysis methodologies (DAMs) and submit this as an extension of time claim, demanding to make the most of their benefits.
3	[11]	A study made to evaluate the diversity of delay analysis methods for projects in the UAE. The feedback collected for the study found that 51% of the participants accepted TIA to be the more regularly acceptable method for delay analysis.
4	[12]	According to UAE law does not permit contract to be prolonged exclusive of the agreement. When the completion date cannot extend, a Contractor is, by defaulting (according to FIDIC), eligible for LD (Liquidated Damages).

3.0 METHODOLOGY

Case studies are valuable for revealing the details of a phenomenon, in specific the relationship between the phenomenon and its perspective. Benefits with a multiple case study are that the researcher is able to analyse the data within each condition and through diverse situations [13]. The case studies were selected on the basis that they represent examples of delay analysis methods and techniques for the construction projects in Abu Dhabi. The selected cases reflected characteristics & problems identified in the underlying theoretical propositions and conceptual framework for the study. The selected case studies represent sample of construction projects that facing different type of delays during the construction. The general purpose of the case studies is to describe in details the individual situation of delay and delay analysis for each case.

The study aims to determine effective criteria for selecting delay analysis methodologies. For this purpose, interviews

were conducted with 5 participants, to gain information about the criteria for selection of delay analysis methodologies. A total number of 7 questions were developed for understanding the contractor’s point of view, which were open-ended in nature, wherein the respondents were allowed to answer subjective questions in a comprehensive manner. The thematic analysis was applied to the collected data. Thematic analysis can be defined as the procedure used for the analysis of qualitative data. The researcher inspects the data to generalize themes; patterns, ideas, and topics that repeatedly occur within the transcripts [14]. The methodology for the five case studies is elaborated in Figure 1.

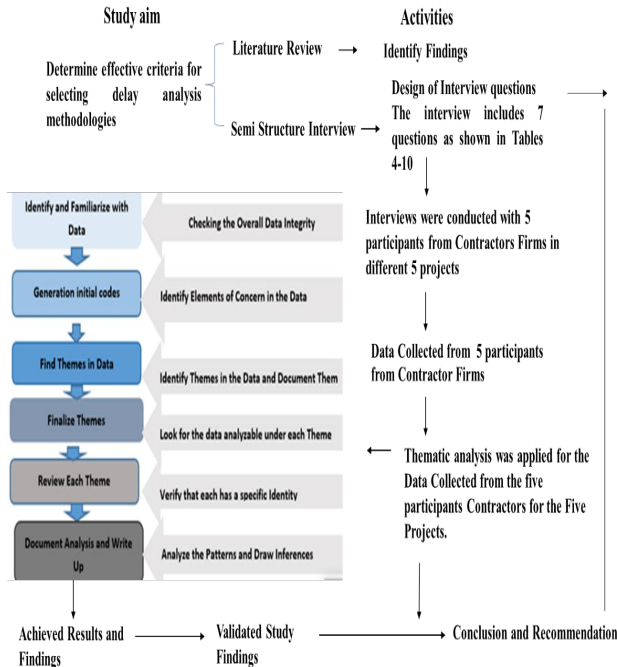


Figure 1 Methodology for the Study

In the stage of familiarizing with the data, Careful rereading and recasting of the information is the primary factor to interpret the qualitative evidence or interview transcripts. The detailed analysis establishes an overall image of the data which allows the researcher to consolidate the responses according to the given meaning or themes in the work [15]. Generation Initial Codes for data of Contractor’s viewpoint was done after the stage of familiarizing with the data. The adapted stage was arranging the data more systematically. The relevant themes identified through the coding process in different colours are presented in Table 3 to Table 9 in the semi structure interviews including a total number of 7 questions, which were conducted with the contractors to elaborate the Contractor’s viewpoint in order to meet the study objectives. To achieve the study objective “Effective Criteria for Determining the Delay Analysis Methodologies” data was collected and analysed for Question No. 1 as shown in Table No.03.

Table 3 Initial Coding for the Relevant Themes Identified through the Coding Process for Question 1.0

No.	Respondent No.	Responses	Initial Codes
Q1. What are the effective criteria for determining the delay analysis methodologies?	Respondent No.01	Windows Time Impact Analysis is the more regularly acceptable method for delay analysis and approved method by the courts in the UAE.	27. Acceptable method 28. Approved method in court 29. As per law 30. Contractual requirements
	Respondent No.02	The Contractor selected the Impacted As-Planned Method according to The Society of Construction Law Delay	
	Respondent No.03	The Time Impact Analysis method is approved method by the courts in the UAE	
	Respondent No.04	The contractual requirement is to use Windows/Time Impact Analysis for delay analysis	
	Respondent No.05	The contractual requirement is to use Windows/Time Impact Analysis for delay analysis.	

The study explored the factors influence the selection of the effective criteria for delay analysis methodologies. The relevant themes identified through the coding process as presented in Table 4 in the semi structure interviews for question No.02.

Table 4 Initial Coding for the Relevant Themes Identified through the Coding Process for Question 2

No.	Respondent No.	Responses	Initial Codes
Q2. What is the factors influence the selection of the effective criteria for determining the mention	Respondent No.01	-Popularity and the acceptance of the delay analysis method among the project parties.	31. Popularity and acceptance 32. Accurate and realistic
	Respondent No.02	-A simple contract or, in the case of more complex projects, delays events that occur only over limited periods. -An accurate and realistic As-planned program	33. delay events that occur only over limited periods 34. Contractual

ed delay analysis methodologies?	Respondent No.03	-The Capabilities of the Windows TIA (Time Impact Analysis)	requirement 35. Capabilities
	Respondent No.04	-Windows/Time Impact Analysis is Commonly used in the UAE -Contractual requirement is to use Windows/Time	
	Respondent No.05	-Windows/Time Impact Analysis is Commonly used in the UAE -Contractual requirement is to use Windows/Time Impact Analysis for delay analysis	

The study investigated the influence of the delay's type on the selection of the delay analysis method /technique. The relevant themes identified through the coding process as presented in Table 5 in the semi structure interviews for question No.03.

Table 5 Initial Coding for the Relevant Themes Identified through the Coding Process for Question 5

No.	Respondent No.	Responses	Initial Codes
Q3. Please explain how is the type of delay) affected the selection of the delay analysis method /Technique?	Respondent No.01	No affection.	36. No impact 37.Impacted as Planned Analysis method not suitable for Concurrent delay
	Respondent No.02	The Impacted as Planned Analysis method adds an identified excusable delay event (or events), either as a separate activity (or activities).	
	Respondent No.03	No Affection	
	Respondent No.04	In this case no effect. The contractual requirement is to use Windows/Time Impact Analysis for delay analysis.	
	Respondent No.05	In this case no effect. The contractual requirement is to use Windows/Time Impact Analysis	

The study explored the influence of the project complexity on the selection of the delay analysis method /technique. The

relevant themes identified through the coding process as presented in Table 6 in the semi structure interviews for question No.04.

Table 6 Initial Coding for the Relevant Themes Identified through the Coding Process for Question 4

No.	Respondent No.	Responses	Initial Codes
Q4. How is the project complexity having an influence on your selection for the mentioned delay analysis method /Technique in Question 4?	Respondent No.01	If the project is complex and delay events are complicated, Windows Time Impact Analysis method impacts each and every delay event on the program of work.	38. Complex project and complicated delay events mean Windows Time Impact Analysis 39. a separate Time Impact Analysis Program is dedicated to each of the principal delays 40. Simple project or limited number of delays mean Impacted As a Planned Analysis method 41. Contractual requirement is to use Windows/Time Impact Analysis for delay analysis
	Respondent No.02	The Impacted As Planned Analysis method has been affected by a limited number of delays only.	
	Respondent No.03	There were several delays events, a separate Time Impact Analysis Program was dedicated to each of these principal delays.	
	Respondent No.04	Contractual requirement is to use Windows/Time Impact Analysis for delay analysis.	
	Respondent No.05	Contractual requirement is to use Windows/Time Impact Analysis	

The study examined the influence of nature and number of delay events on the selection of the delay analysis method /technique. The relevant themes identified through the coding process as presented in Table 7 in the semi structure interviews for question No.05.

Table 7 Initial Coding for the Relevant Themes Identified through the Coding Process for Question 5

No.	Respondent No.	Responses	Initial Codes
Q5. How does the nature and number of delay events affect your selection for the mentioned delay analysis method /Technique in Question No.4?	Respondent No.01	Windows Time Impact Analysis is used regardless of the nature and number of delay events.	42. regardless of the nature and number of delay events. 43.The contractual requirement is to use Windows/Time Impact Analysis 44.Simple project or limited number of delays mean Impacted As a Planned Analysis method 45. the most critical net effect which causes the delay is taken into consideration
	Respondent No.02	The Impacted As Planned Analysis method needs simple project.	
	Respondent No.03	The delay events were impacted simultaneously and the most critical net effect which causes the delay is taken into consideration.	
	Respondent No.04	The contractual requirement is to use Windows/Time Impact Analysis for delay analysis.	
	Respondent No.05	The contractual requirement is to use Windows/Time Impact Analysis for delay analysis.	

The study explored the influence of project records on the selection of the delay analysis method /technique. The relevant themes identified through the coding process as presented in Table 8 in the semi structure interviews for question No.06.

Table 8 Initial Coding for the Relevant Themes Identified through the Coding Process for Question 6

No.	Respondent No.	Responses	Initial Codes
Q6. How is the availability of the project records affecting the selection of the mentioned delay	Respondent No.01	If the project records are not available, the Contractor cannot proceed with the Windows Time Impact Analysis. Selection of the Windows Time Impact Analysis method was relied in Baseline program.	58.Cannot proceed without project records 59.The Contractor selects an analysis method only after the availability of
	Respondent No.02	Due to the availability of the accurate and realistic	

No.	Respondent No.	Responses	Initial Codes
analysis method /Technique?		As-planned program.	the accurate and realistic records. 60. regardless the availability of the project records the contractual requirement is to use the mentioned method 61. Relies on Baseline program
	Respondent No.03	The Baseline program for ID work in accordance with the main Contractor approved Baseline Program and it had been used for time impact analysis based on critical path method logic.	
	Respondent No.04	Regardless the availability of the project records the contractual requirement is to use Windows/Time Impact Analysis for delay analysis.	
	Respondent No.05	The Engineer requested the Contractor to submit updated program in order to enable the Engineer review the delay analysis submission	

The study investigated the influence of time, cost and resource on the selection of the delay analysis method /technique. The relevant themes identified through the coding process as presented in Table 9 in the semi structure interviews for question No.07.

Table 9 Initial Coding for the Relevant Themes Identified through the Coding Process for Question 7

No.	Respondent No.	Responses	Initial Codes
Q7. How is the available time, cost and resource for performing the delay analysis influence on your selection for the delay analysis method /Technique?	Respondent No.01	-The Contractor shall select effective delay analysis method /Technique to meet the available time according to FIDIC' -Using cheaper and commercial software like Primavera will save costs -Skilled delay analyst will prepare perfect delay analysis submission to the Engineer	68. Selects an effective method. 69.cheaper and commercial software like Primavera 70.Skilled delay analyst prepares proper delay analysis submission 71.the contractual requirement 72. Unskilled delay analyst employed which led to
	Respondent No.02	Using effective delay analysis methods such as The Impacted As Planned Analysis method saves time, cost and resource	
	Respondent No.03	In this case the delay analyst had sufficient	

		available time, cost and resource, the Windows Time Impact Analysis was applied for the eight delay events	resource wastage. 73. No constraints
Respondent No.04		Regardless the availability of the time, cost and resource the contractual requirement is to use Windows/Time Impact Analysis for delay analysis.	
Respondent No.05		In this case the Contractor did not save time, cost and resource, whereas the delay analyst was not skilled .	

			and 12 Typical Floors with Roof Floor.	
5	Residential Building	626 m2	-Three Basement Floors for Car Parking, Ground with Main Entrance and fifteen Typical Floors.	USD 13,433,036.000

4.0 DATA ANALYSIS AND DISCUSSION

The case studies were chosen to cover different type of construction buildings in Abu Dhabi including one project for Community Villas Development, three Residential Building projects and one Hotel includes Residential Floors (as shown in Table 10).

Table 10 Description of the Five Case Studies

NO.	Type of Project	Area	Scope of work	Contract value of the project
1	Community Villas Development	28,518.41 m ²	-Construction of 42 housing units (Villas) consists of 3 Types.	USD 22,469,750.000
2	Residential Buildings	663m2	-Construction of Three Basement Floors for Automated Parking System, Ground Floor and 12 Typical Floors with Roof Floor.	USD 12,978,875.000
3	Hotel and Residential Buildings	10,485.10 m2	-The project consists of a 46 Stories Tower including 377 Hotel keys and 10 Floors Residential Apartments.	USD136 Million
4	Residential Building	560 m2	-Two Basement Floors for Automated Parking System, Ground Floor	USD 9,492,565.000

Data were collected from 5 participants of varying nationalities who are participate in preparing and evaluating the delay analysis submissions in the selected case studies. Table 11 addressed the respondent's demographics. The respondent of project no.01 who participated in the current study had an overall experience of 20 years in delay analysis practice. Currently, the respondent held the designation of delay analyst. The respondent of project no.02 who participated in the current study had an overall experience of 25 years in delay analysis practice. Currently, the respondent held the designation of planning manager. The Planning manager was a Lebanese male (aged 55 years old). The respondent of project no.03 who participated in the current study had an overall experience of 20 years in delay analysis practice. The respondent of project no.04 had an overall experience of 15 years in delay analysis practice. The respondent of project no.05 who participated in the current study had an overall experience of 20 years in delay analysis practice. Figure 2 illustrates the years of experience for contractor's participants.

Table 11 Respondents Demographics

Demographic		n	%
Gender	Female	0	0%
	Male	5	100%
	No Response	0	0%
	Total	5	100
Years of Experience	15Years	1	20%
	20Years	3	60%
	25Years	1	20%
	Total	5	100
Nationality	Iraq	1	20%
	Egyptian	1	20%
	Jordan	1	20%
	Lebanese	2	40%
	No Response	0	0%
	Total	5	100
Position	delay analyst	1	20%
	planning manager	1	20%

	senior planning engineer	3	60%
	No Response	0	0%
	Total	5	100

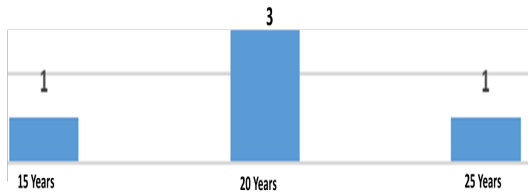


Figure 2 Years of Experience for Contractor's Participants

Finding Themes in data for contractor's point of view is to convert the initial codes into themes, which are as aforementioned, similar patterns that occur in the qualitative data [16]. A list of potential themes and a thematic map outlining their potential is summarizing or describing the data to provide interpretative analysis [17]. Finding themes was done to achieve the research objective of understanding the barriers. Identifying themes is significant step to find the salient themes present in the data [18]. When thematic analysis can be harnessed in qualitative data analysis, constructivist thematic analyses will search for more latent and deeper themes [19]. Searching and identifying themes are important to help with an analytical clarification, and to increase rigor and acceptability of data analysis [20]. Table 12 demonstrates the preliminary themes along with the codes that are related to them. Here, all of the codes fit under either one or more themes; they are further presented for clarity.

Table 12 Searching and Identifying Themes

No	Preliminary Themes Along With The Codes That Are Related To Theme
1	Theme 1: The effective criteria for determining the delay analysis methodologies Acceptable method, approved method in court, as per law and contractual requirements
2	Theme 2: The factors influence the selection of delay analysis methodologies Popularity and acceptance, accurate and realistic, delay events that occur only over limited periods, contractual requirement and capabilities
3	Theme 3: Type of delay impacts selection of delay analysis techniques No impact and Impacted as Planned Analysis method not suitable for Concurrent delay
4	Theme 4: The project complexity has an influence on the delay analysis method Complex project and complicated delay events mean Windows Time Impact Analysis, a separate Time Impact Analysis Program is dedicated to each of the principal delays, simple project or limited number of delays means Impacted As a Planned Analysis

	method and contractual requirement is to use Windows/Time Impact Analysis for delay analysis
5	Theme 5: The nature and number of delay events Regardless of the nature and number of delay events, the contractual requirement is to use Windows/Time Impact Analysis, simple project or limited number of delays means Impacted As a Planned Analysis method and the most critical net effect which causes the delay is taken into consideration
6	Theme 6: The impact of project records Cannot proceed without project records, the contractor selects an analysis method only after the availability of the accurate and realistic records, regardless the availability of the project records the contractual requirement is to use the mentioned method and relies on Baseline program
7	Theme 7: the impact of available resources for performing the delay analysis Selects an effective method, cheaper and commercial software like Primavera, skilled delay analyst prepares proper delay analysis submission, the contractual requirement, unskilled delay analyst employed which led to resource wastage and No constraints

In the prior step, all of the codes were grouped into 7 tentative themes. For Reviewing Themes, it is important to analyse, alter and check whether the themes are all relevant or not. To ensure the most accurate review and interpretation of the responses, any repetition must be found and removed here, either in the themes or codes. At this point, the data relevant to each subject and key were checked again and the study examined whether the data supported the emerged themes, respectively as shown in Table 13.

Table 13 Finalized Themes after Review

Theme1: The effective criteria for selecting delay analysis methodologies
Acceptable method Approved method in court As per law Contractual requirements <ul style="list-style-type: none"> o Factors Popularity and acceptance, accurate and realistic, delay events that occur only over limited periods, contractual requirement and capabilities <ul style="list-style-type: none"> o Type of delay No impact and Impacted as Planned Analysis method not suitable for Concurrent delay <ul style="list-style-type: none"> o Project complexity Complex project and complicated delay events mean Windows Time Impact Analysis, a separate Time Impact Analysis Program is dedicated to each of the principal delays, simple project or limited number of delays means Impacted as a Planned Analysis method and contractual requirement is to use Windows/Time Impact Analysis for delay analysis <ul style="list-style-type: none"> o Nature and number of delays Regardless of the nature and number of delay events, the contractual requirement is to use Windows/Time Impact Analysis and simple project or limited number of delays means Impacted as a Planned Analysis method <ul style="list-style-type: none"> o Project records Cannot proceed without project records, the Contractor selects an analysis method only after the availability of the accurate and realistic records, regardless the availability of the project records the contractual requirement is to use the mentioned method and relies on Baseline program

- Availability of resources

Selects an effective method, cheaper and commercial software like Primavera, skilled delay analyst prepares proper delay analysis submission, the contractual requirement, unskilled delay analyst employed, which led to resource wastage and No constraints

The study found from the contractor's point of view for the five case studies that the factor influencing the selection criteria for the delay analysis method/technique is the selection of the acceptable method/technique for delay analysis, the data were collected and analysed for Questions No.1 and 2 as showed above. The study found that the technique selected must be an acceptable method, must be approved in court or as per the law, and must fulfil the contractual requirements. According to [5, 8], the factor for the selection of the delay analysis methodology is the contractual requirement which is the similar factor for the selection of the delay analysis methodology was found in this study.

Furthermore, the other factor for the selection of the method/technique for delay analysis is based on the complexity and simplicity of the delay. The contractor of the project no.01 in this case assumed that complex project and complicated delay events indicated the application of Windows Time Impact Analysis. The contractor of project no.02 used an Impacted as Planned Analysis method. While, the contractors of project nos.04 and 05 again revealed that the complexity of the project did not affect the selection and it was the contractual requirements which affected this decision. This result is similar to the previous research which found that the first factor is to be considered when determining the effective criteria for selecting delay analysis methodologies is the complexity of the delay analysis methods [2].

In addition, the selection of the method/technique for delay analysis is based on the level of the available details and records, the study found that the Contractor of the project no.01 revealed that it was impossible to proceed without project records and the selection relies on the Baseline program. The contractors of projects no.03 and 05 also held the same perception. Further, the contractor of project no.02 reveals that the contractor selects an analysis method only after the availability of accurate and realistic records. However, the contractor of project no.04 identifies that the selection only depends on the contractual requirement and is regardless of the availability of the project records. This result is similar to SCL Protocol and the AACEI guidance provide regulations on the factors for selecting the delay analysis methods whereas the availability of project records [5] and [6].

The selection of the method/technique for delay analysis based on the available recourses, the present thematic analysis addresses the impact of available resources for performing the delay analysis on the decision for selection for the delay analysis method /Technique.

5.0 CONCLUSION

The effective criteria for determining the delay analysis methodologies lie in its acceptance in court and as per law and as per contractual requirements. The study found that the factors influence the selection of the effective criteria for determining the mentioned delay analysis methodologies are

the popularity and acceptance of the selected delay analysis method /technique, accurate and realistic results for delay analysis method /technique, contractual requirement and Capabilities for the selected delay analysis method /Technique. The impact of available resources for performing the delay analysis on the decision for selection for the delay analysis method /Technique are Select an effective method, select cheaper and commercial software like Primavera and skilled delay analyst prepares proper delay analysis submission. The study found that Windows Time Impact Analysis was prepared within the time frame of the contract. Choosing the delay analysis methodology is an important part of the claims industry. Many techniques are used in the UAE, and with the involvement of many factors, the chosen practice became more important to define the delays. The study of this field becomes more important, especially in the absence of sufficient research volumes for UAE construction industry. More studies are required to extend the exploring the effective criteria for determining the delay analysis methodologies.

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