

**DISPUTE MANAGEMENT IN CONSTRUCTION INDUSTRY**

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**UNIVERSITI TEKNOLOGI MALAYSIA**

**DISPUTE MANAGEMENT IN CONSTRUCTION INDUSTRY**

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**A project report submitted in partial fulfillment of the  
requirements for the award of the degree of  
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To my beloved family  
Dad, Mum, Helen, John, Siaw Rui, Chong Thai, Irene and Yaw Zeng

Love is patient, Love is kind,  
It does not envy, It does not boast,  
It is not proud, It is not rude,  
It is not self-seeking,  
It is not easily angered,  
It keeps no record of wrongs.

Love does not delight in evil,  
but rejoices with the truth.

Love always protects, always trusts,  
always hopes, always perseveres.

Love bears all things, believes all things,  
hopes all things, endures all things.

Love Never Ends.

Love Never Fails.

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## ABSTRACT

Construction industry is one of the important contributors to the national development. However, construction industry had been plagued due to the complexity and fragmented process which lead to dispute situation. Hence, the objectives of this study are to review the dispute management in construction industry, to analyze the perceive importance of factors contribute to disputes, to evaluate the contractual methods in dispute avoidance and resolutions, and to develop a framework of dispute avoidance and resolution in variation factor. 30 sets of questionnaires delivered to the expert who actively involved in dealing conflicts and disputes. The study identified 30 factors as the major factors leading to construction dispute. Among the factors, change orders and delay had been recognized as the most contributory factors to the construction disputes. From the analysis, negotiation is the most favorable dispute resolution method in construction industry. The study develops a framework of dispute resolution for construction variation factor based on the data collected.

## ABSTRAK

Industri pembinaan merupakan salah satu penyumbangan utama kepada pembangunan Negara. Akan tetapi, industri pembinaan kini telah dibanjiri dengan masalah-masalah yang diakibatkan oleh projek pembinaan yang kompleks dan tersepih yang turut membawa kepada kesan pertelingkahan. Oleh sedemikian, kajian ini adalah untuk menyelidik pengurusan pertelingkahan dalam industri pembinaan, menilai kepentingan faktor-faktor pertelingkahan, mengenal pasti langkah penyelesaian pertelingkahan dan membentuk suatu rangka penyelesaian masalah pertelingkahan yang berkenaan dengan perubahan kerja pembinaan. Pengumpulan data dilaksanakan dengan menghantar 30 set soal selidik kepada pihak-pihak yang aktif dalam menyelesaikan masalah konflik dan pertelingkahan dalam industri pembinaan. Analisis menunjukkan 30 faktor yang mengakibatkan masalah pertelingkahan dalam industri pembinaan termasuk perubahan pembinaan dan kelambatan pembinaan adalah faktor yang dianggap paling utama dalam mengakibatkan pertelingkahan. Selain itu, perundingan adalah langkah penyelesaian pertelingkahan yang paling berkesan. Hal sedemikian dibuktikan dengan kebanyakan responden mengaplikasikan perundingan sebagai langkah penyelesaian pertelingkahan. Model untuk menyelesaikan masalah pertelingkahan yang diakibatkan oleh variasi pembinaan telah dibentuk berdasarkan data-data yang dikumpul dalam kajian ini.

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# **CHAPTER 1**

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## **INTRODUCTION**

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Introduction**

Project management plays an important role in construction industry. It is an extensive knowledge that brings construction industry to a higher level in advance. Therefore, contractors today more often than not apply project management in their project to ensure a profitable project and hence minimize their risk. Project management can be defined as management procedures which apply to the construction project from the beginning stage to the final stage. The process had been wisely controlled by the client, consultant, contractor and many others who are involved in the project. The purpose of project management is to achieve effective productivity which compliances to human resource, materials, financial resource and technical (Stukhart, 1995)

Rashid, (1999) defines project management as a process of planning, organizing, leading and controlling the workers activities with the existing resources to achieve the project's objectives. However, Koontz and O'Donnell (1976) suggest that project

management can be divided to several functions, such as planning, organizing, leading and controlling. As a result, science management is applied not only to construction industry, but also in business, banking, and manufacturing industry. However, these industries are still holding on those four theoretical functions, planning, organizing, leading and controlling. The main objective of project management is to ensure the construction project is executed in fulfilment of time, cost and quality (Harrison, 1992). While handling a project, the project manager is required to ensure the project is completed in time because any delay in the project will directly increase the project cost and influence the company reputation.

Project control usually refers to management which keeps the project on-track, on-time and within budget. Project control begins early in the project with planning and ends late in the project with post-implementation review, having a thorough involvement of each step in the process. Each project should be assessed for the appropriate level of control needed: too much control is time consuming, too little control is very risky. Control systems are needed for cost, risk, quality, communication, time, change, procurement, and human resources. In addition, contractor should consider how important the projects are to the financial statements, how reliant the stakeholders are on controls, and the numbers of controls that exist. Contractor should also review the development processes and procedures they have implemented. The process of development and the quality of the final product may also be assessed if it is needed or requested. A business may want the auditing firm to be involved throughout the process to detect problems earlier on so that they can be fixed more easily. An auditor can serve as a control consultant as part of the development team or as an independent auditor as part of an audit (Wikipedia Foundation, 2009).

It is generally accepted that construction industry is a complex industry which involves several steps and procedures in managerial system. Consequently, problems usually arise due to the negligence of the parties in project team. The problems that arise mostly lead to the following consequences, Liquidated Ascertained Damages (LAD),

conflicts and disputes, stop work order, withdrawal of the contractors and many others. Eventually, the problems stated will definitely influence the company's reputation and hence brought impact to the company business. It is therefore suggested that a better interpretation and understanding of construction contract can serve as a means of prevention for dispute resolution. Cheung (1999) discussed that the subject of prevention method in dispute resolution creates the teamwork and harmony environment to parties involve in the disputes. It is to prevent any conflict that leads to disputes which influence the relationship among them. Nevertheless, the resolution does not guarantee total dispute elimination, but it is still better than to do nothing.

## **1.2 Issues and Problem Statements**

Construction projects are eventually increasing in complexity which contributes to the increase of construction disputes. Complex construction can likewise often result in complex disputes, which are predominantly arisen from the intricacy and magnitude of the work, multiple prime contracting parties, poorly prepared and/or executed contract documents, inadequate planning, financial issues, as well as communication problems. Any one of these factors can derail a project and lead to complicated litigation or arbitration, increased costs, and a breakdown in the parties' communication and relationship (Harmon, 2003).

A construction project consists of different participants; including owners, designers, contractors, sub contractors and others. Each of them has different objectives and concerns in terms of interest conflicts and disputes in the particular project. Disputes in construction industry typically influence the reputation for both parties whereby reputation represents business opportunities. Such disputes directly affect work quality and the delays

of construction progress. The construction industry continues to struggle to identify ways to resolve disputes equitably and economically. Solutions proposed often focus on defending unilateral benefits or in creating win–win situations. When disputes go into litigation, however, lawyers competent in engineering issues or engineers with legal backgrounds are difficult to find (Ming-Yuan et al, 2009).

Within the past decade, the construction industry in the developed countries has taken steps to avoid litigation and to control disputes. These are done by developing and employing various mechanisms for alternative dispute resolution that can be implemented during almost any stage of a construction project. These mechanisms range from simple negotiation to binding arbitration. Prevention is always better than cure; experience has shown that when resolution occurs sooner rather than later and when this resolution is relatively non-confrontational, there is a much better chance that litigation can be avoided. Waiting until the end of a project to address a dispute inexorably makes it harder and more expensive to resolve. Parties involved in a construction dispute, or indeed any commercial dispute, generally prefer to retain control over the outcome and maintain a working business relationship (Jannadia *et al*, 2000).

Cheung (1999) discussed that the subject of prevention method in dispute resolution is by creating a teamwork and harmony environment to disputants. It definitely helps to prevent the arising of dispute. Nevertheless, the resolution does not guarantee total dispute elimination, but it is still be good as nothing to do. However, it is advisable to take precautions to avoid the arising of disputes in order to safeguard the triple constrains of time, cost and quality.

It is commonly accepted that for a project to be considered as successful, it must be completed within budget, on time and show superior quality of design, materials and workmanship. It has been suggested that one of the success factors of a project is how

organizations approach problems and conflicts. The problems, which are conflict and disputes, are common owing to the complicated nature of the construction industry and the involvement of so many parties along the contractual chain, adversarial relationships, uneven risk allocation and uneven bargaining power. It is therefore suggested that without a proper mechanism for avoiding dispute in the first place, once conflict turns into dispute it could affect project success (COBRA, 2008).

Moreover, the construction industry is perceived to be adversarial due to the fragmentation process of working. This can be attributed to many factors such as the lack of common goals, competing needs of the project team members, inequitable risk allocation, changes in construction plan and specification, and contradictory and erroneous information (Cheung *et al.*, 2004). These are the factors that lead to the construction disputes. Thus, suitable measure and precaution should be designed accordingly for prevention purposes.

Disputes are inevitable in a project setting, and disputes resolution is part of a project manager's core responsibilities. The root causes of dispute in a project setting are largely due to the flaws in the project plan, process, or organization. These project "issues" need to be recognized, captured, remembered, prioritized, and resolved in a systematic manner in order to minimize disputes in the project. As a result, disputes usually extend the project and disturb the working atmosphere (Wang and Yang, 2005). Thus, it is important to avoid the occurrence of the disputes and suitable resolution should always be ready for that purposes.

There are numbers of studies that are related in construction industry which are carried out by the experts in that field. According to the reports, the poor performance of construction industry can either directly or indirectly link to variations. Variations have been described as the cause for disputes and/or conflicts (Gardiner and Simmons 1992 & 1995, Wood 1975) partly because of delays (Bromilow 1970, NEDO 1983) and disruption

(Banwell 1964, Ireland 1985), subsequently leading to cost overruns. The falling rate of productivity has also been attributed to variations (Latham 1994, Moselhi et al. 1990). It is therefore important to study the sources of dispute and to examine the effectiveness of the existing ADR in addressing the problems which emanated from various sources.

### **1.3 Aim**

Construction industry is a risky and challenging industry in which most of the situations are unpredictable and unforeseen. Basically, the problems arise in construction industry may lead to construction conflict and dispute. Since there are so many factors or sources that lead to construction dispute, the aim of this study is to identify the factors that contribute to construction disputes and eventually identify the contractual resolutions for the disputes aroused. Besides, this study also aims to provide a resolution framework in resolving dispute which is related to variations in construction industry. The aim of the study is supported with the following objectives.

### **1.4 Objectives**

- (a) To review the dispute management in construction industry.
  
- (b) To analyze the perceived importance of factors contributing to conflict and dispute.



- (c) To evaluate the current practice of dispute resolution method in construction industry.
- (d) To develop a framework of dispute avoidance and resolution in dispute due to variation factor.

## **1.5 Research Scope**

There were several dissertations that discussed the similar topic in dispute avoidance and resolution in construction industry.

- Procurement method as conflict and dispute reduction mechanism for construction industry in Malaysia
- The causes of construction dispute on client organization
- Clarity of construction contract

The previous dissertations had discussed the procurement method in mitigating construction dispute through the management of contract document. Also, previous researchers had identified the problems faced by the clients in construction industry and the problems of language structure in Standard Form of Contract in managing dispute.

This project extended the previous by reviewing the construction industry and to identify the sources that lead to conflict and disputes. Also, contractual methods in handling disputes through formal and informal ways will be discussed and evaluated in this dissertation. Moreover, a framework of dispute avoidance and resolution will be developed

based on the variation factor. The scope of study is limited to Johor Bahru, Malaysia. The targeted respondents will be limited to the experts who are actively involved in construction contract administration.

## **1.6 Significant of the Study**

The importance of this study is to give clarity to the contractors regarding to the problems that lead to construction conflict and dispute. Once construction parties fully understand the sources, they might able to mitigate it. After all, the understanding will act as the fundamental to prevent the manifestation of construction dispute.

Moreover, this study is also beneficial to those people who are involved in the construction disputes such as employers, architects, contractors, consultants, etc., in relation to resolve the dispute.

Lastly, the dispute avoidance and resolution framework is able to raise awareness of contract administration and increase understanding among the construction parties whereby the users may evaluate themselves before the occurrence of conflicts and disputes while handling variation.

## **1.7 Organization of the Dissertation**

This study consists of five chapters. The brief descriptions of each chapter are as follows:

### **Chapter 1: Introduction**

This chapter presents the overall content of the project writing. It introduces the subject matter and the problems that are purported to solve. The objectives are specified with an appropriate research method to achieve them.

### **Chapter 2: Dispute Avoidance and Resolution**

This chapter reviews the definition of dispute and introduces the common type of disputes avoidance, as well as various types of dispute resolution and it is followed by highlighting its effectiveness to the construction industry.

### **Chapter 3: Contractual Method in Dispute Management**

Also, Standard Form of Contract will be reviewed and discussed for the disputes mitigation purposes.

### **Chapter 4: Data Collection**

The primary data will be collected through questionnaires that are distributed to the experts. The experts refer to those who are actively involved in contract administration work such as contractors, architects, engineers and quantity surveyors. Secondary data will be collected through extensive reading of journals, articles, books and internet resources.

### **Chapter 5: Results and Analysis – Dispute Management in Construction Industry**

This chapter analyses the results from the primary data (questionnaires) which are collected from the respondents. Attempts are made to analyze the most favourable dispute resolution and followed with the experts' opinions. Besides, a theoretical model of dispute avoidance and resolution will be created according to the results from the analysis.

## **Chapter 6: Conclusions and Recommendation**

This chapter presents the conclusions for the overall research and recommendation for future study.

### **1.8 Research Methodology**

#### **(i) Formation of Topic**

A broad span of topic was studied. The research studied mostly from the secondary resource such as journals, previous researches, articles, books and decided court cases. The issues had been identified and analyzed for the purpose of topic formation.

#### **(ii) Data Collection**

Questionnaire (as the primary data) had been used as an instrument for data collection purpose. Also, some of the relevant data from literature review which are collected from the standard form of contract will be reviewed and analyzed. All the data will be discussed and analysed to achieve the objectives.

(c) Data Gathering and Processing (Analysis)

Computer software such as SPSS, Microsoft Office Excel and Microsoft Office Word will be used to analyze the data. Analysis methods are determined according to the suitability of the variable. Among the methods used are Likert Scaling or Indexing, statistical analysis such as frequencies or descriptive, and so forth. Then, a system or model will be developed according to the outcome of the measure, which is validated by the experts.

(d) Writing-up

Writing up is the final stage of the study. This includes the documentation process of summaries, discussion, conclusion, and future study recommendations which are relevant to this study.

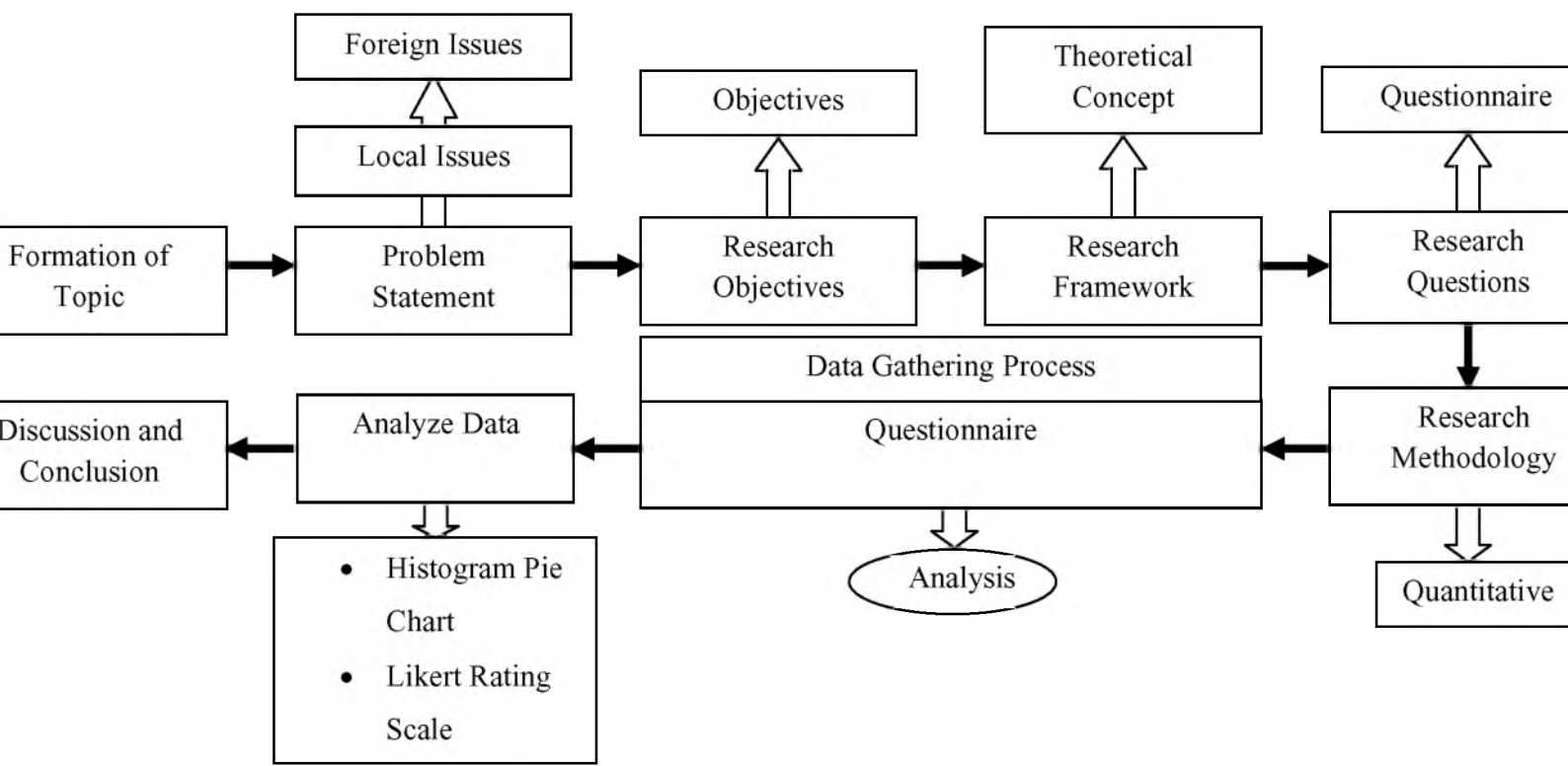


Figure 1.1 Research Design Procedures

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# **APPENDICES**

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# QUESTIONNAIRE

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FACULTY OF CIVIL ENGINEERING  
UNIVERSITY OF TECHNOLOGY MALAYSIA

## **QUESTIONNAIRE**

MASTER DISSERTATION PAPER:

# **DISPUTE MANAGEMENT IN CONSTRUCTION INDUSTRY**

**Strictly Confidential**

Prepared By:

**CHAI CHANG SA'AR**

Master of Science (Construction Management)

Supervisor:

Assoc. Prof. Dr. Aminah Md Yusof

SECTION A : GENERAL INFORMATION

All information to be given will remain **confidential** and used for this study only.

- Profession :  Architect       Contractor       Engineer       Quantity Surveyor
- Position :  Director       General Manager       Project Manager       Contract Manager
- Architect       Engineer       Quantity Survey       Project Engineer/ Executive
- Other (please specify): \_\_\_\_\_

Working Experience (Years) :  Less than 5       5 to 10       More than 10

Name : \_\_\_\_\_

Gender :  Male       Female

Company Name : \_\_\_\_\_

Company Address : \_\_\_\_\_

Contact Number : \_\_\_\_\_

\_\_\_\_\_  
Respondent's Signature

\_\_\_\_\_  
Official Stamp

All information to be given will remain **confidential** and used for this study only.



**SECTION B : SOURCES OF DISPUTES IN PROJECT LIFECYCLE**

*Please identify the sources of disputes that occur in your project lifecycle.*

Rating Scale :

Rarely	Seldom	Moderate	Often	Most Often
1	2	3	4	5

No	Sources of Disputes	Rating				
		1	2	3	4	5
	<b>Part I - Planning Phase</b>					
1	Lack of firm decision deadline					
2	Inaccurate assumptions by parties involved					
3	Inability to gain required support for project					
4	Political decision or pressure					
5	Ineffective communication					
	<b>Part II – Design Phase</b>					
6	Inappropriate selection and procurement of design team					
7	Incomplete programmatic input and design requirement					
8	Inaccurate baseline assumption					
9	Budgetary constraint					
10	Change orders					
	<b>Part III – Contract Phase</b>					
11	Change orders					
12	Additional works					
13	Delays					
14	Contract time					
	<b>Part IV – Construction Phase</b>					
15	Availability of resources					
16	Staff turnover, productivity, experience and training					
17	Adequate project supervision and control					
18	Design errors					
19	Different site conditions					
20	Weather conditions					
	<b>Part V – Close Out Phase</b>					
21	Obtain all necessary permits for occupancy					
22	Facility testing and commissioning					
23	Transmittal of extra materials and spare parts to the owner					
24	Transfer complete manufacture warranties					
25	Start up all major equipment					
26	Preparation of as built drawing					
27	Processing of outstanding invoices for payment					

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**SECTION C : CAUSES OF DISPUTES IN ORGANISATION**

*Please identify the causes of disputes below.*

Rating Scale :

Rarely	Seldom	Moderate	Often	Most Often
1	2	3	4	5

No	Sources of Disputes	Rating				
		1	2	3	4	5
<b>Part I</b>						
1	Failure to respond in timely manner.					
2	Inadequate tracing mechanisms for RFI (Request for information).					
3	Reluctant to check for constructability, clarity and completeness.					
4	Discrepancies / ambiguities in contract documents.					
5	Poor communications between and among the parties involved in the project.					
6	Failure to appoint an overall project manager.					
7	Lowest price mentality in engagement of contractors and designers.					
8	Deficient management, supervision and coordination efforts on the part of the project.					
<b>Part II</b>						
9	Failure to understand its responsibilities under design team contract.					
10	Over-design and underestimate the costs involve.					
11	Inadequate in open and factual communication.					
12	Late information issued and cumbersome approaches to RFIs					
13	Design and specification oversights and errors or omissions resulting from uncoordinated civil, structural, architectural, mechanical and electrical designs.					
14	Incompleteness of drawing and specifications.					
<b>Part III</b>						
15	Inadequate contractor management, supervision and coordination.					
16	Lack of understanding and agreement in contract procurement.					
17	Failure to understand and correctly bid or price the works.					
18	Reluctance to seek clarification.					
19	Failure to plan and execute the changes of works.					
20	Inadequate CPM Scheduling and update requirements.					
21	Delay/suspension of works					

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**SECTION D : DISPUTE RESOLUTION METHOD**

*Please identify the dispute resolution method used in your organisation.*

Key :

Negotiation	Dispute Review Board	Dispute Resolution Advisor	Mediation	Mini Trial	Adjudication	Arbitration	Litigation
Ne	DRB	DRA	Me	Mt	Ad	Ar	Li

No	Sources	Dispute Resolution Methods							
		Ne	DRB	DRA	Me	Mt	Ad	Ar	Li
1	Acceleration								
2	Construction Methods								
3	Contract Terms (Discrepancies)								
4	Defective Information								
5	Delays								
6	Design Errors								
7	Lack of Team Spirit								
8	Misunderstanding								
9	Negligence								
10	Owner								
11	Payment								
12	Performance								
13	Poor Communication								
14	Unrealistic Expectation								
15	Variations								
16	Warranty								
17	Weather								
18	Workmanship								

*All information to be given will remain **confidential** and used for this study only.*

**SECTION D : FRAMEWORK TO RESOLVE VARIATIONS**

Rating Scale :

Rarely	Seldom	Moderate	Often	Most Often
1	2	3	4	5

Part I

*Please indicate the types of variation (s) in your organization.*

No	Variations	Rating				
		1	2	3	4	5
1	Additional					
2	Contract terms					
3	Drawing and specification					
4	Instruction					
5	Organization					
6	Omission					
7	Site variation					
8	Substitution					
9	Others please specify					

Part II

*Please identify the factors that lead to variations*

No	Factors	Rating				
		1	2	3	4	5
1	Aesthetic					
2	Cost					
3	Design					
4	Environment (site condition)					
5	Financial					
6	Poor management					
7	Performance					
8	Quality					
9	Requirement (client, end user)					
10	Time					
11	Weather					
12	Others please specify					

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SECTION D : FRAMEWORK TO RESOLVE VARIATIONS (Cont)

Rating Scale :

Rarely	Seldom	Moderate	Often	Most Often
1	2	3	4	5

Part III

*Please identify the method of resolution used to resolve disputes related to variation in your organization.*

No	Dispute Resolution Methods	Rating				
		1	2	3	4	5
1	Negotiation					
2	Standing Neutral					
a	Dispute Review Board					
b	Dispute Resolution Advisor					
3	Non Binding Resolution					
a	Mediation					
b	Mini Trial					
c	Adjudication					
4	Binding Resolution					
a	Arbitration					
5	Litigation					
a	Court Action					

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